



**TRACTOR SUPPLY COMPANY PROJECT**  
Modified Initial Study

February 8, 2023

**Prepared for:**  
City of Suisun City  
Development Services Department  
701 Civic Center Boulevard  
Suisun City, California 94585

**Prepared by:**  
Stantec Consulting Services Inc.  
1340 Treat Boulevard, Suite 300  
Walnut Creek, California 94597

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Prepared by:



Signature

Emily Medler

Emily Medler

Reviewed by:



Signature

Kristin Pollot

Kristin Pollot

Approved by:



Signature

Christine Abraham

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## Acronyms / Abbreviations

AB	Assembly Bill
APS	Alternative Planning Strategy
BAAQMD	Bay Area Air Quality Management District
Basin Plan	San Francisco Bay Basin Water Quality Control Plan
BCC	birds of conservation concern
BMPs	Best Management Practices
BTU	British Thermal Unit
CAA	Federal Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAL Fire	California Department of Forestry and Fire Protection
CalGreen	California Code of Regulations Title 24 Part 11
Caltrans	California Department of Transportation
CARB	California Air Resources Board
Carbon monoxide	CO
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CH <sub>4</sub>	Methane
CHRIS	California Historical Resources Information System
City	City of Suisun City
Clean Air Plan	BAAQMD 2017 Clean Air Plan
CMU	Commercial Mixed Use
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Species
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide emissions
CPUC	California Public Utilities Commission
CRPRs	California Rare Plant Ranks
CWA	Clean Water Act
dB	decibel
DOC	California Department of Conservation
DOF	Department of Finance



DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EO	Executive Order
ESA	Endangered Species Act
FAST	Fairfield Transit
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FSSD	Fairfield-Suisun Sewer District
FSURMP	Fairfield-Suisun Urban Runoff Management Program
FSUSD	Fairfield-Suisun Unified School District
General Plan EIR/GP EIR	City of Suisun City 2035 General Plan Environmental Impact Report
GHG	Greenhouse Gas Emissions
GWP	Global Warming Potential
HCP	habitat conservation plan
HFCs	Hydrofluorocarbons
in/sec PPV	particle peak velocity in inches per second
ITE	Institute of Transportation Engineers
ITP	Incidental Take Permit
kBTU	Thermal units per year
KW/hr	Kilowatt-hours
Ldn	day-night sound level
Lead Agency	City of Suisun City or City
Leq	equivalent sound level
LID	Low Impact Development
LHMP	Local Hazard Mitigation Plan
LOS	level-of-service
Lmax	maximum sound level
Lmin	minimum sound level
LSAA	Lake or Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
MEI	Maximally exposed individual
MMT	million metric tons
mph	miles per hour
MRZ	Mineral Resource Zone
NAHC	Native American Heritage Commission
NF <sub>3</sub>	Nitrogen trifluoride
NFIP	National Flood Insurance Program
NO <sub>2</sub>	Nitrogen dioxide



NO <sub>x</sub>	Nitrous oxides
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
NWIC	Northwest Information Center
OES	Office of Emergency Services
OPR	Governor's Office of Planning and Research
OSC	Open Space and Conservation
Ozone	O <sub>3</sub>
PCR	Public Resources Code
PFCs	Perfluorocarbons
PG&E	Pacific Gas and Electric
Planning Area	Area covered under the City's General Plan EIR
PM <sub>10</sub>	Particulate Matter less than 10 microns
PM <sub>2.5</sub>	Particulate Matter less than 2.5 microns
PPV	peak particle velocity1QA
Project, proposed Project	Tractor Supply Company Project
ROG	Reactive organic gases
ROW	Right-of-Way
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCFD	Suisun City Fire Department
SCPD	Suisun City Police Department
SCS	Sustainable Community Strategies
SF <sub>6</sub>	Sulfur Hexafluoride
SID	Suisun-Solano Irrigation District
SMHCP	Solano Multispecies Habitat Conservation Plan
SMP	Suisun Marsh Habitat Management, Preservation, and Restoration Plan
SR	State Route
SSC	Species of special concern
SSWA	Suisun-Solano Water Authority
STA	Solano Transportation Authority
SWRCB	State Water Resources Control Board
Sulfur dioxide	SO <sub>2</sub>
SWPPP	Stormwater Pollution Prevention Plan
TAC	Toxic Air Contaminants
TCRs	tribal cultural resources



TNW	total navigable waters
TPA	Transit Priority Areas
µg/m <sup>3</sup>	micrograms per cubic meter
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UWMP	SSWA's 2015 Urban Water Management Plan
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled



# 1 Introduction

Tractor Supply Company (Applicant) is proposing to construct the Tractor Supply Project (proposed Project, Project), a new Tractor Supply Company retail center on an undeveloped, vacant 3.17-acre site in Suisun City, California. The proposed Project would involve the construction of a 22,135 square foot retail center, associated parking areas, landscaping, and utility improvements.

## 1.1 Modified Initial Study

This Modified Initial Study has been prepared to identify and assess the potential environmental impacts of the proposed Project. This document relies, in part, on the City of Suisun City 2035 General Plan approved by the Suisun City Council on October 9, 2014, and its accompanying Environmental Impact Report (EIR) (SCH#2011102046), also certified on October 9, 2014 (AECOM).

This document has been prepared to satisfy the California Environmental Quality Act (CEQA), (Public Resources Code [PRC], Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulation [CCR] 15000 et seq.). CEQA requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority before acting on those projects. The environmental analysis in this CEQA document relies on Sections 15162, 15168, and 15183 of the CEQA Guidelines, which govern program EIRs and projects consistent with a general plan or community plan.

Under Section 15183 of the CEQA Guidelines, where a project is consistent with the use and density established for a property under an existing general plan or zoning ordinance for which the city has already certified an EIR, no additional environmental review is required “except as might be necessary to examine whether there are project-specific significant effects which are peculiar to the project or its site.”

If these requirements are met, the examination of environmental effects is limited to those which the agency determines, in an initial study or other analysis:

- 1) Are peculiar to the project or the parcel on which the project would be located,
- 2) Were not analyzed as significant effects in a prior EIR on the zoning action, general plan or community plan with which the project is consistent,
- 3) Are potentially significant off-site impacts and cumulative impacts which were not discussed in the prior EIR prepared for the general plan, community plan or zoning action, or
- 4) Are previously identified significant effects which, as a result of substantial new information which was not known at the time the EIR was certified, are determined to have a more severe adverse impact than discussed in the prior EIR. (CEQA Guidelines Section 15183(b)).



## Tractor Supply Company Project Modified Initial Study

Under these sections, the program EIR, in this case the City's 2035 General Plan EIR (General Plan EIR), serves as a basis for the Modified Initial Study to determine if project-specific impacts would occur that are not adequately covered in the previously certified EIR.

The proposed Project's land use and development assumptions are consistent with the City's General Plan. Therefore, the Lead Agency (City of Suisun City or City) is not required to examine environmental impacts that have already been adequately evaluated in the previously certified General Plan EIR if the Project would not lead to new or substantially greater environmental impacts, or to a significant impact that is peculiar to the Project or to the Project site.

This Modified Initial Study is a public document used by the City to determine whether the proposed Project may have a significant effect on the environment. If the City finds substantial evidence that any aspect of the proposed Project, either individually or cumulatively, may have a significant effect on the environment, regardless of whether the overall effect of the proposed Project is adverse or beneficial, the City is required to prepare an EIR. Where the City determines that these impacts may be significant while others would not be significant or can clearly be mitigated to less than significant levels through mitigation measures to which the Project proponent has agreed, the City may prepare an EIR focused on the potentially significant impacts. Under this last approach, the City may use an Initial Study to satisfy the requirements of CEQA Guidelines Section 15168(c)(4) and Section 15128.

As documented herein, since the certification of the City's General Plan EIR in 2014, there have been no significant changes in the physical environment that could result in a new or substantially increased impact related to the proposed Project.

This Modified Initial Study serves to evaluate whether the environmental impacts of the proposed Project are adequately addressed in the General Plan EIR. This Modified Initial Study indicated whether the proposed Project would result in a significant impact that: (1) is peculiar to the Project or the Project site; (2) was not identified as a significant effect in the General Plan EIR; or (3) are previously identified significant effects which as a result of substantial new information that was not known at the time the General Plan EIR was certified, are determined to have a more severe adverse impact than discussed in the General Plan EIR. Such impacts, if any, would be evaluated in an EIR (CEQA Guidelines Section 15183).

## 1.2 Purpose

The purpose of the proposed Project is to construct a Tractor Supply Center retail center and business within the City. This Modified Initial Study has been prepared to evaluate the proposed Project for potential environmental effects in compliance with CEQA (see Section 1.1, Modified Initial Study, for more details). The City is the lead agency under CEQA and has the principal responsibility for carrying out or approving a Project that may have a significant effect on the environment. This Modified Initial Study has been prepared in anticipation of determining that all potentially significant impacts from implementing the proposed Project can be mitigated to less than significant levels. This document has been prepared in accordance with CEQA, Public Resources Code (PRC) Section 21000 et seq., and the state CEQA Guidelines, California Code of Regulations (CCR), Title 14, Section 15000 et seq.



## 1.3 Project Location

The Project site is situated on an 8.29-acre vacant and undeveloped lot, located immediately north of Highway 12, between Sunset Avenue and Snow Drive (between the 7-Eleven/76 fueling station and residences), in the City of Suisun City (City) , as shown in Figure 1. The Project site consists of Assessor's Parcel Numbers 0173-390-160 and 0173-390-180. The proposed Project includes subdivision of the 8.29 parcel into two parcels. The proposed Project would develop approximately 3.17 acres of the site and the remaining 5.12 acres are not included as part of the Project. As such, this Modified Initial Study only evaluates the 3.17-acre Tractor Supply Company Project site, as shown in Figure 2.

## 1.4 Existing Site Conditions

The Project site is located within a highly urbanized area. The Project site is vacant and undeveloped with minor vegetation growth, and there are no existing operations on the Project site.

## 1.5 Surrounding Land Uses

The Project site is surrounded by the following land uses:

- **North** – vacant, single-family residential uses, United States Postal Service Office
- **East** – single-family residential uses
- **South** – Highway 12
- **West** – single-story Sunset Commercial Retail center, including a 7-Eleven and Chevron fueling station

## 1.6 General Plan and Zoning

### 1.6.1 GENERAL PLAN AND ZONING DISTRICT

The City of Suisun City 2035 General Plan covers approximately 5,290-acres within the City which extends from LedgeWood Creek on the west to points east of Travis Air Force on the east and from East Tabor Avenue on the north to Suisun Slough and Suisun Marsh on the south. This area is referred to as the Planning Area.

The City of Suisun City Zoning Map categorizes the Project parcels under the Commercial Mixed Use (CMU) Zoning District. The Project site is zoned as CMU (Commercial Mixed Use), and the General Plan land use designation is also CMU. The City's General Plan defines this land use as:

- **Commercial Mixed Use.** The Commercial Mixed Use zoning district is applicable to parcels where a variety of commercial uses are desired as the primary use, with residential uses permitted as a secondary use. Commercial and other nonresidential uses in this zone may be within the 0.25:1.0 floor area ratio range, with residential uses to be developed within the 10-40





dwelling units per acre range. Residential uses are not required on any given parcel, but if included, must be above or behind ground floor commercial uses in this zone (City of Suisun City 2017).

### 1.7 Required Project Approvals

The proposed Project discretionary actions to be considered include, but may not be limited to, the following:

#### City of Suisun City

- Lot Line Adjustment
- Site Plan and Architectural Review
- Variance

#### California Department of Transportation (Caltrans)

- Caltrans Encroachment Permit

#### Regional Water Quality Control Board

- Stormwater Pollution Prevention Plan/Construction General Permit

### 1.8 Modified Initial Study Scope

As the lead agency under CEQA, the City is responsible for compliance with the environmental review process prescribed by the CEQA Guidelines. This Modified Initial Study substantiates the extent to which the City's General Plan EIR and its accompanying Supplemental EIR determinations are applicable to the proposed Project.

The following is an overview of the steps followed for the environmental review of the proposed Project.

- Review the proposed Project against the impact analysis and mitigation measures contained in the City's General Plan EIR and its accompanying Supplemental EIR.
- Identify any previously adopted mitigation measures from the General Plan EIR and its accompanying Supplemental EIR that apply to the proposed Project.

The primary sources reviewed for the preparation of this Modified Initial Study are the City's General Plan EIR and its accompanying Supplemental EIR, and associated technical studies, which are available at the City's Development Services Department office and online at:

<https://www.suisun.com/departments/development-services/planning/general-plan/>.



## 1.9 Document Organization

This CEQA document is organized as follows:

**Section 1.0: Introduction.** This section describes the Modified Initial Study process, introduces the proposed Project and describes the purpose, location, existing setting and surrounding land uses, land use and zoning designations, required permits and approvals, scope of the modified initial study, and organization of this document.

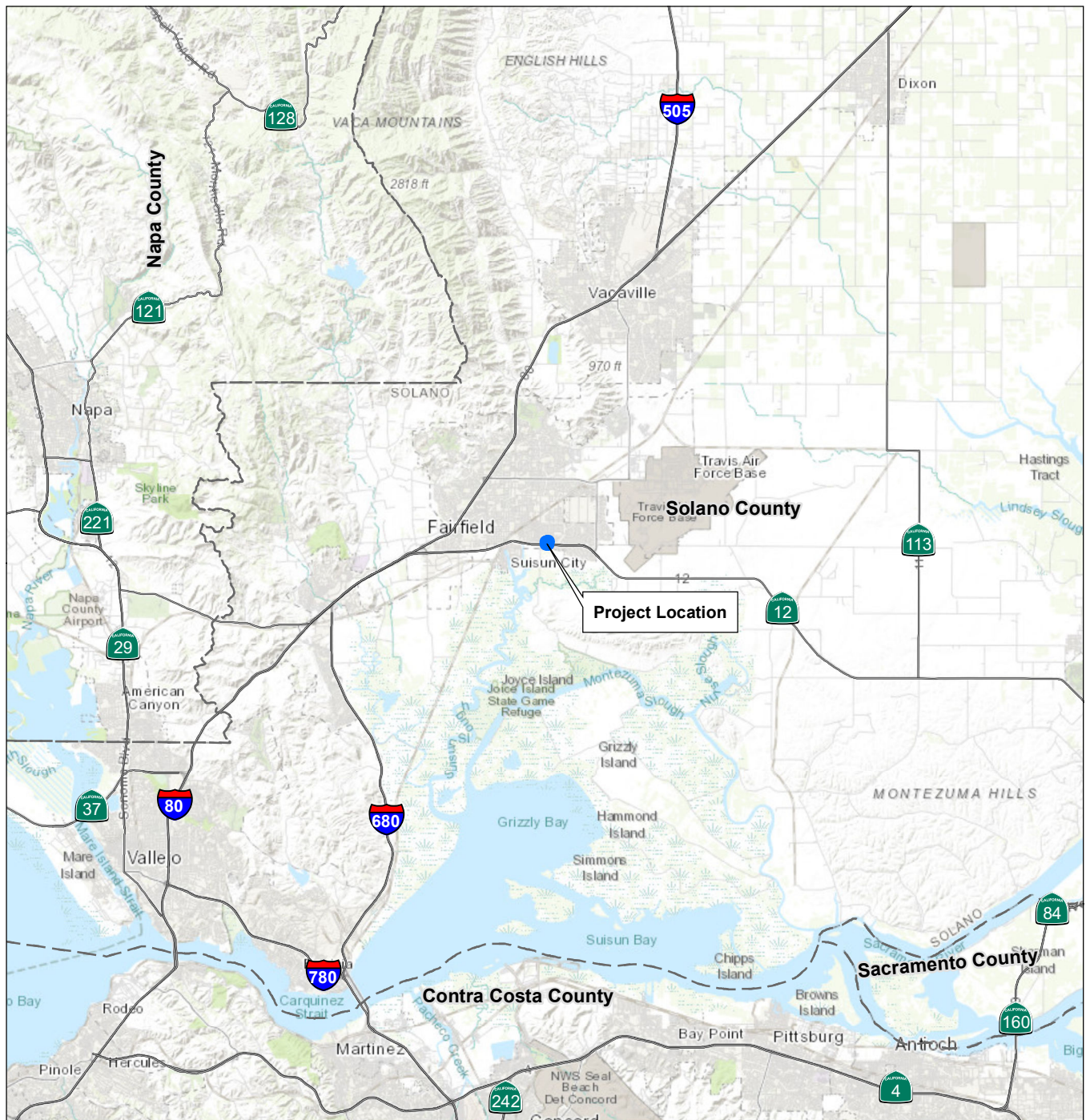
**Section 2.0: Project Description.** This section provides a detailed description of the proposed Project.

**Section 3.0: Environmental Checklist and Evaluation.** This section presents an analysis of the range of environmental issues identified in the CEQA Environmental Checklist and determines for each topic whether the Project would result in a significant impact peculiar to the proposed Project or the Project site, significant impact due to new information not available during the drafting of the General Plan EIR and its accompanying Supplemental EIR, or if a Project impact has already been adequately addressed in the General Plan EIR and its accompanying Supplemental EIR.

**Section 4.0: References.** This section lists the references used in preparing this Modified Initial Study.

**Section 5.0: List of Preparers.** This section identifies the report preparers.





 Project Location

0 15,000 30,000 Feet  
(At original document size of 8.5x11)  
1:300,000



Project Location Prepared by GM on 2022-12-12  
Suisun City, Solano County, California TR by SET on 2022-12-12  
IR by EM on 2022-12-12  
Client/Project 2042648300

City of Suisun City  
Tractor Supply Project

Figure No.

1

Title

Regional Map

**Notes**

1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Data Sources: Stantec, 2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

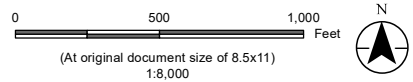
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**Notes**  
1. Coordinate System: NAD 1983 StatePlane California II  
FIPS 0402 Feet  
2. Data Sources: Stantec, 2022.  
3. Background: Sources: Esri, HERE, Garmin, Intermap,  
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 Project Location



**Project Location** Prepared by GM on 2022-12-12  
Suisun City, Solano County, California TR by SET on 2022-12-12  
IR by EM on 2022-12-12  
**Client/Project** 2042648300

**City of Suisun City**  
**Tractor Supply Project**

**Figure No.**

**2**

**Title**

**Project Vicinity**

## 2 Project Description

This chapter describes the characteristics of the proposed Project that is evaluated in this Modified Initial Study.

### 2.1 Project Characteristics

#### 2.1.1 TRACTOR SUPPLY

The Project would include the construction and operation of a Tractor Supply Company retail center, with outdoor sales yards, a supporting surface parking lot with 94 parking spaces, and on-grade truck delivery docks at the rear of the property, as show in Figure 3. The Project would develop a single-story, approximately 22,135-square-foot retail space (approximately 30 feet in height), including supporting surface parking and landscaping.

Tractor Supply Company is a farm and agricultural equipment supplier/retail supplier. The Project hours of operation would be standard retail hours, seven days per week between the hours of 8 AM and 9 PM. Operation of the Project would require 10 to 12 employees at any one time, with the number of customers anticipated to be usually nor more than 25 customers at a time. The Project would involve the construction of the 22,135-square-foot retail center, including retail sales area of 15,557 square feet, pet wash area of 131 square feet, feed storage area of 3,335 square feet, 4,368-square-foot garden center, along with associated parking areas, landscaping, and utility improvements. Other outdoor display areas would include an approximately 1,920-square-foot trailer equipment display area and other outdoor vehicles displayed, such as trailers. Outdoor vehicles sold at the retail center would include different types of utility vehicles, ATVs, minibikes, and go-karts. Minor odors from the storage and use of fertilizers are anticipated resulting from Project operation. Noise generated from the Project operation would only include typical retail noise from customer vehicles. Operation of the Project would involve the use and storage of small amounts of hydraulic fluid and vehicle oil. Truck deliveries required for Project operation would typically only occur once or twice a week, with a delivery duration of approximately 45 minutes each. Truck deliveries would occur in the loading/unloading area located along the east facing side of the building and would typically arrive between the hours of 8 AM and 9 PM.

#### 2.1.2 LANDSCAPING

There are currently no trees on the Project site. The total Project site is approximately 3.17-acres, which would include approximately 12,433 square feet (approximately 1.11 acres) of new ornamental landscaping, primarily located in the parking lot areas and along the Project periphery, where it would be used to create a buffer for residential uses to the east, as shown in Figure 4. The landscaped areas would cover approximately 35 percent of the total Project site. The Project would also provide approximately 2.05-acres of impervious surfaces for the parking lot and driveway areas. Landscaped areas in the parking lot would result in approximately 21 percent of the parking area being landscaped. The frontage south of the proposed building and north of Highway 12 would by hydroseeded with an approved native seed mixture. Any existing vegetation prior to construction of the Project would be removed during



grading activities. A final landscape plan would be submitted for the City's review and approval in conjunction with the entitlement process.

### **2.1.3 SUSTAINABILITY**

During construction of the commercial building, the roof would be designed to accommodate a future solar array and panels. Additionally electrical utilities would be constructed and designed to be approximately 12 percent below Title 24 requirements.

### **2.1.4 OFF-SITE IMPROVEMENTS**

Off-site improvements would include the development of two additional sidewalk connections on the south side of the Project site, to connect to the existing sidewalk along the southern Project frontage. Approximately 58 square feet of concrete would be required for these connections. A California Department of Transportation (Caltrans) encroachment permit would also be required for these connections.

### **2.1.5 VEHICULAR AND PEDESTRIAN ACCESS**

Entrance to the Project site would be via two entry points: the primary entry point would be off Sunset Avenue, north of Highway 12, via a driveway located between a McDonald's and a Taco Bell restaurant. The second access point would be off Highway 12, between the Chevron and the 7-Eleven/76 fueling stations.

### **2.1.6 PARKING**

The Project would provide an approximately 60,200-square-foot surface parking lot with 94 parking spaces, consisting of 77 standard vehicle spaces; four accessible; eight clean air, electric vehicle, or vanpool; and five future accessible electric vehicle charging spaces. In addition to the vehicle parking spaces, the Project would provide two bicycle racks with eight total spaces. Pole-mounted security lighting would be placed throughout the parking lot for security lighting purposes. The poles would be approximately 27 feet in height, with lighting directed down to reduce light spillover to adjacent uses.

### **2.1.7 UTILITIES**

#### **Water Supply**

Along Highway 12 near the southern portion of the Project site, the existing utilities consist of a 12-inch water main which is available to serve the site. The proposed Project includes installation of a new 8-inch water main to connect to the existing 12-inch water main in order to sufficiently supply the Project site. Additionally, a 2-inch lateral water line is proposed to connect to the 8-inch water main to supply the proposed building and onsite irrigation.

Two fire hydrants are proposed to be constructed as part of the Project. One fire hydrant is proposed to be constructed on the northeastern corner of the Project site adjacent to the eastern delivery and



alleyway. A second fire hydrant is proposed to be constructed in the southern portion of the Project site along the southeastern side of the proposed parking lot. Both new fire hydrants would be supplied and connected to the main water line through two, newly constructed 6-inch fire water lines.

Water utility services to the Project area would be provided by the Suisun-Solano Water Authority.

### **Wastewater, Sewer and Solid Waste**

Existing wastewater utilities include a 36-inch sanitary sewer pipe running within a 15-foot easement along the southern side of the Project site, parallel to Highway 12. This sewer main is owned and maintained by the Fairfield-Suisun Sewer District (FSSD).

Two 6-inch sewer laterals from the building are proposed and would be routed to a proposed sewer manhole to tie into the existing sewer main to the south. An additional 6-inch lateral would be provided for the drain in the trash enclosure and a stub for future projects to the north. Sewer and wastewater services to the Project area would be provided by FSSD. Solid waste utility services to the Project area would be provided by Republic Services.

### **Stormwater**

Existing stormwater utilities include a 42-inch storm drain pipe running within a 10-foot storm drain easement along the southern side of the property, parallel to Highway 12.

Stormwater would be routed to three onsite bioretention basins for infiltration and cleaning through drain rock. The sizes of each basin are as follows: Basin 1 is 1,471-square feet (820-cubic feet); Basin 2 is 1,641-square feet (821-cubic feet); Basin 3 is 1,991-square feet (996-cubic feet). Excess water would collect in 4-inch perforated underdrain pipes within the drain rock, or through overflow into area drains where it would be routed within 18-inch storm drain pipes into the existing 42-inch storm drain to the south. Connection to the existing main would require two storm drain manholes. Two 18-inch storm drain stubs have already been provided to the north of the site for future projects.

### **Electricity, Gas, and Telecommunications**

The proposed Project would utilize existing underground utility lines along the frontage area near Highway 12 and Sunset Avenue. Electrical and natural gas services to the Project area would be provided by Pacific Gas and Electric (PG&E).

## **2.2 Project Construction**

### **2.2.1 SCHEDULE**

Construction activities would occur during the work week, Monday through Friday, between 7 AM and 8 PM, consistent with the City's Municipal Code requirements applicable to construction activities. Any work outside of the City's construction hours would require special permits. Table 2-1 shows the anticipated schedule with the assumption that the construction would begin in the first quarter of 2023. This Project



schedule is dependent on market conditions, regulatory approvals, and other factors; therefore, it is subject to change.

**Table 2-1: Project Construction Schedule**

Task	Start Date	End Date	Workdays
Site Demolition	3/6/2023	3/10/2023	5
Site Preparation	3/12/2023	3/20/2023	5
Grading	3/22/2023	4/3/2023	15
Building Construction	4/5/2023	10/5/2023	135
Paving	9/18/2023	9/19/2023	2
Architectural Coating	Assumed to be paint and/or exterior wall system components; included with Building Construction		

### 2.2.2 ACCESS AND STAGING

Travel routes for construction workers, soils export, and material import would be determined in consultation with the City's Public Works Department and included in the construction traffic management plan to be developed in accordance with the City's standard conditions of approval. All construction materials would be stored onsite.

### 2.2.3 CONSTRUCTION EQUIPMENT AND WORKERS

Construction equipment anticipated onsite is listed in Table 2-2. The Project's construction is expected to require approximately 50 workers during peak construction stage (exterior envelope and interior buildout operations) in 3rd quarter of 2023 and 4th quarter of 2023. Peak construction traffic is anticipated to occur during 2nd quarter 2023 which would be during mass excavation operations. During this time, approximately 20 off-haul truck trips per day are expected to occur.

**Table 2-2: Proposed Construction Equipment**

Phase Name	Equipment Type	Number of Equipment	Usage (hours/day)
Site Preparation (includes demolition and undergrounding utilities)	Excavators	2	8
	Generators	1	8
	Compressors	1	8
	Backhoe	1	8
	Bobcat Loader	1	8
	Excavators	1	8
	Backhoe	1	8
	Generator	1	8





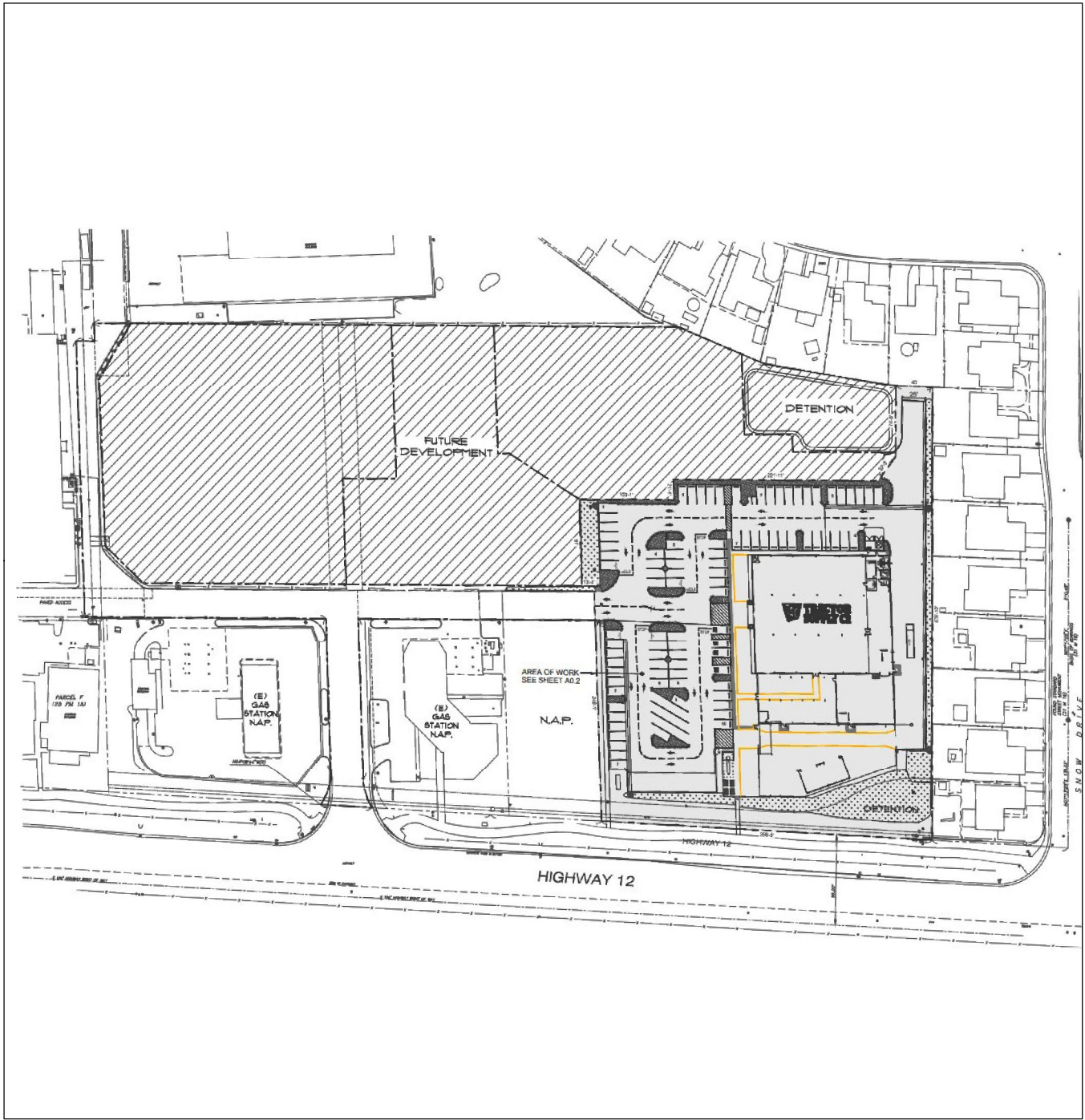
Phase Name	Equipment Type	Number of Equipment	Usage (hours/day)
	Roller / Compactor	1	8
	Welding Machine (electric)	1	8
	Backhoe	1	8
Paving (includes site improvements, hardscape, landscape)	Asphalt Paver	1	8
	Roller	2	8

### 2.2.4 GRADING, EXCAVATION, AND DEMOLITION

The Project site is vacant and undeveloped. The Project site currently consists almost entirely of unpaved areas. The proposed Project would result in 89,289 square feet of impervious area post construction. Pervious site surfaces would include landscaped and garden areas such as tree wells and flow through planters.

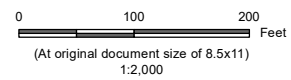
Project grading activities would require approximately 272 cubic yards of cut and approximately 7,272 cubic yards of fill material. The maximum depth of excavation for the proposed Project would be 5 feet, and no demolition debris is expected to be generated from the site preparation activities. The 272 cubic yards of cut material would be reused onsite, and as such, a net total of approximately 7,000 cubic yards of fill material would be imported.





**Notes**

1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet
2. Data Sources: Stantec, 2022.
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri



Project Location Prepared by GM on 2023-01-17  
Suisun City, Solano County, California TR by SET on 2023-01-17  
IR by EM on 2023-01-17  
Client/Project 2042648300

City of Suisun City  
Tractor Supply Project

Figure No.

**3**

Title  
**Site Reference Plan**

PARKING LOT TO LANDSCAPE RATIO  
PARKING LOT LANDSCAPING AREA 12,438 SF  
PARKING LOT AREA 60,220 SF = 21% LANDSCAPING



**Notes**  
1. Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet  
2. Data Sources: Stantec, 2022.  
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri

#### LEGEND

SYMBOL	BOTANICAL NAME COMMON NAME WATER USE
	TAXUS BACCATA 'FASTIGIATA' YEW LOW WATER USE
	LEPTOSPERMUM SCOPARIUM 'RUBY GLOW' NEW ZEALAND TEA TREE LOW WATER USE
	RHAPHIOLEPIS INDICA 'SPRINGTIME' INDIAN HAWTHORN LOW WATER USE
	JUNIPERUS HORIZONTALIS 'SHAR HARBOR' CARPET JUNIPER LOW WATER USE
	DIETES IRIDIODES 'FORTNIGHT LILY' LOW WATER USE
	GERMUS PEDONARIA DEODARUS CEDAR LOW WATER USE
	PISTACHIA CHINENSIS CHINESE PISTACHE LOW WATER USE
	PESTICIA SPECIES NON-HIGH PESTICIDE LOW WATER USE

MAXIMUM APPLIED WATER ALLOWANCE			
MANA = (ETp-Ep)(1/0.62) [(0.45/HA)+(0.45/SLA)]			
where:			
MANA	= MAXIMUM APPLIED WATER ALLOWANCE	VALUES	48.50
Ep	= REFERENCE EVAPOTRANSPIRATION		6.25
ETp	= EFFECTIVE PRECIPITATION 25% OF ANNUAL RAINFALL		0.62
OT	= CONVERSION FACTOR TO GALLONS PER SQUARE FOOT		0.45
OT	= ET ADJUSTMENT FACTOR		0.45
HA	= LANDSCAPE AREA INCLUDES SPECIAL LANDSCAPE AREA		28,242
SLA	= ADDITIONAL ADJUSTMENT FACTOR FOR SLA		0.3
SLA	= SPECIAL LANDSCAPE AREA		0
MANA = 580,580 GALLONS PER YEAR			
ESTIMATED TOTAL WATER USE			
ETW = (Ez-Ep)(1/0.62)[(PF x HA)/(E) + (E) + SLA]			
where:			
ETW	= ESTIMATED TOTAL WATER USE	VALUES	48.50
Ez	= REFERENCE EVAPOTRANSPIRATION		2
PF	= PLANT FACTOR LOW		5
PF	= PLANT FACTOR MEDIUM		5
HA	= HYDROZONE AREA LOW OVERHEAD		58,091
HA	= HYDROZONE AREA LOW Drip		2,495
SLA	= SPECIAL LANDSCAPE AREA		0
OT	= CONVERSION FACTOR TO GALLONS PER SQUARE FOOT		0.62
E	= IRRIGATION EFFICIENCY OVERHEAD SPRAY		0.75
E	= IRRIGATION EFFICIENCY UNDERGROUND Drip		0.81
ETW = 184,156 GALLONS PER YEAR			
PLANT FACTOR			
HYDROZONE	WATER USE TYPE	PLANT FACTOR	AREA (PF X AREA/E)
PLANTS OVERHEAD	LOW	1.2	58,091
PLANTS Drip	LOW	1.2	2,495
TOTALS			28,242

0 50 100 Feet  
(At original document size of 8.5x11)  
1:820



Project Location

Suisun City,  
Solano County, California

Client/Project

City of Suisun City  
Tractor Supply Project

Figure No.

4

Title  
Preliminary Landscape Plan



Prepared by GM on 2023-01-17

TR by SET on 2023-01-17

IR by EM on 2023-01-17

2042648300

### 3 Environmental Checklist

This section presents the discussion of impacts related to the following environmental subjects for consistency with the City's 2035 General Plan Environmental Impact Report (General Plan EIR):

- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Aesthetics                         | <input checked="" type="checkbox"/> Hazards and Hazardous Materials | <input checked="" type="checkbox"/> Public Services                    |
| <input checked="" type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Hydrology and Water Quality     | <input checked="" type="checkbox"/> Recreation                         |
| <input checked="" type="checkbox"/> Air Quality                        | <input checked="" type="checkbox"/> Land Use and Planning           | <input checked="" type="checkbox"/> Transportation                     |
| <input checked="" type="checkbox"/> Biological Resources               | <input checked="" type="checkbox"/> Mineral Resources               | <input checked="" type="checkbox"/> Tribal Cultural Resources          |
| <input checked="" type="checkbox"/> Cultural Resource                  | <input checked="" type="checkbox"/> Noise                           | <input checked="" type="checkbox"/> Utilities and Service Systems      |
| <input checked="" type="checkbox"/> Energy                             | <input checked="" type="checkbox"/> Population and Housing          | <input checked="" type="checkbox"/> Wildfires                          |
| <input checked="" type="checkbox"/> Geology and Soils                  |   | <input checked="" type="checkbox"/> Mandatory Findings of Significance |
| <input checked="" type="checkbox"/> Greenhouse Gases                   |   |  |

The following contains a modified environmental checklist based on the form included in Appendix G of the CEQA Guidelines. The modified checklist or Initial Study is used to describe the potential impacts of the Project. A discussion follows each environmental issue identified in the checklist.

For this checklist, the following designations are used:

**Significant Impact Peculiar to the Project or Project Site:** An impact that could be significant due to something peculiar to the Project or the Project site that was not previously identified in the General Plan EIR, consistent with Section 15183 of the CEQA Guidelines. If any potentially significant impacts are identified, an EIR must be prepared that analyzes those impacts.

**Significant Impact due to New Information:** Any impact that would be considered significant based on new information which was not known at the time the prior EIR was prepared. If any significant impacts are identified, an EIR must be prepared that analyzes those impacts consistent with Section 15168 and 15162 of the CEQA Guidelines.

**Impact Adequately Addressed in General Plan EIR:** Impacts previously evaluated in the General Plan EIR that would not change from what was evaluated previously. This designation applies where the Project would not result in a new significant impact, a substantially increased significant impact, or a peculiar impact that was not analyzed in the General Plan EIR.





### 3.1 Aesthetics

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>I. AESTHETICS</b> — Except as provided in Public Resources Code Section 21099, would the project:			
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.1.1 ENVIRONMENTAL SETTING

The Project site is located in Suisun City on an undeveloped lot along Highway 12. The Project site is within the Planning area. The City's Planning Area consists of approximately 5,290-acres extends from Ledgewood Creek on the west to the points east of Travis Air Force on the east and from East Tabor Avenue on the north to Suisun Slough and Suisun Marsh on the south. The existing visual environment of the Planning Area is composed of a mixture of commercial retail and services, residential, and open spaces. The Suisun Marsh, the Vaca Mountains, Cement Hills, and the Coastal Range are several unique scenic vistas in close proximity to the City. These resources are able to be viewed throughout the entire Planning Area and contribute to the City's unique visual character (City of Suisun City 2014).

#### 3.1.2 DISCUSSION

##### a) Would the Project have a substantial adverse effect on a scenic vista?

The Project involves the development of a 22,135-square foot retail space, approximately 30 feet in height, with supporting surface parking and landscaping. The Project site is a 3.17-acre undeveloped lot located in the central portion of the City. The City's General Plan EIR identified that views of the scenic vistas within and surrounding the City are observed throughout the entire Planning Area (City of Suisun City 2015a). The Project site is located in a highly developed area of the City with a mix of residential and commercial retail uses and is not located in the vicinity of a scenic vista. Implementation of the General Plan has the potential to substantially alter or block some views of the Suisun Marsh, Coastal Range, Cement Hill, and Vaca Mountains; however, several of the General Plan policies included under Objective CCD-6 are intended to preserve and enhance scenic views within the City and increase visual access. The Project would include the construction of a large retail space; however, the retail space would not exceed 30 ft in height matching the visual character of the surrounding uses. Additionally, the Project



would be designed in accordance with applicable zoning and regulations governing scenic quality. Therefore, the Project would not have a substantial adverse effect on a scenic vistas and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**b) Would the project substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

There are no designated state scenic highways near or within the vicinity of the Project site. The closest officially designated scenic highway to the Project site is State Route (SR) 29 and SR-121, located approximately 14 miles west of the site (Caltrans 2022). The General Plan EIR identified that there are no state scenic highways within the Planning Area and implementation of the General Plan would have no impact on visual resources within any nearby scenic highway corridors, concluding that impacts would be less than significant (City of Suisun City 2015a). The Project site is located within the Planning area and, therefore, would not be visible from SR-121 or SR-29. Implementation of the Project would not substantially damage scenic resources within a state scenic highway, and there would be no impacts. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?**

The Project site is located in an urbanized area; therefore, this analysis discusses whether the Project would conflict with applicable zoning or regulations governing scenic quality. The City designates specific building design standards based on the zoning of the parcels to ensure that development of the site would not result in a conflict with surrounding uses or result in development of projects that do not conform to scale and character of the existing surrounding uses. The City's General Plan includes design policies and standards to ensure preservation and enhancement of scenic views, which the Project would be required to comply with, such as Policy CCD-6.3, which requires new developments to be designed to frame views with direct lines of sight along public rights-of-way (ROW) (City of Suisun City 2015a). The Project would not conflict with applicable zoning or regulations governing scenic quality; and as such, impacts would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

The Project would increase sources of light and glare at the site; however, the Project site is currently surrounded by existing commercial and residential uses, and therefore, the Project (within this context) is not anticipated to significantly increase light and glare in the area. Existing light and glare sources at the site include lighting from existing neighboring commercial and residential uses, street lighting, lights from passing cars, and glare from reflective surfaces such as windows on existing buildings and nearby cars. New sources of light would be installed as part of the new building to illuminate entries, sidewalks,



## Tractor Supply Company Project Modified Initial Study

parking areas, and provide for safety and security throughout the site. Implementation of the Project would be required to comply with the General Plan and Title 24 lighting regulations and policies designed to avoid light spillage. The Project would also be required to comply with General Plan Objective CCD-8, which requires all new developments to install attractive lighting that does not create additional safety or aesthetic problems. The General Plan EIR determined that compliance with Title 24 requirements would control unnecessary brightness of lighting and glare, and impacts would be less than significant. As such, the Project would not substantially increase light and glare at the site above existing sources and would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area. Therefore, impacts would be less than significant, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.



## 3.2 Agriculture and Forestry Resources

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>II. AGRICULTURAL AND FOREST RESOURCES</b> — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:			
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production as defined by Government Code Section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use, or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### 3.2.1 ENVIRONMENTAL SETTING

Within the Planning Area, 2,288-acres are designated as Urban and Built-up Land; 2,700-acres designated as Grazing Land, and 218-acres as Other Land under the California Department of Conservation (DOC) Farmland, Mapping, and Monitoring Program (FMMP) (DOC 2022). The entirety of the Project site is designated as Urban and Built-Up Land. The Project site is located in an urbanized area of the City and does not include an active Williamson Act contract or parcels that are zoned for forestry use or other agricultural uses. The Project site is undeveloped with surrounding residential and retail uses, with surface parking lots to serve the retail uses.

As identified in the General Plan EIR, there are no lands within the Planning Area, or directly adjacent to the Planning Area, that are designated as Important Farmland (Prime Farmland, Farmland of Statewide Importance, or Unique Farmland), and as such, no Important Farmland would be directly or indirectly converted to non-agricultural uses.





### 3.2.2 DISCUSSION

- a) **Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?**
- b) **Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?**

The Project site is currently vacant and zoned as Commercial Mixed Use District. There are no Prime Farmlands, Farmlands of Statewide Importance, or Unique Farmlands within the Planning Area, and the entire Project site and surrounding areas are designated as Urban and Built-Up Land (not considered Important Farmland). Additionally, the site is not under a Williamson Act contract and is not designated or zoned as agricultural land. The General Plan EIR determined, as a result of the lack of designated Important Farmland within and adjacent to the Planning Area, implementation would not directly or indirectly convert important Farmland to non-agricultural uses. Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use or conflict with existing zoning for agricultural use, and as such, there would be no new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

- c) **Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**
- d) **Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

The Project site does not contain any forestry or timberland resources and is not zoned for forestry uses or for timberland production. Therefore, the Project would not conflict with zoning for forest land or timberland and would not result in the conversion of forest land to non-forest uses. The General Plan EIR identified that there would be no impacts to agricultural and forestry resources, and the Project would result in no impacts. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

- e) **Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?**

The Project site is located in an urbanized area and is surrounded by existing commercial and residential uses. There are no parcels located within the vicinity of the Project site that have been designated for agricultural and forestry uses, and no agricultural or forestry uses exist within the vicinity of the site. Therefore, the Project would not involve other changes in the existing environment that due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. The Project would result in no impact and therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.



### 3.3 Air Quality

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>III. AIR QUALITY</b> — Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:			
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.3.1 ENVIRONMENTAL SETTING

##### 3.3.1.1 Air Quality Background

Air quality is primarily a function of both local climate, local sources of air pollution and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

A region's topographic features have a direct correlation with air pollution flow and, therefore, are used to determine the boundary of air basins. Suisun City is located within the San Francisco Bay Area Air Basin (Basin), a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Neither State nor national ambient air quality standards of the following chemicals have been violated in recent decades: nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride. Those exceedances of air quality standards that do occur primarily happen during meteorological conditions conducive to high pollution levels, such as cold, windless nights or hot, sunny summer afternoons.

Both State and federal governments have established health-based ambient air quality standards for six criteria air pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and suspended particulate matter (particulate matter less than 10 microns [PM<sub>10</sub>] and



particulate matter less than 2.5 microns [ $PM_{2.5}$ ]). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants,  $O_3$  and  $NO_2$ , are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO,  $SO_2$ , and Pb are considered local pollutants that tend to accumulate in the air locally. The BAAQMD is under State nonattainment status for ozone and particulate matter standards. The BAAQMD is classified as nonattainment for the federal ozone 8-hour standard and nonattainment for the federal  $PM_{2.5}$  24-hour standard. As such, the primary pollutants of concern in the project area are  $O_3$ , CO, and  $PM_{2.5}$ .

Because of the conservative nature of the significance thresholds, and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides ( $NO_x$ ) and reactive organic gases (ROG).

Further, by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to by itself result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, the air districts have considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise. These populations are referred to as sensitive receptors.

### 3.3.2 REGULATORY SETTING

#### 3.3.2.1 Federal

##### Federal Clean Air Act

The 1970 Federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The CAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required for areas of the nation that exceed



the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

### 3.3.2.2 State

#### California Clean Air Act

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for CO, O<sub>3</sub>, SO<sub>2</sub>, and NO<sub>2</sub> by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a five percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

The California Air Resources Board (CARB) is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

### 3.3.2.3 Regional

The BAAQMD seeks to attain and maintain air quality conditions in the Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

#### Clean Air Plan

The Clean Air Plan guides the region's air quality planning efforts to attain the CAAQS. The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO<sub>x</sub>), particulate matter and greenhouse gas (GHG) emissions. The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve GHG reduction targets; and



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- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other “Super-GHGs” that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

### BAAQMD CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The BAAQMD CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the proposed Project.

#### **3.3.2.4 Local**

##### City of Suisun City 2035 General Plan

The General Plan Public Health and Safety Element of the General Plan includes goals, objectives, policies, and programs that work to reduce emissions that produce harmful air pollutants. The following objectives, policies, and programs are applicable to the Project:

Objective PHS-3: Reduce emissions that produce harmful air pollutants.

Policy PHS-3.2: The City will communicate with the BAAQMD to identify sources of toxic air contaminants and determine the need for health risk assessments prior to approval of new developments.

Policy PHS-3.3: The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.

Policy PHS-3.4: The City will require implementation of applicable emission control measures recommended by the BAAQMD for construction, grading, excavation, and demolition.

Program PHS-3.1: Health Risk Analyses. When development involving sensitive receptors, such as residential development, is proposed in areas within 134 feet of SR 12 or when uses are proposed that may produce hazardous air contaminants, the City will require screening level analysis, and if necessary, more detailed health risk analysis to analyze and mitigate potential impacts. For projects proposing sensitive uses within 134 feet of SR 12, the City will require either ventilation that demonstrates the ability to remove more than 80 percent of ambient PM<sub>2.5</sub> prepared by a licensed design professional or site-specific analysis to determine whether health risks would exceed the applicable BAAQMD-recommended



threshold and alternative mitigation demonstrated to achieve the BAAQMD threshold. Site-specific analysis may include dispersion modeling, a health risk assessment, or screening analysis. For proposed sources of toxic air contaminants, the City will consult with the BAAQMD on analytical methods, mitigation strategies, and significance criteria to use within the context of California Environmental Quality Act documents, with the objective of avoiding or mitigating significant impacts.

Program PHS-3.2: Construction Mitigation. The City will require new developments to incorporate applicable construction mitigation measures maintained by the BAAQMD to reduce potentially significant impacts. Basic Control Measures are designed to minimize fugitive PM dust and exhaust emissions from construction activities. Additional Control Measures may be required when impacts would be significant after application of Basic Control Measures.

Program PHS-3.3: Construction Mitigation for Health Risk. Construction equipment over 50 brake horsepower (bhp) used in locations within 300 feet of an existing sensitive receptor shall meet Tier 4 engine emission standards. Alternatively, a project applicant may prepare a site-specific estimate of diesel PM emissions associated with total construction activities and evaluate for health risk impact on existing sensitive receptors in order to demonstrate that applicable BAAQMD-recommended thresholds for toxic air contaminants would not be exceeded or that applicable thresholds would not be exceeded with the application of alternative mitigation techniques approved by BAAQMD.

### 3.3.3 METHODOLOGY

The evaluation of air quality impacts is based, in part, on a Project-specific technical study, “Air Quality and Greenhouse Gas Emissions Analysis Memorandum for the Tractor Supply Company Project, Suisun City, California,” by LSA Associates Inc., March 2022, included as Appendix A of this document.

#### 3.3.3.1 Construction Emissions

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site.

Construction of the proposed Project would last for a duration of approximately nine months. This analysis also assumes use of Tier 2 construction equipment. This analysis utilizes CalEEMod default assumptions.

#### 3.3.3.2 Operational Emissions

This air quality analysis includes estimating emissions associated with long-term operation of the Project. Indirect emissions of criteria pollutants with regional impacts would be emitted by Project-generated vehicle trips. In addition, localized air quality impacts (i.e., higher carbon monoxide concentrations or “hot-



spots”) near intersections or roadway segments in the Project vicinity would also potentially occur due to project-generated vehicle trips.

Consistent with BAAQMD’s guidance for estimating emissions, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the Project. The analysis was conducted using land use codes Hardware/Paint Store and Parking lot. As discussed in the Project Description, the proposed Project is expected to generate approximately 180 daily trips, which was included in this analysis. Where Project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate Project emissions.

### 3.3.4 DISCUSSION

#### a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

The applicable air quality plan is the BAAQMD 2017 Clean Air Plan (Clean Air Plan), which defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project: (1) supports the goals of the Clean Air Plan; (2) includes applicable control measures from the Clean Air Plan; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

##### Criterion 1 – Clean Air Plan Goals

The primary goals of the Bay Area Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate.

The BAAQMD has established significance thresholds for Project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region’s attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed below, construction and operation of the proposed Project would not result in the generation of criteria air pollutants that would exceed BAAQMD thresholds of significance. Therefore, the proposed Project would not conflict with the Clean Air Plan goals.

##### Criterion 2 - Clean Air Plan Control Measures

The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutants Measures. The proposed Project’s compliance with each of these control measures is discussed below.

- **Stationary Source Control Measures.** The Stationary Source Control Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and



then enforced by the BAAQMD Permit and Inspection programs. Since the proposed Project would not include any of these stationary sources, the Stationary Source Control Measures of the Clean Air Plan are not applicable to the proposed Project.

- **Transportation Control Measures.** The BAAQMD identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, toxic air contaminants (TACs), and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service decarbonizing transportation fuels, and electrifying motor vehicles and equipment. Based on the proposed Project's trip generation, the proposed Project is not expected to generate a substantial number of daily trips or vehicle miles traveled. As such, the proposed Project would not hinder the BAAQMD's initiatives to reduce vehicle trips and vehicle miles traveled and would increase the use of alternate means of transportation. Therefore, the proposed Project would not conflict with the identified Transportation and Mobile Source Control Measures of the Clean Air Plan.
- **Energy Control Measures.** The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the Clean Air Plan are not applicable to the proposed Project.
- **Building Control Measures.** The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The proposed Project would be required to comply with the latest Title 24 standards of the California Code of Regulations, established by the California Energy Commission (CEC), regarding energy conservation and green building standards. Therefore, the proposed Project would not conflict with any of the Building Control Measures.
- **Agriculture Control Measures.** The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the Project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the proposed Project.
- **Natural and Working Lands Control Measures.** The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban-tree plantings. Since the proposed Project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the proposed Project.
- **Waste Management Control Measures.** The Waste Management Control Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to





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reduce, reuse, and recycle. The proposed Project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the proposed Project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

- **Water Control Measures.** The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed Project.
- **Super GHG Control Measures.** The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the proposed Project.

Therefore, the Project would include applicable control measures from the Clean Air Plan.

### Criterion 3 - Clean Air Plan Implementation

As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the Project would not disrupt or hinder implementation of a control measure from the Clean Air Plan.

### Conclusion

The Project would be consistent with the criteria of the Clean Air Plan. The proposed Project would comply with all applicable General Plan policies and would be consistent with the Clean Air Plan, and this impact would be less than significant. Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and further CEQA review is not required.

#### **b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?**

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. The BAAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional



analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential Project-level construction- and operation-related air quality impacts.

### 3.3.4.1 Short-Term Construction Emissions

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by demolition, grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO<sub>x</sub>, ROG, directly emitted particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and TACs such as diesel exhaust particulate matter.

Project construction activities would include site preparation, grading, building, paving, and architectural coating (painting). Construction-related effects on air quality from the proposed Project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM<sub>10</sub> emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM<sub>10</sub> emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM<sub>10</sub>). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust related PM<sub>10</sub> emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO<sub>2</sub>, NO<sub>x</sub>, ROG, and some soot particulate (PM<sub>2.5</sub> and PM<sub>10</sub>) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

As discussed above, CalEEMod was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. As indicated previously, construction of the proposed Project would begin in March 2023 for a duration of approximately nine months. This analysis also assumes use of Tier 2 construction equipment. Construction-related emissions are presented in Table 3-1, below.



**Table 3-1: Project Construction Emissions**

Project Construction	ROG	NOx	PM <sub>10</sub> (exhaust)	PM <sub>10</sub> (fugitive dust)	PM <sub>2.5</sub> (exhaust)	PM <sub>2.5</sub> (fugitive dust)
Average Daily Emissions (lbs/day)	1.9	13.8	0.5	0.5	0.5	0.2
BAAQMD Significance Threshold (lbs/day)	54	54	82	BMP	54	BMP
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022)

BAAQMD = Bay Area Air Quality Management District

lbs/day = pounds per day

BMP = Best Management Practices

NOx = nitrogen oxides

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in aerodynamic diameter

PM<sub>10</sub> = particulate matter between 2.5 and 10 microns in aerodynamic diameter

ROG = reactive organic gases

Source: CalEEMod Output (Appendix A)

As shown in Table 3-1, construction emissions associated with the project would not exceed the BAAQMD's thresholds for ROG, NO<sub>x</sub>, CO, exhaust PM<sub>10</sub>, and exhaust PM<sub>2.5</sub> emissions. In addition to the construction period thresholds of significance, the GP EIR and General Plan Program PHS-3.2 requires the implementation of the BAAQMD's Basic Construction Mitigation Measures to reduce construction fugitive dust impacts to a less-than-significant level. As such, the proposed Project would be required to confirm to BAAQMD Basic Construction Mitigation Measures, thereby ensuring that short-term construction period air quality impacts would be less than significant. BAAQMD's requirements are as follows:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 mph.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.



- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
- Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

Furthermore, conformance with the requirements of BAAQMD Basic Construction Mitigation Measures would ensure that construction of the proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is on nonattainment under an applicable federal or state AAQS. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### 3.3.4.2 Long-Term Operational Emissions

Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed Project.

PM<sub>10</sub> emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM<sub>10</sub> occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand for the proposed Project could include building mechanical systems, such as heating and air conditioning and lighting. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources. Area source emissions associated with the project would include emissions from the use of landscaping equipment.

Emission estimates for operation of the Project were calculated using CalEEMod. The primary emissions associated with the Project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the Project, emissions are released in other areas of the Air Basin. The daily and annual emissions associated with Project operational trip generation, energy, and area sources are identified in Table 3-2, below, for ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. CalEEMod output sheets are included in Appendix A.



**Table 3-2: Project Operational Emissions**

	ROG	NOx	PM <sub>10</sub>	PM <sub>2.5</sub>
	<b>Pounds per Day</b>			
Area Source Emissions	0.6	<0.1	<0.1	<0.1
Energy Source Emissions	<0.1	<0.1	<0.1	<0.1
Mobile Source Emissions	0.4	0.3	0.6	0.2
<b>Total Emissions</b>	<b>1.1</b>	<b>0.4</b>	<b>0.6</b>	<b>0.2</b>
<b>BAAQMD Thresholds</b>	<b>54</b>	<b>54</b>	<b>82</b>	<b>54</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
	<b>Tons Per Year</b>			
Area Source Emissions	0.1	<0.1	0	0
Energy Source Emissions	<0.1	<0.1	<0.1	<0.1
Mobile Source Emissions	0.1	0.1	0.1	<0.1
<b>Total Emissions</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>&lt;0.1</b>
<b>BAAQMD Thresholds</b>	<b>10</b>	<b>10</b>	<b>15</b>	<b>10</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022)

BAAQMD = Bay Area Air Quality Management District

lbs/day = pounds per day

BMP = Best Management Practices

NOx = nitrogen oxides

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in aerodynamic diameterPM<sub>10</sub> = particulate matter between 2.5 and 10 microns in aerodynamic diameter

ROG = reactive organic gases

The results shown in Table 3-2 indicate the Project would not exceed the significance criteria for daily or annual ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions; therefore, operation of the proposed Project would have a less-than-significant impact in relation to regional operational emissions. Similarly, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, as it would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard. No further CEQA review is warranted based on these findings.

**c) Would the project expose sensitive receptors to substantial pollutant concentrations?**

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.



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According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, an increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient PM<sub>2.5</sub> increase greater than 0.3 micrograms per cubic meter (µg/m<sup>3</sup>). A significant cumulative impact would occur if the Project, in combination with other projects located within a 1,000-foot radius of the Project site, would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient PM<sub>2.5</sub> increase greater than 0.8 µg/m<sup>3</sup> on an annual average basis. Impacts from substantial pollutant concentrations are discussed below.

The proposed Project site is located in an urban area in close proximity to existing residential uses that could be exposed to diesel emission exhaust during the construction period. The nearest sensitive receptors are identified as the single-family homes located directly east, adjacent to the Project boundary. As such, to estimate the potential cancer risk from Project construction equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location (i.e., a nearby residential land use). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using CARB's exposure methodology, with the air dispersion modeling performed using the EPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data. Table 3-3 identifies the results of the analysis, assuming the use of Tier 2 construction equipment.

**Table 3-3: Unmitigated Inhalation Health Risks from Project Construction to Off-Site Receptors**

<b>Project Construction</b>	<b>Carcinogenic Inhalation Health Risk in One Million</b>	<b>Chronic Inhalation Hazard Index</b>	<b>Annual PM<sub>2.5</sub> Concentration (µg/m<sup>3</sup>)</b>
Maximally Exposed Individual	46.2	0.054	0.25
<b>BAAQMD Significance Threshold</b>	<b>10</b>	<b>1.0</b>	<b>0.3</b>
<b>Exceeds Individual Source Threshold?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022).

µg/m<sup>3</sup> = micrograms per cubic meter

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

As shown in Table 3-3, the risk associated with Project construction at the maximally exposed individual (MEI) would be 46.2 in one million, which would exceed the BAAQMD cancer risk of 10 in one million. The total chronic hazard index would be 0.054, which would be below the threshold of 1.0. The results of the analysis indicate that the total PM<sub>2.5</sub> concentration would be 0.27 µg/m<sup>3</sup>, which would also be below the BAAQMD significance threshold of 0.30 µg/m<sup>3</sup>. Therefore, conformance with and implementation of General Plan Policy PHS 3-3 would be required to reduce substantial pollutant concentrations during Project construction to less than significant levels.



As shown in Table 3-4, the results of the analysis with implementation of General Plan Program PHS 3-3 are provided below.

**Table 3-4: Mitigated Inhalation Health Risks from Project Construction to Off-Site Receptors**

Project Construction	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Annual PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )
Maximally Exposed Individual	5.2	0.007	0.03
<b>BAAQMD Significance Threshold</b>	<b>10</b>	<b>1.0</b>	<b>0.3</b>
<b>Exceeds Individual Source Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022).

µg/m<sup>3</sup> = micrograms per cubic meter

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

As shown in Table 3-4, the mitigated cancer risk at the MEI would be 5.2 in one million, which would not exceed the BAAQMD cancer risk of 10 in one million. In addition, the total PM<sub>2.5</sub> concentration would be 0.03 µg/m<sup>3</sup>, which would also not exceed the BAAQMD significance threshold of 0.30 µg/m<sup>3</sup>. Therefore, with implementation of General Plan Program PHS 3-3, construction of the proposed Project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations. Once the Project is constructed, the Project would not be a source of substantial emissions. The majority of trips to the site would be from employees and customers in passenger vehicles which are typically not diesel powered, and, as a result, DPM emissions would be minor. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during Project operation.

With incorporation of required BAAQMD Basic Construction Mitigation Measures and existing General Plan Policy PHS 3-3, the Project's construction and operation impacts would, therefore, be less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further CEQA review is warranted based on these findings.

**d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?**

Odor impacts from future development could result from either locating new sources of odor near existing receptors, or, although not a CEQA impact, locating new receptors near existing odor sources. The General Plan EIR determined that compliance with required BAAQMD Basic Construction Mitigation Measures and all other applicable rules and regulations will ensure that minor sources of odors would not result in exposure of sensitive receptors, on- or off-site, and this impact was determined to be less than significant.

During Project construction, the various diesel-powered vehicles and equipment in use on site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended



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periods of time beyond the Project site. Additionally, the proposed uses that would be developed within the Project site are not expected to produce any offensive odors that would result in frequent odor complaints, and Project construction and operation would not include any uses that have been identified by BAAQMD as potential sources of objectionable odors. Furthermore, the proposed Project would not include sensitive receptors. As such, potential Project-related odor impacts would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further CEQA review is warranted based on these findings.





### 3.4 Biological Resources

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>IV. BIOLOGICAL RESOURCES</b> — Would the project:			
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.4.1 ENVIRONMENTAL SETTING

According to the General Plan, a majority of the land within the City limits is urbanized; however, there are some undeveloped annual grasslands and wetland habitat areas. Most of the City provides low habitat values to most wildlife and generally do not support special-status plant species. Areas with some limited habitat potential include portions of Laurel Creek and McCoy Creek, which pass through the City to Suisun Marsh, the largest contiguous estuarine marsh on the west coast. Suisun Slough provides access to the marina from Suisun Marsh. There are also natural habitat areas with vernal pool grasslands in the southern and southeastern portions of the Planning Area, including the Jepson Prairie-Suisun Marsh Corridor which traverses the vernal pool grasslands in the southeast of the City. Portions of the Planning Area have the potential to support 27 special-status plant species, four of which are federally endangered, and one is federally threatened. Three species are state listed as endangered. Other portions of the Planning Area have the potential to support 19 special-status wildlife species, three of which are federally listed threatened species and four are federally endangered. Four species are state listed as threatened, three are state listed as endangered, and nine are state species of special concern. (City of Suisun City 2015a).



The Project site is situated at an elevation of approximately 9 feet above mean sea level . The property is bordered on the south by Highway 12, open agricultural fields, and two gasoline service stations, on the east and north by residential properties, and on the west by commercial retail stores and restaurants. The Project site consists of disturbed ruderal, non-native grasses and forbs. According to the United States Fish and Wildlife Service (USFWS) there are no critical habitats within or near the Project area under the jurisdiction of the Sacramento, California office.

### 3.4.2 REGULATORY SETTING

#### 3.4.2.1 Federal

##### Endangered Species Act

The Endangered Species Act (ESA) protects plants and animals that are listed as endangered or threatened by USFWS and the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits, without authorization, the taking of listed wildlife, where take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in any other area in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals and funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, USFWS and NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of ESA provides for the issuance of Incidental Take Permits (ITPs) where no other federal actions are necessary provided a habitat conservation plan is developed.

Critical Habitat is defined in Section 3 of ESA as:

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

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features essential to the conservation of the species (16 USC 1533). Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

1. Space for individual and population growth and for normal behavior;



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2. Food, water, air, light, minerals, or other nutritional or physiological requirements
3. Sites for breeding, reproduction, or rearing (or development) of offspring; and
4. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

### Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of nongame birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

### Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredged or fill material into “Waters of the U.S.” without a permit from the U.S. Army Corps of Engineers (USACE). The Environmental Protection Agency (USEPA) and the USACE will assert jurisdiction over Waters of the U.S. according to the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (Rapanos). In summary, Waters of the U.S. under Rapanos include traditional navigable waters (TNW), wetlands adjacent to TNW, non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries. Pursuant to Rapanos, the United States Environmental Protection Agency (USEPA) and USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water over the following: nonnavigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary (USEPA and USACE 2008). Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). USEPA also has authority over wetlands, including the authority to veto permits issued by USACE under CWA Section 404.

Projects involving activities that have no more than minimal individual and cumulative adverse environmental effects may meet the conditions of one of the Nationwide Permits already issued by USACE (Federal Register 82:1860, January 6, 2017). If impacts on wetlands could be substantial, an individual permit is required. A Water Quality Certification or waiver pursuant to Section 401 of the CWA



is required for Section 404 permit actions. This certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

### 3.4.2.2 State

#### California Endangered Species Act (ESA)

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California ESA allows for take incidental to otherwise lawful projects under permits issued by California Department of Fish and Wildlife (CDFW).

#### Fully Protected Species

The State of California first began to designate species as “fully protected” prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing ITPs for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved NCCP within which such species are covered.

#### Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900- 1913) was established with the intent to “preserve, protect and enhance rare and endangered plants in this state.” The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as “endangered” or “rare”. The NPPA prohibits the take of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.



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### California Fish and Game Code Special Protection of Birds

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds.

Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.

Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.

Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests. Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.

Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

### Lake or Streambed Alteration Agreements

Pursuant to Business and Professional Code 26060.1(b)(3), every license for cultivation issued by the Department of Cannabis Control must comply with §1602 of the Fish and Game Code or receive written verification that CDFW that a Lake or Streambed Alteration Agreement (LSAA) is not required. Additionally, Section 1600-1616 of the California Fish and Game Code requires individuals or agencies to provide a LSAA Notification to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the LSAA. The subject property does not border a riparian corridor or any stream, lake or intermittent tributaries.

### Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve discharging waste, or proposing to discharge waste, with any region that could affect the water of the state” (Water Code 13260(a)). Waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials



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into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

### California Environmental Quality Act Species Criteria

In accordance with California Environmental Quality Act (CEQA) Guidelines § 15380 (Guidelines), a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria include definitions similar to definitions used in ESA, the California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under ESA, the California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as species of special concern (SSC) by CDFW, and plants identified by the California Native Plant Society (CNPS) as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

#### Species of Special Concern (SSC)

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA, or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role;
- The species is listed as federally (but not State) threatened or endangered, or meets the State definition of threatened or endangered but has not formally been listed;
- The species has or is experiencing serious (nonscyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status; and
- SSC are typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

#### USFWS Birds of Conservation Concern

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA.” To meet this requirement, USFWS published a list of birds of conservation concern (BCC) (USFWS 2008) for the U.S. The list identifies the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS’s highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.



### Sensitive Natural Communities

The CDFW maintains the California Natural Community List (CDFW 2021), which provides a list of vegetation alliances, associations, and special stands as defined in the Manual of California Vegetation (Sawyer et al. 2009), along with their respective State and global rarity ranks. Natural communities with a State rarity rank of 1, 2, or 3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

### California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2022), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six California Rare Plant Ranks (CRPRs). The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

- Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.
- Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.
- Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.
- Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.
- Rare Plant Rank 3 – a review list of plants about which more information is needed.
- Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

- Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat).
- Threat Rank 0.2 – Moderately threatened in California (20-80 percent of occurrences threatened/moderate degree and immediacy of threat).
- Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; differences in Threat Ranks do not constitute additional or different protection (CNPS 2021).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.



### CEQA Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, §15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

#### 3.4.2.3 Local

##### Solano Multispecies Habitat Conservation Plan

The General Plan indicates that a habitat conservation plan (HCP) for portions of Solano County was being prepared by Solano County Water Agency and 11 other participants, including the City. The Solano Multispecies Habitat Conservation Plan (SMHCP) is an area-wide approach to conservation planning with a higher likelihood of conserving special-status species over the long term. The SMHCP provides economic incentives for willing private landowners to conserve and act as stewards of valuable resources, enabling local governments to play a leadership role in natural resource conservation and permitting within a framework established in partnership with regulatory agencies. The SMHCP is intended to accommodate economic and community development; retain the economic vitality of the local agricultural community; maintain recreation, hunting, fishing, and other public uses of the local open space; simplify and expedite land use and conservation planning in the county; protect threatened and endangered species; and preserve plant and wildlife communities in Solano County (General Plan 2015a).

##### City of Suisun City 2035 General Plan

The General Plan Open Space and Conservation Element goals, policies, and programs related to wildlife and habitat protection and implementation of the SMHCP, which are applicable to the proposed Project, include the following:





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Goal OSC-1: Protect wildlife habitat and movement corridors through the preservation of open space.

Objective OSC-1: Increase the number of new developments that preserve and integrate drainages and other wildlife movement into site plans.

Policy OSC-1.1: The City will require biological resources investigations for proposed developments that could adversely affect potential wildlife movement corridors to determine the value and importance of such corridors to daily and/or seasonal movement and dispersal of local wildlife and identify measures to minimize and avoid adverse effects on wildlife movement. Wildlife movement corridors include marshlands, waterways, and other types of corridors that provide for movement and dispersal.

Policy OSC-1.3: New developments shall be designed to protect and preserve natural watercourses and drainage channels to the maximum extent feasible.

Policy OSC-1.4: New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat.

Policy OSC-1.5: New developments shall avoid placing any temporary or permanent barriers within wildlife movement corridors, if they are determined to exist on-site.

Policy OSC-1.8: Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the greatest practical extent.

Program OSC-1.1: Preservation through Site Planning and Design. The City will maintain data on biological resources and natural habitats. The City will require a review of biological resource information for new developments that could adversely affect potentially significant biological resources. The types and significance of biological resources present will be reviewed as part of the development entitlement process. As part of this review, the City will determine whether preservation of resources is feasible within the context of the project site planning and design process. The City will work proactively with applicants to identify opportunities to preserve important biological resources through planning and design approaches. Where feasible, the City will require preservation of biological resources within site planning and design as a condition of project approval.

Program OSC-1.3: Biological Resources Review for New Developments. The City will require a biological review and analysis for new developments that could adversely affect potential special-status species habitat. If, after examining all feasible means to avoid impacts to potential special-status species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species, including surveys conducted according to applicable standards and protocols, where necessary, implementation of impact minimization measures based on accepted standards and guidelines and best available science, and compensatory mitigation for unavoidable loss of sensitive and special-status species habitats through preservation and enhancement of existing populations, creation of new populations through seed collection or transplantation, and/or restoring or creating suitable replacement habitat in sufficient quantities to offset the loss of sensitive or occupied habitat and individuals.



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Participation in the SMHCP will be the preferred mitigation method. Purchase of mitigation credits at an agency-approved mitigation bank (i.e., approved by the agency with jurisdiction over the affected species or habitat) in Solano County, will also be acceptable for compensatory mitigation. If participating in the SMHCP, performance standards identified in the SMHCP for the affected species and habitat will apply. If not participating in the SMHCP, the performance standards will be based on established guidelines and the best available science and result in no net loss of special-status species or sensitive habitat in the County.

If the project would result in take of state or federally listed species, then the City will require project proponent/s to obtain take authorization from the U.S. Fish & Wildlife Service (USFWS) or the CDFW, as appropriate, depending on species status, and comply with all conditions of the take authorization. The City will require project applicants to develop a mitigation and monitoring plan to compensate for the loss of special-status species and sensitive habitats. The mitigation and monitoring plan will describe in detail how loss of special-status species or sensitive habitats shall be avoided or offset, including details on restoration and creation of habitat, compensation for the temporal loss of habitat, success criteria ensuring habitat function goals and objectives are met and that target special-status plant species are established, performance standards to ensure success, and remedial actions if performance standards are not met. The plan will include detailed information on the habitats present within the preservation and mitigation areas, the long-term management and monitoring of these habitats, legal protection for the preservation and mitigation areas (e.g., conservation easement, declaration of restrictions), and funding mechanism information (e.g., endowment).

Goal OSC-2: Ensure consistency with Solano Multispecies Habitat Conservation Plan.

Objective OSC-2: New development in the Planning Area supports the conservation objectives of the SMHCP Policy OSC-2.1 The City will coordinate environmental review and mitigation requirements with the SMHCP.

Policy OSC-2.2: The City will support the use of mitigation fees from the SMHCP to fund preservation and restoration elements of the City's conservation and open space strategy.

Policy OSC-2.3: The City will require that new developments comply with relevant conservation measures detailed within the Conservation Strategy chapter of the SMHCP, as applicable.

Program OSC-2.1: Conservation Planning. The City, in collaboration with other participating agencies, will participate in development, adoption, and implementation of the SMHCP. Mitigation and conservation measures from the SMHCP will be incorporated into the City's monitoring and implementation of the General Plan, as appropriate.

### 3.4.2.4 Methodology

The evaluation of impacts to biological resources is based, in part, on a Project-specific technical study, "Biological Resource Assessment for the Tractor Supply Suisun City Project, City of Suisun, Solano County," by Bole & Associates, April 2022, included as Appendix B of this document.

For the purposes of this Biological Resources Assessment, special-status species are defined as plants or animals that:



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- are listed or are proposed for listing as threatened or endangered under the ESA;
- are candidates for future listing as threatened or endangered under the California ESA;
- are identified as an SSC by the CDFW;
- are considered by the CNPS with a CRPR of 1A, 1B, 2A, 2B, 3, or 4;
- are fully protected in California in accordance with the California Fish and Game Code, 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes)

### Literature Review

Prior to field studies, special-status biological resources present or potentially present within or near the Project site were identified through queries of the various state and federal databases based on the U.S. Geological Survey (USGS) 7.5-minute quadrangle where the property is located (Fairfield South) and eight surrounding quadrangles (Fairfield North, Elmira, Denverton, Honker Bay, Vine Hill, Benicia, Cordelia, and Mt. George). (See Enclosure B). Biologists independently reviewed databases and reports that address biological resources within and near the project area, including the CNDDB (CDFG 2022), the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS 2001 updated 2021), and the United States Fish & Wildlife Service (USFWS) online electronic database of endangered species (USFWS 2022). Relevant technical information from these databases are incorporated and referenced as appropriate.

### Field Assessment for Other Special-Status Species

Surveys were conducted by Bole & Associates' Senior Biologist Marcus H. Bole, M.S., and Senior Biologist (Ornithologist) Charlene J. Bole, M.S., on February 12, March 9, and March 31, 2022. During these field assessments, the Project site was walked on foot (3-meter transects and fixed observation posts), and topographic maps and aerial imagery were referenced. Biological communities occurring within the site were characterized, and the following biological resource information was collected:

- protected trees occurring on or near the property;
- animal and plant species directly observed;
- habitat and vegetation communities; and
- representative photographs of the property.

### Evaluation of Special-Status Species

Based on the species accounts, species occurrence information from the literature review, and field assessments, a list of special-status plant and animal species considered to have the potential to occur within the Project site was generated. Each of the species that were considered as potentially occurring within the Project site or its vicinity were evaluated based on the following criteria:

- Present – Species was observed during field surveys or is known to occur within the property based on documented occurrences within the CNDDB, other literature, and site assessments.
- Potential to Occur – Habitat (including soil and elevation requirements) for the species occurs within the property based on site assessment and literature research.



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- Low Potential to Occur – Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the property based on CNDDDB records other available documentation, and site assessments.
- Absent – No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the property based on CNDDDB records, other documentation, and site assessments.

### Preliminary Aquatic Resources Assessment

The Project site does not have aquatic resources on or near the vicinity of the property. As such, an aquatic assessment was not performed.

### 3.4.3 DISCUSSION

- a) **Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

#### 3.4.3.1 Disturbed, Ruderal, Non-Native Grasses and Forbs

The General Plan EIR identified that habitat modification could result in the loss of habitat known to occur in the Planning Area (City of Suisun City 2015a). The entire Project site, including the northern portion of the property which is not being developed as part of the proposed Project, consists of a disturbed ruderal vegetative community. Common vegetative species found in this community were composed of weedy non-native species. Common species identified in the field included: wild oat (*Avena fatua*), black mustard (*Brassica nigra*), ripgut (*Bromus rigidus*), soft cheat grass (*Bromus hordeaceus*), soft cheat (*Bromus mollis*), field bindweed (*Convolvulus arvensis*), redstem filaree (*Erodium cicutarium*), California poppy (*Eschscholzia californica*), fennel (*Foeniculum vulgare*), California mustard (*Guillenia lasiophylla*), cow parsnip (*Heracleum lanatum*), foxtail barley (*Hordeum leporinum*), prickly lettuce (*Lactuca serriola*), common mallow (*Malva neglecta*), cheeseweed (*Malva parviflora*), bur clover (*Medicago polymorpha*), bristly ox-tongue (*Picris echinoides*), wild radish (*Rhaphanus sativus*), spiny sowthistle (*Sonchis asper*), perennial sowthistle (*Sonchus arvensis*), yellow star thistle (*Centaurea solstitialis*), hedge bindweed (*Calystegia sepium*), lupines (*Lupinus spp.*), and winter vetch (*Vicia villosa*). There is one medium diameter willow tree (*Salix spp.*) along the northern boundary of the property. The tree does not contain avian nests. There are no small mammal burrows within the site, and there was no evidence of Burrowing owl nesting habitat.

#### 3.4.3.2 Special-Status Plant Survey

The General Plan identified that special-status plant species may occur within the Planning Area within the Jepson Prairie core area identified in the City's vernal creek recovery plan, as vernal pool recovery plan core areas are considered vital to the recovery of the listed species found there (i.e., Contra Costa goldfields), and USFWS has high preservation goals for these areas (City of Suisun City 2015a).



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Special-status plant surveys were conducted throughout the months of February and March 2022, to coincide with the flowering period of sensitive plant species potentially occurring within the Project area. A review of the various special-status species databases and literature indicated that 30 special-status plant species had the potential to occur in the Project site and an approximately 300-foot buffer area around the site. Surveys were floristic in nature (where possible) and were conducted in accordance with CDFW's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018).

Rare plant surveys were performed using demographic survey techniques derived from the CNPS rare plant monitoring guidelines. These guidelines include floristically based surveys, identifying to species level all plant encountered, or identifying to the level necessary to detect rare plants if present. During field surveys, meandering transects were walked throughout the property, proposed and existing access roads, and buffer areas to ensure that all habitats present were surveyed. All plants were identified to the level necessary to ensure that any special-status species would be detected. Scientific and common nomenclature followed The Jepson Manual (Hickman 1996).

Botanical surveys conducted during 2022 were conducted within the blooming period of all plant species of concern. However, upon further analysis and after the 2022 onsite evaluations, all were considered to be absent from the property due to the lack of suitable habitat.

### Special-Status Wildlife Species

The General Plan identified that wildlife abundance and diversity in the urban landscape habitat within and surrounding the Planning Area is dependent on the amount of vegetation and degree of ongoing disturbance. The General Plan EIR identified that special-status species may occur within the Jepson Prairie area or Suisun Marsh, none of which occur or are adjacent to the Project site.

Wildlife use of the property is expected to be low due to the sparse, ruderal nature for the vegetation and the developed surroundings. Bird species observed during the February/March 2022 onsite evaluations included the mourning dove (*Zenaidura macroura*), western gull (*Larus occidentalis*), California towhee (*Melospiza crissalis*), black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), California scrub jay (*Aphelocoma californica*), western bluebird (*Sialia mexicana*), house finch (*Haemorhous mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*), yellow-rumped warbler (*Setophaga coronata*), house sparrow, *Passer domesticus*, American crow, *Corvus brachyrhynchos*, Western meadowlark, *Sturnella neglecta*, turkey vulture, *Cathartes aura*, and Northern mocking bird, *Mimus polyglottos*, among others. Urbanadapted wildlife typically found in this setting could include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and jackrabbit, *Lepus californicus*.

### Invertebrates

Eight special status invertebrate species were evaluated as being absent from the site due to unsuitable habitat. One unlisted species of bumble bee has been observed within a close proximity to the property; however, there is a marginal amount of food plant genera (foraging habitat consisting of *Ceanothus*, *Centaurea*, *Chrysothamnus*, *Cirsium*, *Geranium*, *Grindellia*, *Lupinus*, *Melilotus*, *Monardella*, *Rubus*, *Solidago*, and *Trifolium* (Williams et al. 2014), within the property to support this species.



### Reptiles and Amphibians

Two special-status reptiles and two special status amphibian species were evaluated as being absent from the site due to unsuitable habitat. The property does not support vernal pool habitats.

### Protected birds and Raptors

Twenty-three special-status birds and raptors were evaluated as having no nesting or breeding habitat within or near the property. However, avian species could use the ruderal grasslands for foraging. No burrows or burrow surrogates were found within the property or within the 300-foot buffer around the property. The property and surrounding areas do not have debris piles, culverts or pipes suitable for nesting. No California ground squirrels or other small rodents were observed during intensive onsite surveys. Numerous bird species were observed overflying the property, and occasionally attempting to forage within the ruderal grassland habitat. Most, if not all, foraging attempts were unsuccessful due to the lack of available prey base.

Although special-status species and their habitat have been documented in the general vicinity of the Project site, no special-status animal or plant species were observed during the biological survey and assessment of the site and buffer area. As such, it is highly unlikely that the Project would have impacts on listed or sensitive species or habitats. More information about sensitive plant species can be found in Appendix B. The Project may temporarily disturb common wildlife species; however, this impact is considered less than significant, because common wildlife species associated with the vegetative communities present within the subject property and buffer area are locally and regionally common. Compliance with the General Plan, including Program OSC-1.1, Program OSC-1.3, Policy OSC-2.1, and Policy OSC-2.3, and implementation of the standard minimization and avoidance measures prior to and during Project construction, would ensure potential impacts to common wildlife species would be avoided. Therefore, the Project would not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species and the Project would have a less than significant impact. The Project would not result in new or more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

- b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**
- c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

The General Plan EIR identified that development in areas that contain waterways, both natural and manmade, could be impacted in areas that support such riparian habitats or connectivity to navigable waters or Waters of the US, such as Suisun Slough; however, the Project site does not contain such riparian areas or the possibility of connectivity to navigable waters.



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### Soils

According to the *Web Soil Survey* (Natural Resources Conservation Service [NRCS] 2021), one soil type dominates the property (*Natural Resources Conservation Service Soil Types*): Antioch- San Ysidro complex, 0 to 2 percent slopes. The Antioch-San Ysidro soil series consists of nearly level, moderately well-drained soils in alluvium derived from sedimentary rock. The vegetation is ruderal, non-native grasses and forbs. The mean average annual temperature is 57° to 61° F., the average rainfall is 16 to 18 inches, and the frost-free season is 250 to 270 days. Permeability is rapid. These soils are not classified as “hydric”. Due to past grading and disking of onsite soils, as well as possible disposal of offsite soils during the construction of the surrounding commercial and industrial business, the onsite soils contain a significant amount of “cut-and-fill” material. The disturbed soils do not exhibit small mammal burrows (California ground squirrel, mice, voles, etc.).

### Wetlands and Other Water Coordination Summary

Surveys were conducted at the Project site during March 2022, in order to conduct a determination of Waters of the US within the area. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual* (1987); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008); the U.S. Army Corps of Engineers *Jurisdictional Determination Form Instructional Guidebook* (2007); the U.S. Army Corps of Engineers *Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region* (2011); and the U.S. Army Corps of Engineers *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (2008).

The intent of this determination is to identify wetlands and “Other Waters of the United States” that are present within the action area that could fall under the regulatory jurisdiction of the USACE pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Routine On-Site Determination methodology for this study was employed (as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, dated September 2008). The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

**Vegetation.** Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent), and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter. No wetland habitats were identified on or near the action area. Vegetation throughout the



action area predominately consists of upland plants including slender wild oats, *Avena barbata*, ripgut brome, *Bromus diandrus*, yellow star thistle, *Centaurea solstitialis*, barnyard grass, *Echinochloa crus-galli*, Bermuda grass, *Cynodon dactylon*, and cut-leaved geranium, *Geranium dissectum*. Due to seasonal precipitation, a scattered number of season wetland grasses were observed within the Project site including, *Eleocharis macrostachya* and *Rumex crispus*. There is only one tree within the property, a medium diameter willow (*Salix*, spp.).

**Hydric Soils.** Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Redoximorphic features (commonly referred to as mottles) are areas in the soils that have brighter (higher chroma) or grayer (lower chroma) colors than the soil matrix. Redoximorphic features are the result of the oxidation and reduction process that occurs under anaerobic conditions. Iron and manganese concretions form during the oxidation-reduction process, when iron and manganese in suspension are sometimes segregated as oxides into concretions or soft masses. These accumulations are usually black or dark brown. Concretions 2 mm in diameter occurring within 7.5 cm of the surface are evidence that the soil is saturated for long periods near the surface.

Soil pits were excavated throughout the action area within the following soil series: Antioch-San Ysidro complex, 0 to 2 percent slopes. Antioch-San Ysidro loam soils are the dominate series throughout the property. Antioch-San Ysidro soils are not listed as a “hydric” soil of Solano County. Soil pits were excavated throughout this area and all the pits were characterized by moderately well drained soils. The Antioch-San Ysidro loam series consists of moderately well drained soils on low fan terraces. These soils are moderately deep to a hardpan. They formed in alluvium derived from sedimentary rock sources. Soils were evaluated using the Musell chroma tables. Generally, the soils were universally determined to be light brownish-gray (10YR 6/3) sandy loam that has few, fine, distinct mottles of brownish-yellow (10YR 6/6). No hydric soil indicators were observed within these soil pits.

**Hydrology.** Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for 5 percent of the growing season (approximately 12 days) (USDA, 1967). Indicators include visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogammic lichens, and algal mats. There are no natural hydrological features within the action area. However, where winter precipitation settled in a few shallow areas, alga-mat and scattered wetland seasonal grasses were observed. These areas are not vernal pools and represent only isolated, non-jurisdictional features.

**Wetland Determination Results.** Using the methodologies described in the *1987 Wetland Delineation Manual*, no evidence of state or federal jurisdictional wetland habitats within or near the Project site was found. There are no seasonal or perennial ponds, streams, creeks or tributaries within or near the site.

Therefore, as the Project does not involve modifications to potential wetland or regulated waters, the Project would not have a substantial adverse effect on any riparian habitat, other sensitive natural





community, or state or federally protected wetlands, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

The General Plan EIR identified that the Jepson Creek-Suisun Marsh corridor provides an important regional habitat link between those areas, facilitating local daily and seasonal movement and maintaining generic connectivity for species threatened with isolation (City of Suisun City 2015a). The Project site is not located in this area. The Project site is surrounded on all sides by commercial and residential properties and major roadways. As such, wildlife use is expected to be relatively low. Furthermore, the Project site does not fall within an Essential Habitat Connectivity Area mapped by CDFW. Therefore, the Project would not interfere with the movement of wildlife or impede the use of native wildlife nursery sites, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

There is one willow tree in the Project area, and it is not being removed as part of the proposed Project. There are no sensitive natural communities within or near the property. Due to the built-up nature of the surrounding properties and the disturbed, graded soil conditions, there is little evidence that the site would support sensitive natural communities. Therefore, the Project would not conflict with any local policies or ordinances protecting biological resources, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

Construction and operation of the proposed Project would be conducted in compliance with all applicable regulations and requirements, including those listed in the General Plan and the SMHCP. Therefore, the Project would not conflict with the provisions of an adopted plan, and impacts would be less than significant. The Project would not result in new or more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



### 3.5 Cultural Resources

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>V. CULTURAL RESOURCES</b> — Would the project:			
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.5.1 ENVIRONMENTAL SETTING

The City is situated at the nexus between the Sacramento Valley and the San Francisco Bay Area. Geologically, the Bay Area region has undergone intensive alteration over the past 12,000 years. It was during the Pleistocene that the Pacific shoreline extended approximately 15 miles further west than its present location with subsequent, catastrophic melting of continent-spanning glaciers responsible for the present sea levels and shoreline proximity. The Project site is located within lands that prior to 1970, were exclusively farmed and ranched, and over the following decades have been converted from rural to an urban environment.

Prior to European explorers settling the area, the indigenous people known as the Patwin lived in the region for thousands of years. The Patwin occupied the southwest Sacramento Valley from the town of Princeton, north of Colusa, south to San Pablo and Suisun bays, and from the lower hills of the eastern North Coast Range to the Sacramento River (Appendix C).

Early Spanish expeditions arrived from Bay Area missions as early as 1804, and by the mid-1820s, hundreds of fur trappers were annually traversing the valley on behalf of the Hudson's Bay Company. By the late 1830s and early 1840s, several small permanent European-American settlements had emerged in the Central Valley and adjacent foothill lands. By the mid-1850s, several buildings had been erected and Suisun City began thriving during the latter part of the 19<sup>th</sup> century. The California Pacific Railroad began passenger service from Vallejo to the City in 1868 and three years later the Central Pacific Railroad purchased the California Pacific providing the City with shipping access to distant markets via the transcontinental railroad. As of 1880, the City had a population of 600 people.

Between 1880 and 1920, fruit cultivation flourished in the area due in part of the development of large scale fruit drying and canning and refrigerated railcars and by the early 20<sup>th</sup> century, commercial activity in nearby Fairfield began to eclipse Suisun City. Although the City retained its status as a shipping and banking center for several decades, the Great Depression brought hard times locally and a rapidly declining national fruit market resulted in closure of several nearby canneries and drying facilities. The development of what became Travis Air Force Base between Fairfield, Vacaville, and Suisun City brought an abundance of new jobs to the area. Trucking activity was boosted in northern California and Solano



County by bridge construction in the Bay Area during the 1930s, and by the expansion of U.S. Highway 40 through Fairfield into a modern, multi-lane freeway during the 1960s (present-day Interstate 80) (City of Suisun City 2014).

### 3.5.2 METHODOLOGY

To determine the presence or absence of cultural resources within the project site and vicinity, Genesis Society: Archaeological, Historical, Cultural Resources Management Services prepared a Cultural Resources Inventory Survey, on March 18, 2022. The report included a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS), literature review, and a pedestrian field survey of the Project site. The cultural resources inventory was conducted to satisfy the requirements of CEQA and follows CEQA Appendix G Guidelines. As the CEQA Lead Agency, the City completed Assembly Bill (AB) 52 consultations. The results of the consultations are described below and in Section 3.18, Tribal Cultural Resources, of this document. The Cultural Resources Inventory Survey is provided as Appendix C.

#### 3.5.2.1 Records Search and Literature Review

A records search (NWIC File No. 21-1261) was completed at the NWIC of the CHRIS on February 15, 2021. As an affiliate of the State of California Office of Historic Preservation, the NWIC is the official state repository of cultural resource records and reports for the region that includes Solano County. The search included the entire project site, as well as a 0.25-mile buffer around the project site. According to the records search, 24 total studies were found to have been conducted within the project site and the 0.25-mile search radius. One previous study investigated the whole project site, 13 have been documented within portions of project site, and ten additional studies have been conducted within the 0.25-mile search radius. According to these studies, no cultural resources have been documented within the Project site and one resource has been documented within the 0.25-mile search radius.

The California Native American Heritage Commission (NAHC) was contacted on February 5, 2022, to request a search of the Sacred Lands File for the preparation of the Cultural Resources Inventory Survey. An information request letter was delivered to the NAHC on February 5, 2022, and the NAHC responded on March 17, 2022, indicating that a search of their Sacred Lands File was negative and there was no indication of the presence of Native American cultural resources at the Project site.

#### 3.5.2.2 Field Survey

An intensive pedestrian survey of the entire Project site was completed on March 3, 2022, by walking parallel transects spaced at 20-meter intervals. In searching for cultural resources, the surveyor considered the results of background research and observed for any unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants and other possible markers of cultural sites.

Fieldwork identified the following general conditions within the project area. All of the project site has been impacted by past livestock pasture, and subsequent continuous and ongoing disking and ripping. Additionally, contemporary residential and commercial development surround the project site while Highway 12 runs adjacent to the Project site boundary. All of these various activities have contributed to



substantial disturbance of both the surface and subsurface soils within the project site and consequently, reduced the probability of discovering intact subsurface cultural materials which may have once been present within the project site. Examination of historic aerial maps confirmed that no buildings or structures have ever been documented within the project site.

More information about the survey can be found in Appendix C.

### 3.5.3 DISCUSSION

#### **a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?**

A project may have a significant impact or adverse effect on significant historical resources if the project will or could result in the physical demolition, destruction, relocation, or alteration of the resources or its immediate surroundings such that the significance or values of the historic resources would be materially impaired. The Project site does not include any existing structures that would require demolition and the Cultural Resources Inventory Survey identified that no historic era sites exist within the project site and were observed within the project site during the pedestrian survey. Therefore, implementation of the Project would not cause a substantial adverse change in the significance of a historical resource and there would be no impacts. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

#### **b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?**

The Cultural Resources Inventory Survey identified that no evidence of prehistoric activity or occupation was observed during the pedestrian survey. Additionally, the General Plan EIR identified that there are no known archaeological resources or sites within the City listed or eligible for listing on the NRHP or CRHR (City of Suisun City 2014). Therefore, there are no known archaeological resources within the project site. Though the probability of encountering buried archaeological resources within the project site is low, the Project would require excavation and additional ground disturbing activities on the site, so there is some potential for construction to disturb unknown and unrecorded archaeological resources. In the event of an inadvertent discovery of previously unidentified cultural resources, the Project would be required to implement General Plan Program OSC-5.1 and archaeological consultation shall be sought immediately. Implementation of existing General Plan policies and programs would ensure the Project would not cause a substantial adverse change in the significance of an archaeological resources and impacts would be less than significant. The General Plan EIR identified a significant and unavoidable impact to archaeological resources and therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

#### **c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?**



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The Project site has been previously disturbed and the potential for the Project to disturb undiscovered human remains during construction activities is low. However, the City is located in an area that was previously occupied by Native American tribes. As the Project would require excavation and ground disturbing activities, there is some potential for the Project to disturb undiscovered human remains. If human remains are discovered during construction activities, the Project would be required to implement General Plan Program OSC-5.1 which requires compliance with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 7050.5 which specify procedures to be followed in the event of unexpected discovery of human remains. Compliance with existing federal, state, and local regulations would ensure that the Project would not disturb any human remains and impacts would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



### 3.6 Energy

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>VI. ENERGY</b> — Would the project:			
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.6.1 ENVIRONMENTAL SETTING

Energy use is typically quantified using the British Thermal Unit (BTU). The BTU is the amount of energy that is required to raise the temperature of one pound of water by one-degree Fahrenheit. As points of reference, the approximate amount of energy contained in a gallon of gasoline, a cubic foot of natural gas, and a kilowatt hour (kWh) of electricity are 123,000 BTUs, 1,000 BTUs, and 3,400 BTUs, respectively. Natural gas usage is expressed in therms, and a therm is equal to 100,000 BTU.

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service within the City. PG&E provides natural gas and electric service to approximately 16 million customers across a 70,000 square-mile service area (PG&E 2022). PG&E's operations are regulated by the California Public Utilities Commission (CPUC). Electricity and natural gas supplies, including those supplied within the City by PG&E, are also regulated by the California Energy Commission (CEC).

Transportation accounts for the majority of California's total energy consumption (CEC 2022). There are approximately 30 million registered vehicles in California. Petroleum currently accounts for approximately 97 percent of California's transportation energy consumption by light-duty cars, pick-up trucks, and sport utility vehicles (CEC 2022). However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total.

##### 3.6.1.1 Electricity

PG&E produces or buys its energy from several conventional and renewable generating sources, which travel through PG&E's electric transmission and distribution systems. The power mix PG&E provided to customers in 2021 consisted of non-emitting nuclear generation (39 percent), large hydroelectric facilities (4 percent) and eligible renewable resources (50 percent), such as wind, geothermal, biomass, solar and small hydro. The remaining portion came from natural gas/other (7 percent) (PG&E 2022).

##### 3.6.1.2 Natural Gas

Nearly 45 percent of the natural gas burned in California was used for electricity generation, much of the remainder was consumed by the residential sector (21 percent), industrial (25 percent), and commercial (9 percent). California imports approximately 90 percent of its natural gas supply (CEC 2022).



PG&E provides natural gas services across central and northern California, including Solano County. PG&E provides approximately 970 billion cubic feet of natural gas per year (PG&E 2022).

### 3.6.2 REGULATORY SETTING

#### 3.6.1.3 Federal

##### Energy Policy Act of 2005

The Energy Policy Act of 2005 addresses energy production in the United States, including energy efficiency, renewable energy, oil and gas, coal, tribal energy, nuclear, vehicles and motor fuels, hydrogen, electricity, energy tax incentives, hydropower and geothermal energy, and climate change technology. The Energy Policy Act includes loan guarantees to encourage innovative technologies that reduce GHG emissions and increases the amount of biofuel required to be mixed in with gasoline.

#### 3.6.1.4 State

##### Senate Bill 1078: Renewable energy: California Renewables Portfolio Standard Program

In 2002, California Governor Gray Davis signed SB 1078 requiring a percentage of all retail electricity sales to be from a renewable source. This program was accelerated in 2006 increasing the mandate to require 20 percent of all retail electricity sales to come from renewable sources by 2010. In April 2011, with the adoption of SB 2, the Renewables Portfolio Standard (RPS) mandates that 33 percent of electricity delivered in California be generated by renewable sources such as solar, wind, and geothermal by 2020. Most recently in October 2015, Governor Jerry Brown signed SB 350, which would require both retail sellers and publicly owned utilities to procure 50 percent of electricity used from eligible renewable energy sources by 2030.

##### Assembly Bill 32

AB 32, California Global Warming Solutions Act of 2006, requires that California's GHG emissions be reduced to 1990 levels by 2020. The reduction was to be accomplished through an enforceable statewide cap on global warming emissions which was phased in beginning in 2012. AB 32 directs the CARB to develop regulations and a mandatory reporting system to track and monitor global warming emissions levels (AB 32, Chapter 488, Statutes of 2006). The California Climate Action Team Report to the Governor (2006) included a range of strategies to reduce GHG emissions. One of these strategies is the Accelerated Renewables Portfolio Standard Program, which requires investor-owned public utilities to transition to renewable energy sources. The report shows this program to be one of the most promising strategies for reducing GHG emissions, with reductions projected to be five million metric tons (CO<sub>2</sub> equivalent) by 2010 and 11 million metric tons by 2020.

##### Senate Bill 350

SB 350 sets ambitious annual targets for energy efficiency and renewable electricity aimed at reducing GHG emissions. SB 350 directs the CEC to establish annual targets that will achieve a statewide cumulative doubling of energy efficiency savings and demand reductions in electricity and natural gas



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final end uses by January 1, 2030. This mandate is one of the primary measures to help California achieve its long-term climate goal of reducing GHG emissions to 40 percent below 1990 levels by 2030.

### Senate Bill 743

SB 743 was signed in 2013, requiring a move away from vehicle delay and level of service in CEQA transportation analysis. It requires VMT per capita, VMT per employee, and net VMT as new metrics for transportation analysis. SB 743 allows the implementation of multimodal transportation plans, adds certainty to the development process by reducing development cost and encouraging economic growth, and more appropriately balances the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduces GHG emissions.

### California Code of Regulations Title 24 Part 11 (CALGreen)

The California Green Building Standards Code, which is Part 11 of the California Code of Regulations, is commonly referred to as the CALGreen Code. The 2008 edition, the first edition of the CALGreen Code, contained only voluntary standards. The 2010 CALGreen Code is a code with mandatory requirements for state-regulated buildings and structures throughout California, which began on January 1, 2011. The CALGreen Code requires building commissioning, which is a process for the verification that all building systems, such as heating and cooling equipment and lighting systems, are functioning at their maximum efficiency.

### 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings Title 24, Part 6, and associated administrative regulations in Part 1

The 2022 Building Energy Efficiency Standards contain energy and water efficiency requirements for newly constructed buildings, additions to existing buildings, and alternations to existing buildings. The standards include both a prescriptive option, using known efficient methods, and a performance option, which allows building designers to use their own methods if they achieve equivalent building energy efficiency as the prescriptive option. The 2022 update goes into effect January 1, 2023, and builds on the state's technology innovation, encouraging energy efficient approaches to encourage building decarbonization, emphasizing in particular, on heat pumps for space heating and water heating. The 2022 update also extends the benefits of photovoltaic and battery storage systems while also strengthening ventilation standards to improve indoor air quality.

#### **3.6.1.5 Local**

##### City of Suisun City 2035 General Plan

The City of Suisun City 2035 General Plan contains the following goals and policies applicable to the Project:

Objective OSC-8 Exceed statewide energy efficiency gains in Suisun City between present and 2035.

Policy-OSC-8.1 The City will implement relevant policies from the Land Use and Transportation Elements that encourage connected transportation networks, provide for alternate modes of transportation, and





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encourage mixed-use and compact development patterns to reduce transportation energy use in Suisun City.

Policy OSC-8.2 The City will require that new developments are designed for maximum energy efficiency, taking into consideration such factors as building-site orientation and construction, articulated windows, roof overhangs, appropriate building and insulation materials and techniques, and other architectural features that improve passive interior climate control.

Policy OSC-8.3 The City will encourage landscaping methods, materials, and designs that promote energy conservation.

Policy OSC-8.4 The City will preserve existing trees and plant new trees along streetscapes to provide shade.

Policy OSC-8.5 The City will require that new buildings meet state standards for energy efficiency and provide for renewable energy development and use, to the greatest extent feasible.

Policy OSC-8.6 The City will encourage the retrofitting of existing buildings with energy efficient systems, energy-efficient appliances, insulation, energy-efficient doors and windows, and other elements that conserve resources.

Policy OSC-8.7 The City will seek regional, state, and federal funding for energy efficiency improvements in existing buildings and the public realm.

Policy OSC-8.8 The City will encourage the installation and use of active solar systems to reduce electricity use from the grid.

Policy OSC-8.9 The City will conduct energy efficiency audits of all City-owned buildings to identify efficiency improvements.

Policy OSC-8.10 The City will consider the installation of renewable energy systems on City buildings and properties and transition the City's fleet to hybrid vehicles.

Policy OSC-8.11 The City will explore the viability of LED streetlights to reduce energy consumption and provide more reliable and constant illumination.

Policy OSC-8.12 The City will provide City staff training and public outreach on methods to reduce energy consumption and available incentives for energy efficiency measures.

The energy requirements for the Project were determined using the construction and operational estimates generated from the Air Quality and Greenhouse Gas Analysis (Appendix A) and in energy calculations provided in Appendix D.

### 3.6.3 DISCUSSION

- a) **Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**



### 3.6.1.6 Construction Energy Use

#### Electricity

Temporary electric power for as-needed lighting and electronic equipment would be provided by PG&E. The amount of electricity used during Project construction would be minimal because typical demand would stem from electrically powered hand tools. The electricity used for construction activities would be temporary and minimal; therefore, Project construction would not result in wasteful, inefficient, or unnecessary consumption of electricity. Additionally, the Project would comply with General Plan policies and the latest Title 24 standards. The Project's impacts with respect to electricity use would be less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

#### Natural Gas

Natural gas is not anticipated to be required during construction of the proposed Project. Any minor amounts of natural gas that may be consumed during Project construction would be temporary and negligible and would not have an adverse effect; therefore, Project construction would not result in wasteful, inefficient, or unnecessary consumption of natural gas. Additionally, the Project would comply with General Plan policies and the latest Title 24 standards. The Project's impacts with respect to natural gas use would be less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

#### Petroleum

Petroleum products would be consumed throughout construction. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction. Transportation of construction materials and construction workers would also result in consumption of petroleum products. Heavy-duty construction equipment, vendor trucks, haul trucks, and construction worker vehicles would use diesel fuel and gasoline. Specifically, Project construction would require approximately 6,990 gallons of diesel for off-road equipment and 5,602 gallons of gasoline or diesel for on-road vehicles. The Project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Overall, the use of petroleum products during construction of the Project would be short-term (approximately nine months), would not be wasteful or inefficient, and would comply with applicable General Plan policies and state and local regulations and requirements. As such, construction impacts with respect to petroleum products would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further analysis is warranted.

### 3.6.1.7 Operational Energy Use

#### Electricity

At full build-out, Project operation would require electricity for retail operations and parking. CalEEMod default values for a hardware store were applied. The Project's electricity use was calculated in CalEEMod using energy intensity value (electricity use per square foot per year) assumptions. The



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Project is estimated to demand approximately 292,924 kilowatt-hours (KWhr) of electricity per year. This would represent an increase in demand for electricity from current conditions.

It would be expected that building energy consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region. Current state regulatory requirements for new building construction contained in the 2022 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the Project compared to what was expected under the General Plan. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update.

Therefore, while the Project would result in increased electricity demand, the electricity would be consumed more efficiently and would be typical of a commercial development. Compliance with General Plan policies and goals would further increase energy efficiency. As such, impacts with respect to electricity use would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further analysis is warranted.

### Natural Gas

Project Operation would require the consumption of natural gas, primarily related to the need for hot water. The Project is estimated to demand approximately 57,009 thousand British thermal units per year (kBTU/year) of natural gas, which would represent an increase in demand for natural gas at the site as compared to existing conditions. It would be expected that natural gas consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than for any other similar buildings in the region.

Current state regulatory requirements for new building construction contained in the 2022 CALGreen and Title 24 standards would increase energy efficiency and reduce energy demand in comparison to existing commercial structures, and therefore would reduce actual environmental effects associated with energy use from the Project compared to what was expected under the General Plan. Additionally, the CALGreen and Title 24 standards have increased efficiency standards through each update.

Therefore, while the Project would result in increased natural gas demand, the gas would be consumed more efficiently and would be typical of a commercial development. The Project would constitute development within an established urban area and would not be opening up a new geographical area for development such that it would draw mostly new trips or substantially lengthen existing trips. The Project would be well positioned to accommodate the existing community and population. Compliance with General Plan policies and goals would further increase energy efficiency. As such, impacts with respect to natural gas use would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further analysis is warranted.



### Petroleum

The annual vehicular fuel consumption is estimated at 11,199 gallons of diesel and gasoline combined. The Project would constitute development within an established urban area and would not be opening up a new geographical area for development such that it would draw mostly new trips or substantially lengthen existing trips. The Project would be well positioned to accommodate the existing community and population. For these reasons, it would be expected that vehicular fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than for any other similar land use activities in the region. As such, impacts with respect to petroleum use would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further analysis is warranted.

#### **b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

The Project would not conflict with the energy goals or policies of the General Plan or other policies and plans aimed at reducing GHG emissions. The Project would constitute development within an established community and would not be opening up a new geographical area for development such that it would draw mostly new trips, or substantially lengthen existing trips. The Project would comply with the versions of CCR Titles 20 and 24, including CALGreen, that are applicable at the time that building permits are issued and with all applicable City measures.

As such, impacts related to the Project's potential to conflict with plans for renewable energy and energy efficiency have been adequately addressed and would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and no further CEQA analysis is warranted.



### 3.7 Geology and Soils

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>VII. GEOLOGY AND SOILS</b> — Would the project:			
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.7.1 ENVIRONMENTAL SETTING

The evaluation of impacts related to geology and soils is based, in part, on a Project-specific technical study, "Geotechnical Report, Tractor Supply Co., Suisun City, California" by Gularte & Associates, Inc., March 2022, included as Appendix E of this document.

The City is located within the southern portion of the Sacramento Valley, which combined with the San Joaquin Valley, comprises the Great Valley geomorphic province. The Great Valley is a forearc basin comprised of thousands of feet of sedimentary deposits that have undergone periods of subsidence and uplift over millions of years. The City is located in an area of Northern California known to be seismically active. The Vaca-Kirby Hills Fault traverses through the Planning Area, trenching north-south in the eastern portion of the Planning Area (City of Suisun City 2015a). Additionally, as identified in the Geotechnical (Geotech) Report (Appendix E), the Cordelia Fault Zone traverses approximately 8.9 miles to the west, southwest of the Project site. The Project site is not located within a currently established Alquist-Priolo Earthquake Fault Zone.



The General Plan EIR identified that soils in the central portion of the City are classified as Antioch-San Ysidro complex on nearly level to gently sloping land. These soils are characterized as being moderately well drained and are present on terraces.

The Geotech report identified surface conditions of the Project site are composed of older Quaternary alluvial lake, playa, and terrace deposits. Subsurface conditions observed during exploratory boring identified very dense sand and very stiff silt of the Tehama Formation which underlays the relatively thin surficial Quaternary alluvium (Appendix E). The risk of lateral spreading from landslides and liquefaction is considered low, as liquefiable soil conditions were not observed during the Geotech Report and investigation. Additionally, risk of landslides is not considered likely considering the flat topography of the Project site.

### 3.7.2 DISCUSSION

- a) **Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**
- i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist- Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.**

The Geotech report determined that there are no known earthquake faults that pass through or along the Project site, and the site is not located within an Alquist Priolo Earthquake Fault Zone. Therefore, the potential for fault rupture at the site is negligible, and there would be no impacts. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

ii) **Strong seismic ground shaking?**

The City is located within a seismically active region, and earthquakes have the potential to cause ground shaking at the site. Numerous microearthquakes as large as magnitude as 3.7 have been recorded associated with the active Kirby Hills Fault, which passes through the eastern portion of the Planning Area. However, any fault (particularly those with evidence of activity during the Holocene epoch) may result in surface rupture and ground shaking (City of Suisun City 2014). The proposed Tractor Supply Company retail center and associated improvements would be designed in accordance with the latest Title 24 standards which include earthquake resistance standards. The General Plan EIR identified that potential risks from seismic hazards would be adequately mitigated by existing laws, regulations, and policies, including the California Building Code (CBC) and the City's development review procedure which requires a site-specific geotechnical investigation be prepared, which would be reviewed by City staff prior to the issuance of building permits to ensure compliance. The site-specific geotechnical investigation was prepared by Gularte & Associates, Inc. in March of 2022, and the Project would be required to implement recommendations included in the Geotech report. Therefore, the Project would result in a less than significant impact related to strong seismic ground shaking, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.



### **iii) Seismic-related ground failure, including liquefaction?**

The Geotech Report identified that the Project site has a low potential for liquefaction or lateral spreading as a result of the underlain soils and subsurface conditions (Appendix E). The General Plan EIR also identified that seismic hazard zone maps and liquefaction potential maps indicate that the site is located in an area of low liquefaction potential. As discussed in the above impact analysis, the General Plan EIR identified that potential risks from seismic hazards would be adequately mitigated by existing laws, regulations, and policies, including the CBC and the City's development review procedures, which require a site-specific geotechnical investigation be prepared to be reviewed by City staff prior to the issuance of building permits to ensure compliance. The site-specific geotechnical investigation has been prepared by Gularte & Associates, Inc. in March of 2022, and the Project would be required to implement recommendations included in the Geotech report. The Geotech report determined that the Project site would be suitable for the proposed building, provided that the design recommendations presented in the Geotech report are implemented during design and construction of the Project. Therefore, the Project would result in a less than significant impact related to seismic-related ground failure, including liquefaction, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### **iv) Landslides?**

The General Plan EIR identified the Planning Area and its surroundings as relatively flat ranging from 0-4% slope, and as such, landslides are not considered a significant hazard (City of Suisun City 2014). The Project site and surrounding areas are relatively flat and not located in an area that would be subject to landslides (Appendix E). Therefore, there would be no impacts related to seismic induced landslides. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### **b) Would the project result in substantial soil erosion or the loss of topsoil?**

Construction activities associated with the Project would require excavation and earthmoving activities that could leave site soils to be exposed to wind and water erosion. The General Plan EIR identified that eroded soils could be washed into onsite or offsite drainage facilities and result in sedimentation. The Project would be required to comply with the City's stormwater requirements through the Fairfield-Suisun Urban Runoff Management Program (FSURMP). All development projects within the City must comply with the National Pollutant Discharge Elimination System (NPDES) permit issued to the FSURMP by the San Francisco Bay Regional Water Quality Control Board (RWQCB) which include Best Management Practices (BMPs) that need to be followed during construction activities. Additionally, the FSURMP requires that all projects implement a Stormwater Pollution Prevention Plan (SWPPP) to prevent soil erosion and discharge of other construction-related pollutants (City of Suisun City 2014). Therefore, the Project would result in a less than significant impact related to substantial soil erosion or the loss of topsoil, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



- c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?**
- d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**

The General Plan EIR identified that soils within the Planning Area have been rated with high to moderate limitations for construction of buildings and roads because of low soil strength, subsidence potential, and ponding and soil saturation. Based on the General Plan EIR and review of National Resource Conservation Survey (NRCS) soil survey data, most of the soil types in the Planning Area have a high shrink-swell potential, indicating that soils are expansive (City of Suisun City 2014, USDA 2012). Soils in the Planning Area have a low permeability rate and a high water-holding capacity and thus percolation tends to occur slowly. The Geotech Investigation identified that, based on the results of laboratory testing and the subsurface exploration, the surface and near-surface soils at the Project site consist of thin alluvial sediments in the upper 1 to 3 feet below ground surface that are underlain with predominantly medium dense clayey sand and low plasticity sandy clay. The Geotech Investigation concluded that the soils present onsite would be considered suitable for support of the anticipated loads of the Project in accordance with geotechnical engineering recommendations, existing laws, regulations, and policies, including the CBC and the City's development review procedures. Therefore, the Project would not be located on a geologic unit or soil that is unstable or could become unstable as a result of the Project or be located on expansive soils, creating risks to life or property, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

- e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

The Project would connect to the City's wastewater system and would not require the use of septic tanks or alternative wastewater disposal systems. Therefore, there would be no impact, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

- f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

The General Plan EIR identified that the Planning Area is underlain by Holocene- and Pleistocene-age alluvium, and by the Tehama Formation. Due to its age, it is unlikely that Holocene-age alluvium would contain "unique" paleontological resources. The Pleistocene alluvium is composed of freshwater stream deposits along canyons and at the end of older alluvial fans, and freshwater marsh deposits. Vertebrate fossils found in the Pleistocene alluvium are representative of the Rancholabrean land mammal age from which many taxa are now extinct and include, but are not limited to bison, mammoth, ground sloths, saber-toothed cats, dire wolves, cave bears, rodents, birds, reptiles, and amphibians (City of Suisun City 2014). Several vertebrate fossils have been recovered in the Tehama Formation throughout Northern California and as close as 3.5 miles south of the Planning Area. There are no known fossil localities in the Planning Area and intensive ground-disturbing activities throughout the City have reduced the likelihood





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of encountering paleontological resources. Ground disturbing activities during project construction could potentially destroy previously undiscovered paleontological resources. The General Plan EIR identified that impacts to paleontological resources would be reduced through the compliance with General Plan *Program Open Space and Conservation (OSC)-5.1: Paleontological Resource Training and Recovery*, which would require consultation and training with a qualified paleontologist, in addition to preparation of a resource recovery plan in the event paleontological resources are discovered during earthmoving activities. The Project would comply with Program OSC-5.1 and would implement General Plan goals, policies, and programs during development. Therefore, the Project would not directly or indirectly destroy unique paleontological resources on site or unique geologic features, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



### 3.8 Greenhouse Gas Emissions

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>VIII. GREENHOUSE GAS EMISSIONS</b> — Would the Project:			
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.8.1 ENVIRONMENTAL SETTING

The evaluation of greenhouse gas (GHG) emissions impacts is based, in part, on a Project-specific technical study, “Air Quality and Greenhouse Gas Emissions Analysis Memorandum for the Tractor Supply Company Project, Suisun City, California,” by LSA Associates Inc., March 2022, included as Appendix A of this document.

GHGs are present in the atmosphere naturally, and are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous oxide (N<sub>2</sub>O);
- Hydrofluorocarbons (HFCs);
- Nitrogen trifluoride (NF<sub>3</sub>);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF<sub>6</sub>).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally occurring GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, some gases, like HFCs, PFCs, and SF<sub>6</sub> are completely new to the atmosphere. Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.



These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO<sub>2</sub>, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO<sub>2</sub> over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO<sub>2</sub> equivalents” (CO<sub>2</sub>e).

### 3.8.2 REGULATORY SETTING

#### 3.8.1.1 Federal

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO<sub>2</sub> emissions under the CAA.

While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the 2009 EPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the EPA Administrator signed an endangerment finding action in 2009 under the CAA, finding that seven GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, NF<sub>3</sub>, PFCs, and SF<sub>6</sub>) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

#### 3.8.1.2 State

CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California’s air pollution problems. Key efforts by the State are described below.

Assembly Bill 32 (2006), California Global Warming Solutions Act

California’s major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort set a GHG emission reduction target to reduce GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) CO<sub>2</sub>e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State’s projected business-as-usual 2020 emissions of 596 MMT. AB 32 required the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The CARB approved the Scoping Plan on December 11, 2008. It contains the main strategies California will implement to achieve the reduction of approximately 169 MMT carbon dioxide emission (CO<sub>2</sub>e), or approximately 30 percent, from the State’s projected 2020 emission level of 596 MMT CO<sub>2</sub>e under a business-as-usual scenario (this is a reduction of 42 MMT CO<sub>2</sub>e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State’s GHG inventory. The Scoping



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Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reduction of 31.7 MMT CO<sub>2</sub>e);
- The Low-Carbon Fuel Standard (15.0 MMT CO<sub>2</sub>e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO<sub>2</sub>e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO<sub>2</sub>e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO<sub>2</sub>e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identified opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defined CARB climate change priorities until 2020 and set the groundwork to reach long-term goals set forth in Executive Orders (EO) S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill (SB) 32.

### Senate Bill 375 (2008)

Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The CARB may update the targets every four years and must update them every eight years. MPOs, in turn, must demonstrate how their plans, policies and transportation investments meet the targets set by the CARB through Sustainable Community Strategies (SCS). The SCSs are included with the Regional Transportation Plan, a report required by State law. However, if an MPO finds that its SCS will not meet the GHG reduction target, it may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.



## Tractor Supply Company Project Modified Initial Study

### Executive Order B-30-15 (2015)

Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. The CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and, therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

### Senate Bill 350 (2015)

Clean Energy and Pollution Reduction Act. SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increase energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the CPUC for the private utilities and by the CEC for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other nonrenewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

### Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197

In summer 2016, the Legislature passed, and the Governor signed SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change analysis of the emission trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO<sub>2</sub>e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air pollutant emissions data that are collected by the CARB was posted in December 2016.



### Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which raises California's renewable portfolio standard requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the Western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

### Executive Order B-55-18

EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs the CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO<sub>2</sub>e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

### Assembly Bill 1279

On September 16, 2022, Governor Newsom signed AB 1279, the California Climate Crisis Act, which establishes the policy of the State to achieve carbon neutrality as soon as possible, but no later than 2045 and maintain net negative GHG emissions thereafter, and to ensure that by 2045 Statewide anthropogenic GHG emissions are reduced by at least 85 percent below 1990 levels.

### 3.8.1.3 Regional

The BAAQMD is the regional government agency that regulates sources of air pollution within the nine Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

#### BAAQMD Climate Protection Program

The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing GHG emissions and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

#### BAAQMD CEQA Air Quality Guidelines



Under the current CEQA Air Quality Guidelines, a local government may prepare a Qualified Greenhouse Gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy and General Plan that addresses the project's GHG emissions, it can be presumed that the project will not have significant GHG emissions under CEQA. The CEQA Air Quality Guidelines also included a quantitative threshold for project level analyses based on estimated greenhouse emissions as well as per capita metrics.

### 3.8.1.4 Local

#### City of Suisun City 2035 General Plan

The Public Health and Safety Element of the City of Suisun City 2035 General Plan includes goals, objectives, policies, and programs that work to reduce local GHG emissions and reduce the local effects of global climate change. The following objectives and policies are applicable to the project:

Objective PHS-4: Reduce the City's contribution to global climate change effects.

Policy PHS-4.1: The City will coordinate with the Association of Bay Area Governments, Solano County, the BAAQMD, and California Air Resources Board, and other relevant agencies, to orient its plans, policies, and regulations to take best local advantage of regional and statewide AB 32-related infrastructure investment and other programs.

Policy PHS-4.2: The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.

Policy PHS-4.3: The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use-transportation modeling, and other projects to reduce local GHG emissions.

Policy PHS-4.4: The City will collaborate with the Association of Bay Area Governments, Solano County, the BAAQMD, and California Air Resources Board, and other relevant agencies, where feasible, to fund transportation and other infrastructure and service improvements that increase local GHG efficiency.

Policy PHS-4.5: The City will, as feasible, conduct regionally coordinated land use, transportation, and public facility planning to support GHG-efficient local development.

### 3.8.3 METHODOLOGY

GHG emissions associated with the Project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term GHG emissions associated with Project-related vehicle trips. Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that for determining a project's contribution to GHG emissions, lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the project area. The CalEEMod results were used to quantify GHG emissions generated by the Project.



### 3.8.4 DISCUSSION

- a) **Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

#### 3.8.1.5 Construction GHG Emissions

Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the project site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction of the proposed project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Furthermore, CH<sub>4</sub> is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions; however, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that construction of the proposed Project would generate a total of approximately 235.9 MT CO<sub>2</sub>e. Compliance with BAAQMD Basic Construction Mitigation Measures would reduce GHG emissions by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment. As Project construction activities would require compliance with applicable reduction plans, impacts would be in less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

#### 3.8.1.6 Operational GHG Emissions

Long-term GHG emissions are typically generated from mobile sources (e.g., vehicle trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include Project-generated vehicle trips to and from the Project site. Area-source emissions would be associated with activities, such as landscaping and maintenance on the Project site and electricity demand generated by the Project. Waste source emissions generated by the proposed Project include energy generated by land filling and other methods of disposal related to transporting and managing Project generated waste. In addition, water source emissions associated with the proposed Project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment. Emission estimates for operation of the project were calculated using CalEEMod and are shown in Table 3-5.





**Table 3-5: Operational GHG Emissions (Metric Tons per Year)**

Emissions Source	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Percent of Total
Area Source Emissions	<0.1	<0.1	0	<0.1	<1
Energy Source Emissions	30.1	<0.1	<0.1	30.4	12
Mobile Source Emissions	88.3	<0.1	<0.1	89.9	35
Waste Source Emissions	54.8	3.2	0	135.8	52
Water Source Emissions	1.8	0.1	<0.1	3.7	1
<b>Total Annual Emissions</b>				<b>259.9</b>	<b>100</b>
<b>BAAQMD 2023 Threshold</b>				<b>968</b>	<b>-</b>
<b>Exceed Threshold?</b>				<b>No</b>	<b>-</b>

Source: LSA (March 2022)

BAAQMD = Bay Area Air Quality Management District

ROG = reactive organic gases

CH<sub>4</sub> = methane

NO = nitrogen oxides

CO<sub>2</sub> = carbon dioxide

CO<sub>2</sub>e = carbon dioxide equivalent

Source: CalEEMod Output (Appendix A)

As discussed above, a project would have less-than-significant GHG emissions if it would meet one or more of the following criteria: result in operational-related GHG emissions of less than 968 MT CO<sub>2</sub>e/yr or result in operational-related GHG emissions of less than 4.0 MT CO<sub>2</sub>e per service population (residents plus employees). As shown in Table 3-5, the proposed Project would generate approximately 259.9 MT CO<sub>2</sub>e/yr, which would be well below the numeric threshold of 968 MT CO<sub>2</sub>e. Therefore, the proposed Project would not generate GHG emissions that would have a significant effect on the environment. As such, the Project would comply with applicable reduction plans and GHG emissions would be less than significant. Project impacts would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

The City has not adopted a formal Climate Action Plan or GHG reduction plan. Therefore, the Project was also analyzed for consistency with the CARB Scoping Plan measures. The following discussion evaluates the proposed project according to the goals of AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197.

AB 32 was aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 required the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.



## Tractor Supply Company Project Modified Initial Study

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan, to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32 and EO B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed Project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As identified above, the proposed Project would comply with the latest Title 24 standards of the California Code of Regulations, regarding energy conservation and green building standards. Therefore, the proposed Project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the Project would be required to comply with the latest Title 24 standards of the California Code of Regulations, which includes a variety of different measures, including reduction of wastewater and water use. In addition, the proposed Project would be required to comply with the California Model Water Efficient Landscape Ordinance basin design requirements. Therefore, the proposed Project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed Project. In addition, the proposed Project is not expected to generate a substantial number of daily trips. Therefore, the proposed Project would not conflict with the identified transportation and motor vehicle measures.

As the Project would not conflict with applicable plans, impacts would be considered less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



### 3.9 Hazards and Hazardous Materials

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>IX. HAZARDS AND HAZARDOUS MATERIALS</b> — Would the project:			
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use compatibility plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.9.1 ENVIRONMENTAL SETTING

Hazardous waste common throughout urban areas is typically generated by gasoline stations, dry cleaners, automotive mechanics, auto body repair shops, machine shops, printers, photo processors, and agricultural operations. Hazardous materials and hazardous wastes are heavily regulated by federal, state, and local agencies including the California Environmental Protection Agency and the California Department of Toxic Substances Control (DTSC).

The Project site is occupied by vacant land and is unpaved. The Project site is not listed on the State Water Resources Control Board (SWRCB) Geotracker website or the DTSC website as having active site assessment or remediation.

#### 3.9.2 DISCUSSION

- Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?



## Tractor Supply Company Project Modified Initial Study

The Project would not require the demolition of existing structures onsite, therefore there is no risk of releasing asbestos-containing materials or lead-based paint, as is often the case in the demolition of older structures. The Project involves the development of a Tractor Supply Company retail center, along with related surface parking area. The facility operation would be expected to generate small amounts of hazardous waste related to fuels, solvents, and cleaning products, along with fertilizer and pesticides used for landscaping purposes. In addition, products sold onsite may include motorized equipment, such as lawnmowers, tractors, all-terrain vehicles, utility vehicles, and go-carts/minibikes, which may contain small amounts of fuel. Also, products for sale would include fertilizers and pesticides.

As indicated in the General Plan EIR, retail, commercial, and light industrial uses accommodated under the 2035 General Plan could include retail and service commercial operations; research, assembly, fabrication, storage, distribution, and processing uses; and professional offices that may result in increased use, storage, and/or disposal of hazardous materials during routine operations. In addition, the construction of these land uses would temporarily involve the storage, use, and transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint) during construction phases of projects accommodated under the 2035 General Plan. Projects developed under the 2035 General Plan that would use hazardous materials on-site would be required to obtain permits and comply with appropriate regulatory agency standards, including the Hazardous Materials Release Response Plans and Inventories, which are designed to avoid hazardous waste releases and protect the public health.

Therefore, compliance with applicable federal, state, and regional and local health and safety laws and regulations by residents and businesses in the City would protect the health and safety of the public. State and local agencies are required to enforce applicable requirements. The Project would not involve storage of significant amounts of hazardous materials onsite or the use of significant amounts of hazardous materials and would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or create a significant hazard through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, Project impacts would be less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### **c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

The closest schools to the Project site include the Crescent Elementary School, located approximately 0.13 mile to the southeast, Suisun Elementary School, located approximately 0.25 mile to the northeast, Crystal Middle School, located approximately 0.80 mile to the southwest, and Armijo High School, located approximately 1.05 mile to the northwest of the Project site. Although Crescent Elementary School and Suisun Elementary School are located within one-quarter mile of the Project site, the Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste. From the Project site, each of the schools are located across neighborhoods, highways and open space areas. Construction associated with the Project would result in low amounts of hazardous emissions from construction equipment and activities; however, this would be temporary and would not result in significant hazardous emissions being produced.



## Tractor Supply Company Project Modified Initial Study

Ongoing operation of the Project would not result in the use of substantial amounts of hazardous materials onsite. While fertilizers, pesticides, paints, fuels and other routine hazardous materials would be used onsite during operation, most of these materials would also be sold as part of the customary retail operations of Tractor Supply Company retail center. Furthermore, compliance with applicable federal, state, and regional and local health and safety laws and regulations by residents and businesses in the City would protect the health and safety of the public. State and local agencies are required to enforce applicable requirements. Therefore, Project impacts would be less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**d) Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

DTSC and SWRCB do not list the Project site on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 (DTSC 2022, SWRCB 2022). As such, there would be no impact. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**e) For a project located within 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 result in a safety hazard or excessive noise for people residing or working in the project area?**

The Project site is not located within an airport land use plan or within two miles of a public airport or public use airport. The closest airport to the Project site is Travis Air Force base, located approximately 2.7 miles east of the Project site. Therefore, given that the Project is not located within an airport land use plan or within two miles of an existing airport, the Project would not result in a safety hazard for Tractor Supply Company retail center employees or patrons. The Project would not result in a safety hazard or excessive noise for people residing or working in the Project site. The Project would not result in new impacts not analyzed in the General EIR, and the criteria for requiring further CEQA review are not met.

**f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

The General Plan EIR describes that the Solano County Office of Emergency Services (OES) provides for the development, establishment and maintenance of programs and procedures which assist in the protection of lives and property of residents from the effects of natural or human-caused disasters. Those disasters to which the county is subject and for which the office must train and properly respond include floods, earthquakes, major fires, storms, radiological or hazardous material incidents, aircraft accidents, mass casualty incidents, and any other emergency-related function. The Solano County OES has prepared and implements the Solano County Emergency Operations Plan, which identifies procedures for coordinating with local jurisdictions during evacuation operations. Suisun City also participates in the County's Multi-Hazard Mitigation Plan to prevent hazards and emergencies (City of Suisun City 2014).

General Plan Policy PHS-15.4 requires the City to provide a circulation system with multiple access points, adequate provision for emergency equipment access and evacuation egress. General Plan Policy PHS-15.5 requires the City to designate evacuation routes in the event of a large scale or City-wide



emergency requiring the evacuation of a substantial portion of the City's residents. The Project would be designed to provide adequate emergency access to the site for emergency vehicles and would comply with all local, state, and federal requirements related to adopted emergency response plans and emergency evacuation plans. The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and as such, impacts would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?**

The Project site is not located in an area designated as a Very High Fire Hazard Severity Zone (VHFHSZ) by California Department of Forestry and Fire Protection (CAL FIRE), and the United States Forest Service (USFS) designates the Project site and surrounding areas as non-burnable (CAL FIRE 2022, USFS 2020). Due to the very low risk of wildfire hazards and the highly urbanized nature and flat topography of the Project site and surrounding areas, the Project's potential to result in wildland fire impacts are low. Therefore, all impacts would be less than significant, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.



### 3.10 Hydrology and Water Quality

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>X. HYDROLOGY AND WATER QUALITY</b> — Would the project:			
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) result in substantial erosion or siltation on- or off-site;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.10.1 ENVIRONMENTAL SETTING

The City is within the Suisun Hydrologic Unit within the San Francisco Bay Drainage Province. The Suisun Hydrological Unit drains approximately 157 square miles to the receiving surface water bodies in the Planning Area, Suisun Marsh and Suisun Bay. The Suisun Drainage Canal flows south through the westernmost portion of the Planning Area to Peytonia Slough, Suisun Marsh, and Suisun Bay.

The City overlies the Suisun-Fairfield Valley groundwater basin (Department of Water Resources [DWR] 2006). It is the second largest groundwater basin in Solano County and is located west of English Hills beneath Fairfield and the City. Groundwater is not used for domestic or irrigation purposes in the Planning Area and is not considered a viable resource for domestic water due to tidal flows that affect water quality. Groundwater in the area is brackish and unsuitable for use without specific water treatment (City of Suisun City 2014).



## 3.10.2 REGULATORY SETTING

### 3.10.2.1 Local

#### City of Suisun City 2035 General Plan

The General Plan includes the following hydrology and water quality Protection goals, policies, and programs relevant to the proposed Project.

**Goal PHS-5: Maintain and improve water quality in a way that provides public and environmental health benefits.**

Policy PHS-5.1: New development shall incorporate site design, source control, and treatment measures to keep pollutants out of stormwater during construction and operational phases, consistent with City and Fairfield-Suisun Urban Runoff Management Program standards.

Policy PHS-5.2: New development shall incorporate low impact development (LID) strategies, such as rain gardens, filter strips, swales, and other natural drainage strategies, to the greatest extent feasible, in order to reduce stormwater runoff levels, improve infiltration to replenish groundwater, reduce localized flooding, and reduce pollutants close to their source.

Policy PHS-5.3: New development should minimize the land area covered with driveways, loading docks, and parking lots in order to reduce stormwater flows, reduce pollutants in urban runoff, recharge groundwater, and reduce flooding.

Policy PHS-5.4: New development should use permeable surfaces for hardscape, where feasible.

Policy PHS-5.5: Industrial land uses with high wastewater generation rates or high effluent pollutant concentrations may be required by the Fairfield Suisun Sewer District to install equipment for pre-treatment of wastewater.

Policy PHS-5.6: The City will consult with appropriate regional, state, and federal agencies to monitor water quality and address local sources of groundwater and soil contamination, including possible contamination from activities at Travis Air Force Base, underground storage tanks, septic tanks, and industrial uses, as necessary, to achieve state and federal water quality standards.

Policy PHS-5.7: Septic systems are not allowed in new developments, which must connect to the regional sewer system for treatment of wastewater.

Program PHS-5.1: Stormwater Development Requirements. The City will review new developments for applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit. New developments must use BMPs during construction to reduce water quality impacts from construction work and during project operation to mitigate post-construction impacts to water quality. Long-term operational water quality impacts must be reduced using site design and source control measures to help keep pollutants out of stormwater. The City will encourage proactive measures that are a part of site planning and design that would reduce stormwater pollution as a priority over mitigation measures applied to projects after they are designed. Some of the many ways to reduce water quality impacts through site





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design include: reduce impervious surfaces; drain rooftop downspouts to lawns or other landscaping; and use landscaping as a storm drainage and treatment feature for paved surfaces.

### **Goal OSC-1: Protect wildlife habitat and movement corridors through the preservation of open space**

Policy OSC-1.2: New development in areas with riparian habitats and stands of mature trees shall preserve and incorporate those features into project planning and design, to the greatest extent feasible.

Policy OSC-1.3: The City will protect and preserve natural watercourses and drainage channels, particularly along open space areas, to the maximum extent feasible.

Policy OSC-1.4: New development shall preserve and incorporate into site planning natural drainages that could support riparian habitat to the greatest extent feasible.

Policy OSC-1.8: Roads, water lines, sewer lines, drainage facilities, and other public facilities constructed to serve development shall be located and designed to avoid substantial impacts to stream courses, associated riparian areas, and wetlands, to the extent.

Policy OSC-1.9: The City will support cooperative restoration, development, and promotion of natural resources with other public agencies with an interest in Suisun City's water and wildlife assets.

Policy OSC-1.10: In collaboration with other service providers and resource agencies, the City will seek funding to maintain and expand the system of existing parks and recreational open spaces, in part, to provide habitat for wildlife.

Program OSC-1.2: Wetlands and Riparian Buffers. Through review of proposed private and public projects near wetlands and riparian areas, the City will require buffering to protect these important habitats. Setbacks will be included as a part of conditions of approval for proposed projects. The depth of the setback shall be determined based upon site-specific conditions, habitat requirements of species that may use the setbacks, and communication with appropriate trustee and responsible agencies, such as the CDFW, the USACE, and the USFWS. Depending on the vegetation type, ongoing management of buffers may be necessary to address invasive species, human disturbance, and to sustain habitat and water quality functions. Buffers should be subject to a permanent covenant, such as a conservation easement, and shall include an ongoing maintenance agreement with a land trust, such as the Solano Land Trust, or other qualified nonprofit conservation organization. Low impact recreation could be allowed in buffer areas so long as impacts to these sensitive habitats are avoided or fully mitigated using design features to avoid indirect impacts, fencing and/or signage to exclude public access in environmentally sensitive areas, siting recreational amenities away from sensitive habitats at the outside edge of the buffer, and implementing BMPs. Human and pet disturbance in sensitive habitat areas should be discouraged as a part of buffer and project design.

### **Goal OSC-3: Protect and improve the qualities and amenities of the Suisun Marsh as a natural habitat**



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Policy OSC-3.4: New development shall control the movement of debris and sediment, and the rate and dispersal of runoff before drainage into watercourses and Suisun Marsh through the incorporation of erosion control measures.

Policy OSC-3.5: New development adjacent to watercourses, Suisun Slough, and Suisun Marsh shall include buffer areas, as needed, to avoid flood hazards, protect water quality, and preserve habitat for wildlife.

Policy OSC-3.6: The City will implement relevant policies of the Suisun Marsh Protection Plan to aid in protecting and restoring tidal marsh lands.

### **Goal OSC-4: Improve recreation access for residents and visitors into Suisun Marsh**

► Policy OSC-4.4: The City will require measures in areas adjacent to the Suisun Marsh to ensure against adverse effects related to urban runoff and physical access to the Marsh.

### **Goal OSC-7: Ensure an Adequate and Efficient Long-Term Water Supply**

Policy OSC-7.1: The City will participate on ongoing water supply planning with Solano County Water Agency, Solano Irrigation District, and other local jurisdictions.

Policy OSC-7.5: The City will encourage the use of recycled water for appropriate use, including, but not limited to, outdoor irrigation, toilet flushing, fire hydrants, and commercial and industrial processes.

Policy OSC-7.6: The City will support FSSD efforts to explore the feasibility of using treated wastewater for irrigation in parks, landscaped areas, and other appropriate locations.

## **3.10.3 DISCUSSION**

### **a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?**

Construction activities associated with the Project would involve grading excavation activities that could expose barren soils to sources of wind or water, resulting in the potential for erosion and sedimentation on and off the Project site resulting in the degradation of water quality. Additionally, Project construction activities would have the potential to generate polluted runoff into the City's storm drain system. The General Plan EIR addresses City stormwater requirements for development projects in the FSURMP. The City requires all development projects to obtain and comply with a NPDES General Construction Permit from the SWRCB which requires applicants to prepare a SWPPP to demonstrate that Project construction and operation would not cause increased sedimentation and polluted runoff. The NPDES General Construction permit would be issued to the FSURMP by the San Francisco Bay RWQCB which would include construction and stormwater BMPs to ensure that the Project construction and operation implement water quality protection measures (City of Suisun City 2014). Additionally, the City is required to conform to the conditions stated in the San Francisco RWQCB permit for the discharge of regional municipal stormwater runoff (MS4s) (Order R2-2009-0074 NPDES Permit No. CAS612008). Permit Attachment 3 Provision C.3.g contains a list of the requirements for analysis and management of hydromodification from development in the City, as follows: standard design control criteria (range of



flows to be controlled, allowable deviation between pre-project and post-project flow duration, allowable flow rate, and standard modeling type); deviation from standard design control criteria; record keeping; discharge into upstream reaches of Laurel or Ledgewood Creeks. Therefore, with the preparation and implementation of a SWPPP, which includes BMPs to reduce water quality impacts related to construction activities, in addition to compliance with local, state, and federal water quality policies and regulations, construction of the Project would not violate water quality standards, waste discharge requirements, or substantially degrade water quality, and impacts would be less than significant.

The Project would result in approximately 22,135 square feet of new impervious area post construction. Pervious site surfaces would include landscaped and garden areas, such as tree wells and flow through planters. The stormwater runoff generated by the Project would be routed to three basins for infiltration and cleaning through drain rock. The sizes of each basin are as follows: Basin 1 is 1,471-square feet (820-cubic feet); Basin 2 is 1,641-square feet (821-cubic feet); Basin 3 is 1,991-square feet (996-cubic feet). Excess water would collect in 4-inch perforated underdrain pipes within the drain rock, or through overflow into area drains where it would be routed within 18-inch storm drainpipes into the existing 42-inch storm drain to the south. Connection to the existing main would require two storm drain manholes. Two 18-inch storm drain stubs have already been provided to the north of the site for future projects. Runoff directed into landscaped areas would then be conveyed to the proposed detention pipes, after which the runoff would then be conveyed to the detention basin, finally discharging into the City's storm drain system. The Project's stormwater drainage system would be designed according to local, state, and federal stormwater policies and regulations.

As such, the Project's construction and operation would not result in violation of water quality standards, waste discharge requirements, or substantially degrade water quality. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

As described in the City's General Plan EIR, groundwater is not used as a source of municipal water supply in the City (City of Suisun City 2014). The Project would connect to the City's water system and would not include the construction or use of wells that would source groundwater. Therefore, the Project would not substantially decrease groundwater supplies. Additionally, the General Plan EIR identified section 15.12.080 of the Suisun City Municipal Code which requires preparation and approval of a runoff control plan. This plan must indicate the calculated runoff from a development site under natural conditions and after development has been completed, using City drainage standards. The plan must also demonstrate that peak runoff from the site will not increase after development and must include all necessary measures to ensure this result, to the satisfaction of the City Engineer (City of Suisun City 2014).

The Project site as it currently exists is almost entirely made up of pervious surfaces. The Project would result in approximately 22,135 square feet of impervious area post construction. Post construction pervious site surfaces would include landscaped areas, which would be permeable, and three basins for stormwater infiltration and drain rock cleaning. Within the basins, excess water would collect in 4-inch



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perforated underdrain pipes within the drain rock, or through overflow into area drains where it would be routed within 18-inch storm drain pipes into the existing 42-inch storm drain to the south. The Project site is not located in an area important for groundwater recharge, and as such, would not interfere substantially with groundwater recharge or substantially decrease groundwater supplies. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**c) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

**v) result in substantial erosion or siltation on or off site;**

There are no streams or rivers located on or immediately adjacent to the Project site. The nearest creek is McCoy Creek located approximately 0.3-mile to the east of the Project site.

Construction of the Project would involve demolition and ground disturbing activities that could result in erosion related impacts. As discussed above under Impact (a), the Project would be required to obtain a NPDES General Construction Permit and prepare and implement a SWPPP in accordance with the City's SDR. Additionally, the Project would be required to prepare an erosion control plan that is consistent with the required SWPPP. The SWPPP would include BMPs that would be implemented during construction activities to reduce the potential for erosion.

Operation of the Project could result in a change in drainage patterns due to new development and impervious and pervious areas leading to erosion or siltation on and offsite. However, as described under Impact (a), the Project would construct a stormwater system onsite that would be designed in accordance with NPDES MS4 C.3 requirements. The Project would collect stormwater onsite to meet C.3 requirements through Low Impact Development (LID) measures. Stormwater and runoff would be routed into the stormwater infiltration basins and to the public storm drain to the south of the Project site. The incorporation of C.3 requirements into the Project design would ensure that polluted runoff from the site is not discharged into the City's stormwater system. In addition, the Project would be required to prepare a SWPPP that would ensure that the Project does not result in substantial erosion or siltation on or offsite and would ensure that polluted runoff does not enter the City's stormwater system.

Therefore, construction and operation of the Project would not result in substantial alteration to the existing drainage pattern in a manner that would result in substantial erosion or siltation onsite or offsite, and impacts would be less than significant with mitigation. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**vi) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;**

The Project site is currently undeveloped with the surface almost entirely pervious. Development of the Project would result in approximately 22,135 square feet of impervious area post-construction. The Project would increase the impervious area at the site, and therefore, development of the Project would increase runoff levels as compared to existing conditions at the site. Additionally, the Project would be designed in accordance with C.3 requirements and stormwater runoff at the site would flow through LID



treatment measures in the stormwater retention basins and infiltration systems. The stormwater system constructed at the site would be designed to control the volume of stormwater runoff at the site to reduce the potential for flooding. The General Plan EIR identified Section 15.12.080 of the City's Municipal Code to require preparation and approval of a runoff control plan in development projects. The plan must include a demonstration that peak runoff from the site will not increase after development and must include all necessary measures to ensure this result. Additionally, the Project would comply with general requirements for stormwater containment outlined in Chapter 4 of the City's Engineering Standards and Specifications (City of Suisun City 1996).

The Project would construct and design the new stormwater systems onsite in accordance with the City's requirements including compliance with C.3 requirements and conformance with the City's standards; therefore, the Project would not increase the rate of surface runoff and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**vii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;**

As described previously, construction activities associated with the Project would have the potential to generate polluted runoff and therefore, is required to prepare and implement a SWPPP and an erosion control plan as required by the City's NPDES MS4 C.3 requirements. Implementation of a SWPPP and erosion control plan during construction activities would ensure that polluted runoff from the construction site would be prevented or reduced. Stormwater generated at the site during operation of the Project would be directed to the stormwater detention and infiltration basins with cleaning rock. The Project would design and construct the storm drain system onsite in accordance with C.3 requirements and City guidelines to properly manage runoff from the Project site.

Therefore, construction and operation of the Project would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**viii) impede or redirect flood flows?**

The Project site is not identified within any flood plain and there are no waterways within or in the vicinity of the Project site that would be impacted from Project construction and operation. The nearest waterway is McCoy Creek located approximately 0.3-mile to the east of the Project site. The Project would construct storm drain systems onsite that would meet the City requirements for post construction runoff volumes and storm drain system design requirements. The proposed storm drainage system would be designed to handle potential flood flows and the Project would not result in changes to the existing drainage pattern that would impede or redirect flood flows. Therefore, with the implementation of City requirements and C.3 storm drainage requirements, the Project would not impede or redirect flood flows, and there would be a less than significant impact. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



**d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?**

The City's General Plan EIR identifies a 100-year floodplain to the north of the City. However, the elevated embankment of the Union Pacific Railroad tracks, which bisects the City in a northeast to southwest direction, channels these 100-year-flood flows to the southwest and out into Suisun Bay, thereby protecting development in the northern part of the Planning Area. The 100-year floodplain has also been mapped along McCoy Creek, Laurel Creek, Ledgewood Creek, the Suisun Drainage Canal, and within and adjacent to Suisun Marsh. This includes the entire southwest portion of the Planning Area (including the Downtown Waterfront Area). The Federal Emergency Management Agency (FEMA) has also mapped the 500-year floodplain along McCoy Creek and in Suisun Marsh (City of Suisun City 2014). The Planning Area is not located within the area covered by the Central Valley Flood Protection Plan (DWR 2010), and therefore mapping to determine the presence or absence of a 200-year floodplain pursuant is not required. The Project site is not mapped in a flood hazard zone; however, it is located adjacent to Zone AO, One Percent Annual Chance Flood Hazard zone (FEMA 2020). Zone AO correlates with River or stream flood hazard areas, and areas with a one percent or greater chance of shallow flooding each year, usually in the form of sheet flow, with an average depth ranging from one to three feet. These areas have a 26 percent chance of flooding over the life of a 30-year mortgage. Average flood depths derived from detailed analyses are shown within these zones. As a participant in the National Flood Insurance Program (NFIP) administered by the FEMA, all development within the City must comply with the components of the FEMA Flood Management Requirements, which are intended to ensure that: new development does not cause increased flooding elsewhere; and new buildings will be protected from the base flood (City of Suisun City 2014). The Project would be constructed in compliance with the 2035 General Plan policies and programs, combined with other relevant state regulations to ensure decreased risk of pollutants release.

The Suisun Marsh Habitat Management, Preservation, and Restoration Plan (SMP) includes a program to improve levee stability through engineering practices to reduce the risk of catastrophic levee failure (City of Suisun City 2014). Portions of the Planning Area are identified as being within the levee failure area; however, the Project site is not located within this area nor a flood zone. Additionally, the DOC Tsunami Hazard Area Maps identified that the Planning Area is not located within a seiche hazard zone or tsunami hazard zone and would not be at risk for inundation related to tsunamis or seiche events (DOC 2019). The Project would not risk release of pollutants due to Project inundation in flood hazard, tsunami, or seiche zones, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

The RWQCB prepares and implements the San Francisco Bay Basin Water Quality Control Plan (Basin Plan) to protect water quality in the San Francisco Bay. The Basin Plan sets forth the state's water quality standards and objectives and policies necessary to protect water quality. As identified in the General Plan EIR, NPDES permits must be consistent with the Basin Plans for development within the City (City of Suisun City 2014). The Project would comply with NPDES permit requirements including the preparation and implementation of a SWPPP with BMPs to minimize impacts to water quality during construction.



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Additionally, the Project would include construction of detention basins and stormwater treatment systems in accordance with C.3 requirements. Therefore, the Project would not conflict with or obstruct implementation of a water quality control plan, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



### 3.11 Land Use and Planning

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XI. LAND USE AND PLANNING</b> — Would the project:			
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.11.1 ENVIRONMENTAL SETTING

The Project site is located on an 8.29-acre vacant and undeveloped lot in a highly urbanized area of the City. There are no existing structures or uses onsite. The Project site is located immediately north of Highway 12, between Sunset Avenue and Snow Drive and is surrounded by existing single-family residential and commercial uses. The Project site is zoned as CMU and the General Plan land use designation is also CMU. The General Plan defines the CMU land use designation as applicable to parcels where a variety of commercial uses are desired as the primary use, with residential use permitted as secondary use (City of Suisun City 2014).

#### 3.11.2 DISCUSSION

##### a) Would the project physically divide an established community?

The Project site is located in a highly urbanized area of the City and is surrounded by existing developments. The Project would develop approximately 3.17 acres of the Project site with the Tractor Supply Company retail center which would include an approximately a 22,135-square-foot retail building, an outdoor sales yard, a supporting surface parking lot with 94 spaces, and on-grade truck delivery docks at the rear of the property. The remaining 5.12 acres would not be developed as part of the Project and would be subdivided as a separate parcel. The Project would include the development of an undeveloped and vacant lot with commercial uses and would not include the construction of any new roadways or modifications to existing roadways that would divide an established community. Therefore, impacts would be less than significant, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

##### b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

The Project would be required to comply with the City's General Plan and the City's Zoning Ordinance. The Project site is designated by the General Plan and zoned CMU. The General Plan and zoning code



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identifies the CMU land use designation as applicable to parcels where a variety of commercial uses are desired as the primary use, with residential use permitted as secondary use (City of Suisun City 2014). The Project would include the construction of a new commercial use on the Project site and therefore, would be consistent with the land use designation and zoning for the Project site.

The Project would be subject to the development standards for the CMU zoning district. The Project would include the construction and operation of a Tractor Supply Company retail center, with outdoor sales yards, a supporting surface parking lot with 94 parking spaces, and on-grade truck delivery docks at the rear of the property. The Project would be constructed and operated in accordance with the development standards of the zoning district. The CMU zoning district allows for structures with a maximum height of 45 feet or three stories and the Project would develop a single-story, approximately 22,135-square-foot retail space with a maximum building height of 30 feet. The Project would be designed to be consistent with the General Plan land use designation and relevant ordinances and the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purposes of avoiding or mitigating an environmental effect, and impacts would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR and the criteria for requiring further CEQA review are not met.

### 3.12 Mineral Resources

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XII. MINERAL RESOURCES</b> — Would the project:			
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.12.1 ENVIRONMENTAL SETTING

The City's General Plan does not identify any mineral resources located within the City. The General Plan EIR identified that there are no areas of known mineral resources within the Planning Area and therefore, implementation of the General Plan would not result in any impacts to mineral resources (City of Suisun City 2014). Additionally, a review of the DOC's Mineral Land Classification maps determined that the project site is located in an area identified as Mineral Resource Zone (MRZ) -1 (DOC 1988). MRZ-1 zones are areas where adequate information indicates that no significant mineral resources are present, or where it is judged that little likelihood exists for their presence.

#### 3.12.2 DISCUSSION

- a) **Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**
- b) **Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?**

As outlined in the City's General Plan EIR, there are no areas of known mineral resources within the Planning Area. Additionally, as discussed above under Section 3.12.1, the Project site is located in an area designated as MRZ-1 and therefore, no significant mineral resources are present onsite. Therefore, the Project would not result in the loss of availability of a known mineral resource or a mineral resource recovery site. The Project would result in no impact and would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### 3.13 Noise

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XIII. NOISE</b> — Would the project result in:			
a) Generation of 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.13.1 ENVIRONMENTAL SETTING

The evaluation of noise impacts is based, in part, on a Project-specific technical study, “Acoustical Analysis, Tractor Supply Company retail center, Suisun City, California,” by WJV Acoustics Inc., March 2022, included as Appendix F of this document.

##### Noise Characteristics

Noise is generally defined as unwanted sound that annoys or disturbs people and potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a proposed project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an existing sound level.

Although the decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity, it does not accurately describe how sound intensity is perceived by human hearing. The perceived loudness of sound is dependent upon many factors, including sound pressure level and frequency content. The human ear is not equally sensitive to all frequencies in the entire spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive in a process called A-weighting, written as dB(A), and referred to as A-weighted decibels. There is a strong correlation between A-weighted sound levels and community response to noise. For this reason, the A-weighted sound level has

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become the standard tool of environmental noise assessment. Table 3-6 summarizes typical A-weighted sound levels for different common noise sources.

**Table 3-6: Typical A-Weighted Sound Levels**

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Jet flyover at 1,000 Feet	-110-	Rock band
Gas lawnmower at 3 Feet	-100-	
Diesel truck at 50 Feet at 50 MPH	-90-	
Noisy urban area, daytime		Food blender at 3 Feet
Gas lawnmower, 100 Feet	-80-	Garbage Disposal at 3 Feet
Commercial area		
Heavy traffic at 300 Feet	-70-	Vacuum Cleaner at 10 Feet
		Normal Speech at 3 Feet
Quiet urban daytime	-60-	
		Large business office
Quiet urban nighttime	-50-	Dishwasher in next room
Quiet suburban nighttime		
	-40-	Theater, large conference room (Background)
Quiet rural nighttime		
	-30-	
		Library
	-20-	Bedroom at night, concert hall (Background)
	-10-	
	-0-	Broadcast/recording studio

Source: Caltrans 2013

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level ( $L_{eq}$ ), the minimum and maximum sound levels ( $L_{min}$  and  $L_{max}$ ), percentile-exceeded sound levels (such as  $L_{10}$ ,  $L_{20}$ ), the day-night sound level ( $L_{dn}$ ), and the community noise equivalent level (CNEL).  $L_{dn}$  and CNEL values often differ by less than 1 dB. As a matter of practice,  $L_{dn}$  and CNEL values are considered to be equivalent and are treated as such in this assessment. Table 3-7 defines sound measurements and other terminology used in this report.

**Table 3-7: Definition of Sound Measurements**

Sound Measurement	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

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Sound Measurement	Definition
A-Weighted Decibel (dB(A))	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
C-Weighted Decibel (dB(C))	The sound pressure level in decibels as measured using the C- weighting filter network. The C-weighting is very close to an unweighted or flat response. C-weighting is only used in special cases when low-frequency noise is of particular importance. A comparison of measured A- and C-weighted level gives an indication of low frequency content.
Maximum Sound Level (Lmax)	The maximum sound level measured during the measurement period.
Minimum Sound Level (Lmin)	The minimum sound level measured during the measurement period.
Equivalent Sound Level (Leq)	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (Lxx)	The sound level exceeded xx % of a specific time period. L10 is the sound level exceeded 10% of the time. L90 is the sound level exceeded 90% of the time. L90 is often considered to be representative of the background noise level in a given area.
Day-Night Level (Ldn)	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM.
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 PM to 10:00 PM and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 PM to 7:00 AM.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/second.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Source: Federal Highway Administration 2006

With respect to how humans perceive and react to changes in noise levels, a 1 dB(A) increase is imperceptible, a 3 dB(A) increase is barely perceptible, a 5 dB(A) increase is clearly noticeable, and a 10 dB(A) increase is subjectively perceived as approximately twice as loud. These subjective reactions to changes in noise levels were developed on the basis of test subjects' reactions to changes in the levels of steady-state pure tones or broadband noise and to changes in levels of a given noise source. These statistical indicators are thought to be most applicable to noise levels in the range of 50 to 70 dB(A), as this is the usual range of voice and interior noise levels. Numbers of agencies and municipalities have developed or adopted noise level standards, consistent with these and other similar studies to help prevent annoyance and to protect against the degradation of the existing noise environment.

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For a point source such as a stationary compressor or construction equipment, sound attenuates based on geometry at a rate of 6 dB per doubling of distance. For a line source such as free-flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance. Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface, such as grass, attenuates at a slightly greater rate than sound that travels over a hard surface, such as pavement. The increased attenuation is typically in the range of 1–2 dB per doubling of distance. Barriers, such as buildings and topography that block the line of sight between a source and receiver, also increase the attenuation of sound over distance.

### Decibel Addition

Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted through ordinary arithmetic. On the dB scale, a doubling of sound energy corresponds to a 3 dB increase. In other words, when two identical sources are each producing sound of the same loudness, their combined sound level at a given distance would be 3 dB higher than one source under the same conditions. For example, if one source produces a sound pressure level of 70 dB(A), two identical sources would combine to produce 73 dB(A). The cumulative sound level of any number of sources can be determined using decibel addition.

### Vibration Standards

Vibration is like noise such that noise involves a source, a transmission path, and a receiver. While related to noise, vibration 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 vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system that is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocity in inches per second (in/sec PPV). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of in/sec PPV.

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 3-8 notes the general threshold at which human annoyance could occur is 0.1 in/sec PPV for continuous/frequent sources. Table 3-9 indicates the threshold for damage to typical residential and commercial structures ranges from 0.3 to 0.5 in/sec PPV for continuous/frequent sources.

**Table 3-8: Guideline Vibration Annoyance Potential Criteria**

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.035	0.012
Distinctly perceptible	0.24	0.035
Strongly perceptible	0.90	0.10
Severe	2.0	0.40

Source: Caltrans 2020b

Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.

**Table 3-9: Guideline Vibration Damage Potential Criteria**

Structure and Condition	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.30	0.12
Historic and some old buildings	0.50	0.20
Older residential structure	0.70	0.30
New residential structures	1.2	0.50
Modern industrial/commercial buildings	2.0	0.50

Source: Caltrans 2020b

Notes: Transient sources again create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seal equipment, vibratory pile drivers, and vibratory compaction equipment.

Operation of heavy construction equipment, particularly pile driving and other impact devices, such as pavement breakers, create seismic waves that radiate along the surface of the ground and downward into the earth. These surface waves can be felt as ground vibration. Vibration from the operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance will result in different vibration levels containing different frequencies and

displacements. In all cases, vibration amplitudes will decrease with increasing distance. Perceptible groundborne vibration is generally limited to areas within a few hundred feet of construction activities. Table 3-10 summarizes typical reference vibration levels generated by select construction equipment as defined in Table 7-4 “Vibration Source Levels for Construction Equipment” in the Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual. Only equipment relevant to the Project are referenced in Table 3-10 below.

**Table 3-10: Reference Vibration Source Levels for Construction Equipment**

Equipment	PPVref at 25 Feet
Vibratory roller	0.210
Large bulldozer	0.089
Loaded trucks	0.076
Small bulldozer	0.003

Source: Federal Transit Administration 2018

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (Federal Transit Administration 2018). “PPVref” is the reference PPV from Table 3-10 and “Distance” is the distance between the source and the receptor:

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

### 3.13.2 REGULATORY SETTING

#### 3.13.2.1 State

##### California Building Code

Part 2, Title 24 of the California Code of Regulations California Noise Insulation Standards establishes minimum noise insulation standards to protect persons within new hotels, motels, dormitories, long-term care facilities, apartment houses, and dwellings other than single-family residences. Under Section 1207.11 “Exterior Sound Transmission Control”, interior noise levels attributable to exterior noise sources cannot exceed 45 Ldn in any habitable room. Where such residences are located in an environment where exterior noise is 60 Ldn or greater, an acoustical analysis is required to ensure interior levels do not exceed the 45 Ldn interior standard. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the building must also specify a ventilation or air conditioning system to provide a habitable interior environment.



### California Green Building Standards (CalGreen)

The California Green Building Standards Code (CalGreen) establishes interior noise insulation standards for non-residential occupied buildings. The CalGreen code also applies to occupied non-guestroom spaces within a hotel, such as meeting rooms, offices, etc. CalGreen Section 5.507 "Environmental Comfort", states the following:

*5.507.4.1 Exterior noise transmission. Wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall meet a composite STC rating of at least 50 or a composite OITC rating of no less than 40, with exterior windows of a minimum STC of 40 or OITC of 30 in the following locations:*

*Within the 65 CNEL noise contour of an airport*

*Exceptions:*

*Ldn or CNEL for military airports shall be determined by the facility Air Installation Compatible Land Use Zone plan.*

*Ldn or CNEL for other airports and heliports for which a land use plan that has not been developed shall be determined by the local general plan noise element.*

*Within the 65 CNEL or Ldn noise contour of a freeway or expressway, railroad, industrial source or fixed-guideway noise source as determined by the Noise Element of the General Plan.*

*5.507.4.1.1 Noise exposure where noise contours are not readily available. Buildings exposed to a noise level of 65 dB Leq-1-hr during any hour of operation shall have building, addition or alteration exterior wall and roof-ceiling assemblies exposed to the noise source meeting a composite STC rating of at least 45 (or OITC 35), with exterior windows of a minimum STC of 40 (or OITC 30).*

*5.507.4.2 Performance method. For buildings located as defined in Section 5.507.4.1 or 5.507.4.1.1, wall and roof-ceiling assemblies exposed to the noise source making up the building or addition envelope or altered envelope shall be constructed to provide an interior noise environment attributable to exterior sources that does not exceed an hourly equivalent noise level (Leq -1Hr) of 50 dBA in occupied areas during any hours of operations.*

*5.507.4.2.1 Site features. Exterior features such as sound walls or earth berms may be utilized as appropriate to the building, addition, or alteration project to mitigate sound migration to the interior.*

*5.507.4.2.2 Documentation of compliance. An acoustical analysis documenting complying interior sound levels shall be prepared by personnel approved by the architect or engineer of record.*

*5.507.4.3 Interior sound transmission. Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.*

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### California Environmental Quality Act

The CEQA Guidelines, Appendix G, indicates 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.

#### 3.13.2.2 Local

##### City of Suisun City 2035 General Plan

The Noise section in the Public Safety Element of the General Plan indicates that the primary sources of noise in the City include roadways (Highway 12), railroad operations (Union Pacific Railroad), and aircraft operations (Travis Air Force Base). Transportation noise is a significant issue in areas along highways and other high-volume roadways. In affected areas, these noise impacts must be considered in the determination of appropriate land uses. Table 3-11 provides the General Plan noise level standards for transportation noise sources.

**Table 3-11: Maximum Allowable Noise Exposure (dBA), General Plan Transportation Noise Sources**

Noise Sensitive Land Use	Outdoor Activity Areas	Interior Spaces	
	L <sub>dn</sub> /CNEL, dB	L <sub>dn</sub> /CNEL, dB	L <sub>eq</sub> , dB <sup>2</sup>
Residential	60	45	-
Residential (in Downtown Waterfront Specific Plan Area or other Mixed-Use Designations)	70	45	-
Transient Lodging	60	45	-
Hospitals, Nursing Homes	60	45	-
Theaters Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	60	-	40
Office Buildings	-	-	45
Schools, Libraries, Museums	60	-	45
Playgrounds, Neighborhoods	70	-	-

Source: Suisun City General Plan

Notes: Noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, residences, and other similar land uses. Outdoor activity areas are considered to be the portion of a noise-sensitive property where outdoor activities would normally be expected (i.e., patios of residences and outdoor instructional areas of schools). Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public rights-of-way. Where development projects or roadway improvement projects could potentially create noise impacts, an

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Noise Sensitive Land Use	Outdoor Activity Areas	Interior Spaces	
	L <sub>dn</sub> /CNEL, dB	L <sub>dn</sub> /CNEL, dB	L <sub>eq</sub> , dB <sup>2</sup>

acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Such analysis shall be the financial responsibility of the applicant and be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. Mitigation strategies shall include site planning and design over other types of mitigation.

Table 3-12 provides noise level performance standards for non-transportation (stationary) noise sources, as provided in the General Plan Noise Element. The non-transportation noise level standards are provided in terms of the energy level average noise level (L<sub>eq</sub>) and maximum allowable noise level (L<sub>max</sub>) and become more restrictive during the nighttime hours (10:00 PM to 7:00 AM). The noise level standards provided in Table 3-12 are applicable to new noise-sensitive land uses proposed on the vicinity of existing stationary sources.

**Table 3-12: Non-Transportation Noise Level Standards (dBA), Suisun City General Plan New Noise-Sensitive Land Uses**

Daytime (7:00 AM to 10:00 PM)		Nighttime (10:00 PM to 7:00 AM)	
L <sub>eq</sub>	L <sub>max</sub>	L <sub>eq</sub>	L <sub>max</sub>
60	75	45	60

Source: Suisun City General Plan

Notes: Each of the noise levels specified shall be lowered by five dBA for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).

Table 3-13 provides noise level performance standards for non-transportation (stationary) noise sources, as provided in the General Plan Noise Element. The non-transportation noise level standards are provided in terms of the energy average noise level (L<sub>eq</sub>) and maximum allowable noise level (L<sub>max</sub>) and become more restrictive during the nighttime hours (10:00 PM to 7:00 AM). The noise level standards provided in Table 3-13 are applicable to new noise-producing land uses proposed in the vicinity of existing noise-sensitive land uses. It should be noted, truck and vehicle movements off public roadways are considered to be stationary noise sources.

The General provides the following exemption to the noise standards provided in Table 3-13:

- If the ambient noise level exceeds the standard in Table 9-3 (*Modified Initial Study Table 3-13*), the standard becomes the ambient level plus 5 dB(A).

**Table 3-13: Non-Transportation Noise Level Standards (dBA), Suisun City General Plan New Noise-Sensitive Land Uses**

Category	Cumulative Duration of a Noise Event <sup>1</sup>	Daytime <sup>3,5</sup>	Nighttime <sup>4,5</sup>
1	30 (L <sub>50</sub> )	50	45
2	15 (L <sub>25</sub> )	55	50
3	5 (L <sub>8.3</sub> )	60	55
4	1 (L <sub>1.7</sub> )	65	60
5	0 (L <sub>max</sub> )	70	65

Source: Suisun City General Plan

1 Cumulative duration refers to time within any one-hour period.

2 Noise level standards measured in dBA.

3 Daytime = Hours between 7:00 AM and 10:00 PM

4 Nighttime = Hours between 10:00 PM and 7:00 AM 5 Each of the noise level standards specified may be reduced by

5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

The General Plan also includes the following noise goals, policies, and programs relevant to the proposed Project.

Goal PHS-1: Ensure that Noise Does Not Substantially Reduce the Quality of Urban Life.

Objective PHS-1: Require review and conditioning of new developments to mitigate noise impacts.

Policy PHS-1.2: New development shall be designed to disperse vehicular traffic onto a network of fully connected smaller roadways.

Policy PHS-1.4: The City will use all feasible means to reduce the exposure of sensitive land uses to excessive noise levels and mitigate where noise levels exceed those specified in Table 9-1 (*Modified Initial Study Table 3-11*).

Policy PHS-1.8: Soundwalls are prohibited as a method for reducing noise exposure that could be addressed through other means, such as, site design, setbacks, earthen berms, or a combination of these techniques.

Policy PHS-1.9: New developments shall implement feasible noise mitigation to reduce construction noise and vibration impacts. Projects that incorporate feasible mitigation will not be considered by the City to have significant impacts for the purposes of California Environmental Quality Act review.

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Program PHS-1.2: Review and Conditioning of Noise-Generating New Uses. New developments that generate noise will be reviewed and feasible mitigation will be required to reduce effects on existing noise-sensitive land uses.

Methods may include, but are not limited to: operating at less noise sensitive parts of the day, better distribution of vehicle traffic to avoid large volumes on any one street, traffic calming, buffering, sound insulation, and other methods deemed effective by the City.

The maximum noise level resulting from new sources and ambient noise shall not exceed the standards in Table 9-3 (*Modified Initial Study Table 3-13*), as measured at outdoor activity areas of any affected noise sensitive land use except:

- If the ambient noise level exceeds the standard in Table 9-3 (*Modified Initial Study Table 3-13*), the standard becomes the ambient level plus 5 dBA.
- Reduce the applicable standards in Table 9-3 (*Modified Initial Study Table 3-13*) by 5 decibels if they exceed the ambient level by 10 or more decibels.
- The City shall exempt all school related events and City sponsored events from noise standards outlined in this chapter.

Program PHS-1.5: Construction Noise and Vibration Reduction Measures. The City will require new developments proposing construction adjacent to existing noise-sensitive uses or close enough to noise-sensitive uses that relevant performance standards could be exceeded to incorporate feasible mitigation to reduce construction noise exposure. This may include additional limits on the days and times of day when construction can occur, re-routing construction equipment away from adjacent noise-sensitive uses, locating noisy construction equipment away from noise-sensitive uses, shrouding or shielding impact tools, use of intake and exhaust mufflers and engine shrouds, construction of acoustic barriers (e.g., plywood, sound attenuation blankets), pre-drilling holes for placement of piles or non-impact pile driving where piles would be needed, and other feasible technologies or reduction measures necessary to achieve the City's relevant performance standards.

### City of Suisun City Municipal Code

The Suisun City Municipal Code includes the following requirements related to noise that are applicable to the proposed Project.

#### *Title 8, Public Nuisances*

**Chapter 8.12.080(S). Generally – Acts declared to be nuisances, Noise Regulations:** The following special noise restrictions are hereby established without regard to their sound level impact and may be enforced without the prerequisite of a sound level measurement.

##### 1. General Noise Regulations.

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- a. It is unlawful for any person to willfully make or continue or permit or cause to be made or continued, any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

The standards which shall be considered in determining whether a violation of the provisions of this section exists shall include, but not be limited to, the following:

- i. The volume of the noise;
  - ii. The intensity of the noise;
  - iii. Whether the nature of the noise is usual or unusual;
  - iv. Whether the origin of the noise is natural or unnatural;
  - v. The volume and intensity of the background noise, if any;
  - vi. The proximity of the noise to residential sleeping facilities;
  - vii. The nature and zoning of the area within which the noise emanates;
  - viii. The density of the inhabitation of the area within which the noise emanates;
  - ix. The time of the day or night the noise occurs;
  - x. The duration of the noise, including whether its short term or temporary;
  - xi. Whether the noise is produced by a commercial or noncommercial activity.
- b. This section shall be inapplicable to emergency work, vehicles, and personnel.
2. Specific Prohibitions. No person shall do, cause, or suffer, or permit to be done on any premises owned, occupied, or controlled by such person, the following activities which are declared prima facie evidence of a violation of this section, but said enumeration shall not be deemed exclusive:
- a. Auto Body Repairs. Repair any auto body unless within a completely enclosed building and the noises from such repairs are reasonably confined to such building.
  - b. Engine Repair and Testing. Repair, rebuild, or testing of any engine in a manner that can be heard on neighboring properties between the hours of 9:00 PM and 7:00 AM
  - c. Animals. The keeping of any animal that causes frequent or persistent noise plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units, or plainly audible at a distance of 50 feet from any nonresidential building or structure, shall be presumed to disturb the comfort and repose of any person on a nearby property, following regulations of Title 6 (Animals); however, nothing in this subsection shall be construed to apply to occasional noises

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emanating from a legally operated kennel, animal hospital or veterinary clinic, humane society or pound.

- d. **Generators.** Generators are considered accessory structures in residentially zoned lots and shall meet the setbacks described in Table 18.31.005 (Table of development standards in residential zones) for accessory structures in residential zones. Generators in commercially zoned lots located near noise sensitive land uses must meet the guidelines of Section 18.20.080 (Trash and Storage Areas) and meet the setbacks described in Table 18.32.010 (Table of development standards in commercial zones) for enclosed structures for generators in commercial zones, the openings of the structure shall not face noise sensitive zones. Portable generators must meet the setbacks described in Table 18.31.005 (Table of development standards in residential zones) for accessory structures in residential zones, unless manufacturer's decibel rating is below 70dB (consistent with air conditioning unit).
- e. **Domestic Power Tools.** Operating or permitting the operation of any domestic power tools, small power equipment, or similar device used in residential areas between the hours of 9:00 PM and 7:00 AM so as to cause noise that can be heard across a residential real property boundary.
- f. **Sounding Horns and Signal Devices.** The sounding of any horn or signaling device on any automobile, motor vehicle or any other vehicle on any street or public street except as a danger warning; the creation by means of any such signaling device of any unreasonably and unnecessarily loud or harsh sounds; the sounding of any such signaling device for an unnecessarily or unreasonably long period of time; or the use of any horn, whistle or other device operated by engine exhaust
- g. **Vehicle Noise.**
  - i. **Defect in Vehicle or Load.** The use of any automobile, motorcycle or other vehicle so out of repair, so loaded or in such manner as to create loud and unnecessary grating, grinding, rattling or other noise.
  - ii. **Motor Vehicle Noises.** Any loud or annoying noise made by any motor vehicle and not reasonably necessary to the operation thereof under the circumstances, including, but not limited to, noise caused by screeching of tires; racing or accelerating the engine, except in the course of repair or adjustment thereof during nighttime hours; backfiring the engine; or the emission of exhaust from the engine tail pipe or muffler. Vehicles must be maintained in compliance with Sections 27150, 27151, 27200 of the Vehicle Code, 13 CCR 1036, including amendments and successor statutes, and any other relevant state laws and regulations.
  - iii. **Large Vehicle Delivery and Loading Within 50 Feet of Residential Uses.** The loading, unloading, or delivery of goods, merchandise, vehicles or supplies by large trucks, tractor-trailers, or other similar vehicles between the hours of 9:00 PM and 7:00 AM unless a sound wall or other hours have been allowed through a use permit.

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- h. Musical Instruments and Sound Amplifiers. Use or operate any musical instrument or any device, machine, apparatus, or instrument for intensification or amplification of the human voice or any sound or noise as follows:
  - i. Use or operate any device, machine, apparatus, or instrument for intensification or amplification of musical instruments, the human voice, or of any other sound in or on a public place without first obtaining a special event permit.
  - ii. Use of any unamplified musical instrument, or other apparatus that is clearly audible from a distance of 70 feet, upon public places without first obtaining a special event permit.
  - iii. Operate, play, or permit the operation or playing of any radio, television, phonograph, drum, musical instrument, sound amplifier, or similar device, which produces, reproduces, or amplifies sound in any public place such that the noise level disturbs a reasonable person owning, using, or occupying property in the neighborhood between the hours of 9:00 PM and 7:00 AM This section shall be inapplicable to radio systems operated by FCC licensees in the regular course of business.
  - iv. Use, operate, or play, or permit to be played, used, or operated, of any radio receiving set, musical instrument, audio system, loudspeaker, sound amplifying equipment or other machine or device for the producing or reproducing of sound, which casts sound upon the streets for the purpose of commercial or noncommercial advertising, or attracting the attention of the public to any building, structure or attraction (a) such that the sound therefrom creates noise in a residential area; or (2) on a public right-of-way or public space without first obtaining a special event permit.
- i. Explosives, Firearms, and Similar Devices. The use or firing of explosives, firearms, or similar devices which create impulsive sound so as to cause a noise across a real property boundary or on a public place, except when part of a government-authorized honor guard.
- j. Construction or Demolition Work. Construction or demolition work not in conformance with Section 15.04.075 (Construction Work Hours) of this Code.
- k. Late Night Disturbances. Disturbances of any kind that are plainly audible by inhabitants or occupants of any adjacent or neighboring residential properties or units or are plainly audible at a distance of 50 feet from a real property boundary, that occur between 9:00 PM and 7:00 AM, shall be prima facie evidence of violation of this subsection.
- l. Persistent noise not otherwise allowed.

### 3. Exemptions. The following are exempt from the provisions of this section:

- a. Sounds typically associated with residential uses (e.g., children at play, air conditioning and similar equipment in good working order, but not animal and fowl noises in violation of Subsection (2)c., above).



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- b. Sounds typically associated with property maintenance (e.g., domestic power tools not performed by a commercial entity) provided such activities take place between the hours of 7:00 AM and 8:00 PM.
- c. Safety, warning, and alarm devices, including house and car alarms, and other warning devices that are designed to protect the health, safety and welfare, provided such devices are not negligently maintained or operated. The sounding of burglar alarms shall not constitute a violation of this section except after 20 minutes of continuous activation. Further, on or after one year from the effective date of the ordinance from which this section is derived, no owner of a motor vehicle, dwelling or commercial property shall have in operation an audible burglar alarm therein unless such burglar alarm shall be capable of terminating its operation within 20 minutes of its being activated.
- d. The sounding of any horn, bell, whistle, siren or other audible warning device which is operated in compliance with Section 7604 of the California Public Utilities Code, or other state or federal laws governing railroad operations.
- e. The normal operation of public and private schools typically consisting of classes and other school-sponsored activities, such as school bands and school athletic events.
- f. Sound or noise associated with emergencies or emergency work, involving the execution of the duties of duly authorized governmental personnel and others providing emergency response to the general public, including but not limited to, sworn peace officers, emergency personnel, utility personnel, and the operation of emergency response vehicles and equipment.
- g. Tree landscape, and park maintenance activities conducted by the city or a city contractor.
- h. Any activity related to the construction, development, manufacture, maintenance, testing, or operation of any aircraft engine, or of any weapons system or subsystems which are owned, operated, or under the jurisdiction of the United States.
- i. Any other activity to the extent regulation thereof has been preempted by state or federal law or regulations.
- j. Activities or events whose noise is regulated by a city issued permit with conditions that specify the type of noise and hours permitted to operate, such as but not limited to, a special use permit, special event permit, special construction permit.

### *Title 15, Buildings and Construction*

**Chapter 15.04.075. Construction Work Hours:** It shall be the responsibility of anyone engaging in construction or demolition work to restrict the hours of work activity on the site as follows.

- A. No construction equipment shall be operated nor any outdoor construction, non-residential projects or repair work shall be permitted within 600 feet from any occupied residence except

during the hours of 7:00 AM to 8:00 PM, Monday through Friday, and 8:00 AM to 8:00 PM, on Saturday and Sunday.

- B. Construction work hours on residential projects shall be from 7:00 AM to 8:00 PM.
- C. A request for an exception to the permitted construction hours and days may be granted by the chief building inspector for emergency work, to offset project delays due to inclement weather, for 24-hour construction projects, or other similar occurrences.
- D. City projects determined by the director of public works to be emergencies shall be exempt from these provisions.
- E. For construction work hours for earthwork, trenching, concrete or paving see Section 15.12.320.
- F. Interior work which would not create noise or disturbance noticeable to a reasonable person of normal sensitivity in the surrounding neighborhood shall not be subject to these restrictions.

### **3.13.3 SENSITIVE RECEPTORS**

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches, and residences are considered to be more sensitive to noise intrusion than are commercial or industrial activities. Ambient noise levels can also affect the perceived desirability or livability of a development.

The Project site is surrounded by the following land uses:

- **North** – vacant, single-family residential uses, United States Postal Service Office
- **East** – single-family residential uses
- **South** – Highway 12
- **West** – single-story commercial uses, including a 7-Eleven and Chevron fueling station

The Project site is currently an undeveloped lot but is bordered by residential uses along the northern and eastern edge of the proposed Project site.

### **3.13.4 EXISTING NOISE CONDITIONS**

The existing or ambient, noise environment in a project area is characterized by the area's general level of development. Areas which are not urbanized are relatively quiet, while areas which are more urbanized are noisier as a result of roadway traffic, railroad operations, industrial activities, and other human activities.

Existing noise levels in the project vicinity are dominated by traffic noise associated with vehicles on Highway 12. Other sources of noise observed during a site visit included noise associated with landscaping activities, occasional aircraft overflights, birds, barking dogs and human voices.

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Measurements of existing ambient noise levels in the project vicinity were conducted on February 16, 2022. Long-term (24-hour) ambient noise level measurements were conducted at one location (Site LT-1) within the proposed Project site, in the vicinity of existing residential land uses. Site LT-1 was selected as it is representative of existing ambient noise levels in the project vicinity and nearby residential land uses, and it provided a secure location to leave the noise monitoring equipment unattended for a 24-hour period.

Noise monitoring equipment consisted of a Larson-Davis Laboratories Model LDL-820 sound level analyzer equipped with a B&K Type 4176 1/2" microphone. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meter was calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured  $L_{eq}$  noise levels at site LT-1 ranged from a low of 53.7 dB between 1:00 AM and 2:00 PM, to a high of 64.2 dBA between 6:00 AM and 7:00 AM.  $L_{max}$  noise levels at Site LT-1 ranged from 69.9 to 85.1 dBA. Residual noise levels at Site LT-1, as defined by the  $L_{90}$ , ranged from 39.8 to 57.7 dBA. The  $L_{90}$  is a statistical descriptor that defines the noise level exceeded 90 percent of the time during each hour of the sample period. The  $L_{90}$  is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured  $L_{dn}$  value at Site LT-1 during the 24-hour noise monitoring period was 66.5 dB  $L_{dn}$ .

Table 3-14 provides the measured average hourly ambient noise levels at the 24-hour measurement Site LT-1. Noise levels are provided in Table 3-14 in terms of the applicable Suisun City noise performance standards, as provided above in Table 3-13. Table 3-14 also provides the average noise levels for each of the statistical performance standard for both daytime (7:00 AM to 10:00 PM) and nighttime (10:00 PM to 7:00 AM) hours.

**Table 3-14: Average Daytime and Nighttime Noise Level Measurements at Site LT-1**

Time	A-Weighted Decibels (dB), $L_{eq}$ (one-hour average)				
	$L_{max}$	$L_2$	$L_8$	$L_{25}$	$L_{50}$
Average Daytime	78.3	67.2	64.5	61.3	58.8
Average Nighttime	77.4	66.1	61.5	57.2	53.0

Source: WJV Acoustics, Inc. 2022.

### 3.13.4.1 EPA Guidelines

The EPA has established guidelines (Environmental Protection Agency 1973) for assessing the impact of an increase in noise levels. These guidelines have been used as industry standard for several years to determine the potential impact of noise increases on communities. Most people will tolerate a small increase in background noise (up to about 5 dB(A)) without complaint, especially if the increase is gradual over a period of years (such as from gradually increasing traffic volumes). Increases greater than 5 dB(A)

may cause complaints and interference with sleep. Increases above 10 dB(A) (heard as a doubling of judged loudness) are likely to cause complaints and should be considered a serious increase. Table 3-15 defines each of the traditional impact descriptions, their quantitative range, and the qualitative human response to changes in noise levels.

**Table 3-15: EPA Impact Guidelines**

<b>Increase over Existing or Baseline Sound Levels</b>	<b>Impact Per EPA Region Guidelines</b>	<b>Qualitative Human Perception of Difference in Sound Levels</b>
0 dB to 5 dB	Minimum Impact	Imperceivable or Slight Difference
6 dB to 10 dB	Significant Impact	Significant Noticeable Difference – Complaints Possible
Over 10 dB	Serious Impact	Loudness Changes by a Factor of Two or Greater. Clearly Audible Difference – Complaints Likely

### **3.13.5 DISCUSSION**

- a) **Would the project result in generation of 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?**

On-site noise-generating activities associated with the proposed Project would include short-term construction as well as long-term operational noise associated with Project operation. The Project would also generate on-site noise from slowly moving trucks, loading docks and mechanical equipment. These potential impacts are discussed below.

#### **3.13.5.1 Short Term Construction Noise**

Two types of short-term noise impacts could occur during construction from construction crew and material and equipment transport. Construction crew commute and the transport of construction equipment and materials to and away from the Project site would incrementally increase noise levels on access roads leading to the Project site. This increased traffic could be made up of vehicles, medium trucks, and heavy trucks.

Construction activities would include site preparation, grading, building construction, and paving. Each construction stage has its own mix of equipment, and consequently, its own noise characteristics. The various construction operations would change the character of the noise generated at the Project site and therefore, the noise level as construction progresses. The loudest stages of construction include the building construction and grading stages, as the noisiest construction equipment is typically earthmoving and grading equipment.

The construction of the Project would be conducted over the course of approximately 9 months with different types of construction equipment, as described in the Project Description, above. Increases in

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noise levels from construction activities would be temporary and construction activities would follow General Plan policies to reduce construction noise with conditions of approval. Compliance with General Plan Program PHS-1.2 and the City Noise Ordinance would ensure that the proposed Project would not produce excessive noise levels during construction. As such, impacts would remain less than significant and less than the impact disclosed in the General Plan EIR, which was considered to be significant and unavoidable. Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General EIR, and the criteria for requiring further CEQA review are not met.

### **3.13.5.2 Operational Traffic Noise**

Traffic noise depends primarily on vehicle speed (tire noise increases with speed), proportion of medium and large truck traffic (trucks generate engine, exhaust, and wind noise in addition to tire noise), and number of speed control devices, such as traffic lights and stop signs (accelerating and decelerating vehicles and trucks can generate more noise).

Changes in traffic volumes can also have an impact on overall traffic noise levels. For example, it takes 25 percent more traffic volume to produce an increase of only 1 dB(A) in the ambient noise level. For roads already heavy with traffic volume, an increase in traffic numbers could even reduce noise because the heavier volumes could slow down the average speed of the vehicles. A doubling of traffic volume results in a 3 dB(A) increase in noise levels.

Large trucks would access the Project site and loading docks via an ingress/egress point west of the proposed store location, via Highway 12. Trucks would access the loading dock at the rear of the Tractor Supply Company retail center via a designated driveway access. Truck movements would generally occur as close as forty (40) feet from existing residential land uses.

The frequency and times of truck deliveries to the proposed Project site is anticipated to occur approximately twice per week; however, to provide a conservative analysis, it was assumed that there would be between zero and one truck delivery per day, based on the operational characteristics of another Tractor Supply Company retail center, in San Luis Obispo County. Slow-moving delivery truck movements would be expected to produce noise levels in the range of 69 dBA to 73 dBA at a distance of 40 feet. This range assumes all trucks would be nonrefrigerated. The applicable daytime noise level standard is 70 dB. While noise levels associated with truck movements could at times exceed 70 dB at nearby residential land uses, based upon measured ambient noise levels at noise monitoring Site LT-1, it is expected that exterior noise levels near the truck driveway access already experience periodic noise levels exceeding 70 dB. While it can be reasonably assumed that noise levels at the residential land uses located along the northern portion of the truck access route would generally be lower than those measured at monitoring Site LT-1 (due to the increased setback from Highway 12), due to the infrequent nature of truck deliveries (maximum of one per day) and existing ambient noise levels in the Project vicinity, noise levels associated with truck movements on the Project site would not be considered a significant impact during daytime hours.

In order to minimize potential nighttime annoyance and sleep disturbance, it is recommended that all truck deliveries be limited to the daytime hours of 7:00 AM to 10:00 PM. The applicable Suisun City noise

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level standard becomes 5 dB more restrictive during the nighttime hours of 10:00 PM to 7:00 AM, and the risk of annoyance or sleep disturbance is increased within these hours.

### **3.13.5.3 Loading Docks**

The loading dock behind the proposed Tractor Supply Company retail center would be located approximately 50 feet from the closest existing outdoor activity area (backyard) of existing residential land uses. Noise sources typically associated with loading dock activities include truck engines, forklifts, the banging of hand carts and roll-up doors, noise from P.A. systems, and the voices of truck drivers and store employees. Truck engines are typically turned off while trucks are in loading dock areas to reduce noise and save energy.

Based upon these noise level measurements conducted for similar projects, loading dock noise levels would be expected to be in the range of 64 dBA to 82 dBA at a distance of 50 feet. Based upon the findings of the ambient noise survey (see Table 3-14 above), average daytime hourly maximum noise levels were determined to be approximately 78 dB. Such levels already exceed the daytime maximum noise level standard of 70 dB. The General Plan states that if existing ambient noise levels already exceed the applicable noise level standard, the applicable standard becomes the ambient noise level, plus 5 dB. Therefore, based upon measured ambient noise levels and the provisions of the General Plan, the applicable standard would be 83 dB (78 dB plus 5 dB).

As stated above, loading dock activities (corresponding to truck delivery frequency) would occur no more than one time per day. Noise levels associated with loading dock activities vary widely but were calculated to be in the range of approximately 64-82 dB, at the location of the closest nearby residential land uses. The upper limits of this range of noise levels are below 83 dB (the average existing ambient hourly average of 78 dB, plus 5 dB, per the provisions of the General Plan). Therefore, noise levels associated with loading dock activities would not be considered a significant noise impact.

In order to minimize potential nighttime annoyance and sleep disturbance, it is recommended that all loading dock activities be limited to the daytime hours of 7:00 AM to 10:00 PM. The applicable Suisun City noise level standard becomes 5 dB more restrictive during the nighttime hours of 10:00 PM to 7:00 AM, and the risk of annoyance or sleep disturbance is increased within these hours.

### **3.13.5.4 Mechanical Equipment**

It is assumed that the Project would include roof-mounted HVAC units on the proposed building. The heating, ventilating, and air conditioning (HVAC) requirements for the buildings would likely require the use of multiple packaged roof-top units. For the purpose of noise and aesthetics, roof-mounted HVAC units are typically shielded by means of a roof parapet. Reference noise level measurements were conducted at numerous commercial and retail buildings with roof mounted HVAC units, and associated noise levels typically range between approximately 45 dB to 50 dB at a distance of 50 feet from the building façade.

For the proposed Project, the closest residential land uses to any potential roof-mounted HVAC equipment would be located at a minimum setback distance of approximately 100 feet, or greater. Taking

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into account the standard rate of noise attenuation with increased distance from a point source (-6 dB/doubling of distance), noise levels associated with the operation of roof-mounted HVAC units would be approximately 39 dB to 44 dB at the closest sensitive receptor property line. Such levels do not exceed any Suisun City noise level standard or exceed existing (without Project) ambient noise levels.

Based on the above, the Project would not result in generation of 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. Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

**b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?**

During construction of the proposed Project, construction equipment may be used in close proximity to sensitive receptors adjacent to the Project site. Permitted construction hours are between 7:00 AM to 8:00 PM, Monday through Friday, and 8:00 AM to 8:00 PM, Saturday and Sunday. Increases in vibration levels from construction activities would be temporary and construction activities would comply with General Plan Program PHS-1.5, to reduce demolition and construction vibration. With implementation of General Plan Program PHS-1.5, the proposed Project would not produce excessive vibration levels during construction and the impact would be less than significant. Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

**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?**

The Project site is not located within an airport land use plan or within two miles of a public airport or public use airport. The closest airport to the Project site is Travis Air Force Base, located approximately 2.7 miles east of the Project site. Neither is the Project site located within the Travis Air Force Base Noise Contour. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels, and impacts would be less than significant. Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### 3.14 Population and Housing

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XIV. POPULATION AND HOUSING</b> — Would the project:			
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.14.1 ENVIRONMENTAL SETTING

The City's most recent Housing Element, adopted in March of 2015, which includes a Housing Needs Assessment that identifies the existing and projected need for housing in the community in terms of affordability, availability, adequacy, and accessibility, and specifies ways in which the housing needs of existing and future resident populations in the City can be met (City of Suisun City 2015b).

The latest California Department of Finance (DOF) population estimate lists the population, as of January 1, 2022, for Solano County as 447,241 and for the City as 28,896 (DOF 2022). In 2022, DOF estimated 9,523 total housing units in the City, which is approximately 5.8 percent of all units in Solano County (163,820 units). The average household size (persons per household) in the City as of January 2022 was 3.11, which is above the Solano County average of 2.8 (DOF 2022).

As described in the General Plan EIR, implementation of the 2035 General Plan would allow for an added population of 3,900 people, 1,800 new housing units, 4.2 million square feet of nonresidential building space, and 6,840 new jobs. The buildout population and employment assumption in the 2035 General Plan are an estimate of the total development capacity within the Planning Area if all parcels were developed consistent with the General Plan (City of Suisun City 2014).

#### 3.14.2 DISCUSSION

- a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

The General Plan EIR identified that General Plan implementation would involve construction and development of both residential and non-residential land uses. This activity would potentially generate a temporary increase in population and housing demands as a result of construction jobs. The number of construction workers that could be employed locally during implementation is likely to vary based on market demand and overall economic conditions. According to the most current labor data available from



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the U.S. Census Bureau 2021 American Community Survey, 10,186 residents of Solano County were employed in construction (U.S. Census Bureau 2021). This pool of existing residents who are employed in the construction industry, as well as new residents that move to the area for other reasons, may be available during implementation of the 2035 General Plan.

The Project involves the development of a Tractor Supply Company retail center with no additional housing needs. Construction needs for Project implementation include approximately 50 workers during peak construction stages. The construction workforce is anticipated to be local personnel from the City and surrounding areas. The Project would not result in an increase in housing units or increase in residents over the planned increase for the Planning Area and would not result in direct substantial unplanned population growth. The Project would not include the extension of infrastructures or roads that could indirectly induce population growth. Therefore, the Project would not directly or indirectly induce substantial unplanned population growth and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### **b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

The Project site is currently undeveloped. Implementation of the Project would include the construction and operation of a Tractor Supply Company retail center. The Project is not anticipated to result in significant impacts to housing or displacement of people as there are no housing units proposed with implementation of the Project and the Project site is undeveloped. Therefore, the Project would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### 3.15 Public Services

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XV. PUBLIC SERVICES</b> — Would the project:			
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.15.1 ENVIRONMENTAL SETTING

The Suisun City Fire Department (SCFD) provides fire and emergency services within the incorporated areas of the City, including the Planning Area. Currently, the SCFD operates out of one station, Station 47, located within the central portion of the City. The SCFD is mostly volunteer firefighters with one paid Fire Chief and two paid Captains (City of Suisun City 2015).

The Suisun City Police Department (SCPD) provides police service within the City including portions of the Planning Area. The SCPD has one station adjacent to the City Hall and a substation in the eastern portion of the City. SCPD services include: preventing and controlling conduct threatening to life and property; aiding individuals who are in danger of physical harm; protecting constitutional guarantees; facilitating the movement of people and vehicles; assisting those who cannot care for themselves; resolving conflict; identifying potential problems in the community; and creating a feeling of security in the community (City of Suisun City 2015a).

The Fairfield-Suisun Unified School District (FSUSD) oversees the public elementary, middle, and high school system, which is comprised of eight schools serving various grades. The Project site would be served by Crescent Elementary School, located approximately 0.13 mile to the southeast, Suisun Elementary School, located approximately 0.25 mile to the northeast, Crystal Middle School, located approximately 0.80 mile to the southwest, and Armijo High School, located approximately 1.05 mile to the northwest of the Project site (FSUSD 2022). Additionally, there are five private institutions within the Planning Area: Tutor Time Learning Center, located approximately 4.0 miles to the northwest; Fairfield KinderCare, located approximately 3.0 miles to the west; Solano Christian Academy, located

approximately 2.2 miles to the northwest; Fairfield Christian School, located approximately 1.7 miles to the north; and Holy Spirit School, located approximately 1.1 miles to the northwest.

Parks and recreational services in the City are provided by the City's Recreation, Parks, and Marina Department. For consistency, the City uses the Quimby standard of 3 to 5 acres per 1,000 residents to ensure adequate amounts of community and neighborhood park and recreational space is available. According to the City's General Plan EIR, the City currently has approximately 95.7 acres of active parkland, including 47.7 acres of neighborhood parkland in 10 individual parks and 48 acres of community parkland in 2 parks. This is a ratio of approximately 3.4 acres for every 1,000 residents exceeds the National Recreation Association standards of 2.5 acres per 1,000 residents and is within the range of the Quimby Act standards (City of Suisun City 2015a).

### 3.15.2 DISCUSSION

**a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:**

**i) Fire protection?**

The Project site is located in an area already served by SCFD and the site has existing demand for fire protection services. Implementation of the Project would not increase the demand for fire protection services at the site as it wouldn't increase the residential population in the vicinity and the Project would be constructed and designed in accordance with the California Fire Code and the City and SCFD's standards and requirements. The Project would be equipped with fire sprinkler systems, fire alarm systems, and would provide adequate emergency access to the site for fire personnel and equipment. Additionally, two new fire hydrants are proposed to be constructed as part of the Project. One fire hydrant is proposed to be constructed on the northeastern corner of the Project site adjacent to the eastern delivery and alleyway. A second fire hydrant is proposed to be constructed in the southern portion of the Project site along the southeastern side of the proposed parking lot. Both new fire hydrants would be supplied and connected to the main water line through two, newly constructed 6-inch fire water lines. Incorporation of fire protection systems into the Project design would minimize the risk of fire at the site, decreasing the overall demand for fire protection at the site. Therefore, the Project would not require the construction of new or physically altered fire protection facilities and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**ii) Police protection?**

The Project site and adjacent properties are already served by SCPD. However, the Project would increase the demand for police protection as implementation of the Project would increase the number of people visiting the commercial—retail business from existing conditions. Due to the Project being located in an area that is already served by SCPD, the Project is not expected to require the construction of new

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or expansion of existing police protection facilities. The Project would not significantly increase demand requiring the need for new or physically altered police protection facilities and therefore, impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### **iii) Schools?**

Development of the Project is not anticipated to increase population sizes within the City, and therefore, would not generate school aged children within the FSUSD boundaries. The General Plan EIR identifies that new development projects within the Planning Area would be assessed developer fees in accordance with SB 50 (1998) (City of Suisun City 2014). These developer fees would be used to finance new schools and equipment and to reconstruct existing facilities to maintain adequate housing for FSUSD students. Therefore, the Project would pay its fair share of school impact fees as required by SB 50 to ensure that impacts to school facilities are less than significant. Therefore, the Project would not require the construction of new or altered school facilities and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### **iv) Parks?**

The Project is not anticipated to increase the demand on existing parks in the vicinity of the Project site. As the Project primarily consists of the construction and operation of a commercial-retail center, it should not directly or indirectly increase populations within the City and adjacent areas. The Project site is currently an undeveloped vacant lot, and implementation would not result in the loss of open space, parks, or recreation facilities. The General Plan EIR identified a City requirement that requires new development to provide parklands to meet the demands of new residences or pay in-lieu fees, which would aid in providing an increased amount of parkland such that the likelihood of overuse by new residents and accelerated physical deterioration of existing facilities would be reduced. In-lieu fees provided by new development could also be used by the City to improve, expand, and maintain existing parks to ensure accelerated deterioration does not occur (City of Suisun City 2014). Additionally, the Project would comply with General Plan Policy CFS-3.9 which allows the City to seek to capitalize on opportunities in new development, reinvestment projects, and public infrastructure projects to develop and/or restore multi-benefit corridors that can connect pedestrians and cyclists with local destinations, provide a buffer between the railroad or high-volume roadways and noise-sensitive uses, conserve water and other resources, improve aesthetics, convey and filter stormwater runoff, accommodate community gardens, and provide other useful public purposes. Additionally, this project serves that purpose by increasing connectivity to the Central County Bikeway. Therefore, the Project would not cause substantial impact to existing parks or facilities, nor required the construction of new parks and recreational facilities. Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### **v) Other public facilities?**

Development of the Project is not anticipated to impact other public services within the City including libraries. As the Project primarily consists of the construction and operation of a commercial-retail center,

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it is not anticipated to directly or indirectly increase populations within the City and adjacent areas. The Project is not anticipated to substantially increase demand for other public facilities and would not result in the need for new or altered public facilities. Therefore, Project impacts would be less than significant and would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### 3.16 Recreation

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XVI. RECREATION</b>			
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.16.1 ENVIRONMENTAL SETTING

Parks and recreational services in the City are provided by the City's Recreation, Parks, and Marina Department. According to the City's General Plan EIR, the City currently has approximately 95.7 acres of active parkland, including 47.7 acres of neighborhood parkland in 10 individual parks and 48 acres of community parkland in 2 parks. This ratio of approximately 3.4 acres for every 1,000 residents exceeds both the National Recreation Association standard of 2.5 acres per 1,000 residents and the City's adopted standard of 3.0 acres per 1,000 residents (City of Suisun City 2015a).

Parks in the City are classified in several subgroups: mini parks, neighborhood parks, community parks, special use parks, and active land on public school property. Additionally, the Suisun City Marina provides 150 rental berthing slops with guest docks and boat launch ramps for public use. The Suisun Marina area from the fishing dock to the turnaround basin is dredged to allow deep water access for most recreational boats. Connected to the marina, the Suisun Channel and Suisun Marsh provide additional recreational areas for fishing; sightseeing and bird watching; and areas for boating, cruising, water skiing, jet skiing, kayaking, and other water-related activities (City of Suisun City 2015a).

#### 3.16.2 DISCUSSION

- a) **Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**
- b) **Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?**

As discussed in Section 3.16.1, the City has a current parkland ratio of 3.4 acres of parkland per 1,000 residents and is therefore exceeding the adopted parkland service standard of 3.0 acres of parkland per 1,000 residents. The Project is not anticipated to increase the demand on parks and recreation facilities in the City with the development of the commercial-retail center. The Project would not result in increased use of parks or recreational facilities such that substantial physical deterioration would occur or be

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accelerated, and the Project would not include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Therefore, impacts would be less than significant, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### 3.17 Transportation

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>V. TRANSPORTATION</b> — Would the project:			
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.17.1 ENVIRONMENTAL SETTING

The evaluation of transportation impacts is based, in part, on a Project-specific technical study, “Tractor Supply Company – Suisun City, California, Focused Traffic Study/VMT Assessment,” by Rick Engineering Company, January 2023, included as Appendix G of this document.

The Project site is bounded by Highway 12, to the south, the existing Sunset Center retail shopping center to the west, and existing single-family residences to the north and east. The Project site is currently vacant.

The Project will take access from an existing driveway along SR 12 that currently serves two existing gasoline stations and that will serve the future Project site. The existing Project driveway is currently restricted to only right-turn in/right-turn out access, and no access changes are proposed with the Project. Access to the Project site will also be provided from an existing right-turn in/right-turn out driveway along Sunset Avenue that currently provides secondary access to the existing Sunset Center retail shopping center.

##### 3.17.1.1 Existing Roadway and Intersection Conditions

Highway 12 is built as a divided State Highway facility oriented in a general east-west direction, with two travel lanes in each direction of travel. On-street parking is prohibited along Highway 12. Pedestrians and bicycles are allowed within the Central County Bikeway that is currently provided along the north side of Highway 12, which also runs along the project frontage. The posted speed limit on Highway 12 is 50 miles per hour (MPH).

Sunset Avenue is built as a divided arterial facility oriented in a general north-south direction, with two travel lanes in each direction north of Highway 12. Sunset Avenue transitions to Grizzly Island Road



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south of Highway 12 in which one travel lane in each direction is provided. On-street parking is prohibited along Sunset Avenue. Sidewalk for pedestrians and dedicated bike lanes are provided on both sides of the road within the Project vicinity. The posted speed limit on Sunset Avenue is 35 MPH north of Highway 12, and the posted speed limit on Grizzly Island Road south of Highway 12 is 25 MPH.

Highway 12 / Sunset Avenue-Grizzly Island Road Intersection is currently built as a signalized four-legged intersection. The eastbound approach (Highway 12) currently provides two left-turn lanes, two through lanes, and one right-turn lane. The westbound approach (Highway 12) currently provides one left-turn lane, two through lanes, and one right-turn lane. The northbound approach (Grizzly Island Road) currently provides one left-turn lane, one through lane, and one right-turn lane. The southbound approach (Sunset Avenue) currently provides one left-turn lane, one shared left-turn/through lane, and two right turn lanes. Protected pedestrian crossings are currently provided across the north, south and east legs of the intersection.

Highway 12 / Existing Project Driveway Intersection is currently built along the north side of Highway 12. The southbound approach (Existing Project Driveway) is stop controlled with one travel lane restricted to right-turns only. The westbound approach (Highway 12) is uncontrolled and currently provides two through lanes and one right-turn lane. The eastbound direction of Highway 12 is not part of the intersection and is separated from the westbound lanes by a center median approximately 45 feet in width. Lawler Center Drive is located along the south side of Highway 12 directly across from the existing Project driveway and the intersection is also restricted to right-turn in/right-turn out access.

Sunset Avenue / Sunset Center South Entrance Intersection is currently built as an unsignalized three-legged right-in/right-out intersection. The westbound approach (Sunset Center South Entrance) is stop controlled and currently provides one right-turn lane. The northbound approach (Sunset Avenue) currently provides one through lane and one shared through/right-turn lane. The southbound approach (Sunset Avenue) currently provides two through lanes.

Sunset Avenue / Sunset Center Main Entrance Intersection is currently built as a signalized four-legged intersection. The eastbound approach (Heritage Center Main Entrance) currently provides one shared left/through lane, and one right-turn lane. The westbound approach (Sunset Center Main Entrance) currently provides one left-turn lane, and one shared through/right-turn lane. The northbound approach (Sunset Avenue) currently provides one left-turn lane, one through lane, and one shared through/right-turn lane. The southbound approach (Sunset Avenue) currently provides one left-turn lane, one through lane, and one shared through/right-turn lane. Protected pedestrian crossings are currently provided across all four legs of the intersection.

The proposed Project does not propose to amend or adjust the roadway classifications or network as shown in the General Plan.

### **3.17.1.2 Transit and Rail Services**

The Planning Area is served by both Solano Transportation Authority (STA), Fairfield Transit, and Capitol Corridor (operated by the Capitol Corridor Joint Powers Authority). The STA is responsible for transportation planning in Solano County and manages the Solano Express intercity bus service

throughout Solano County. STA also provides paratransit service to those individuals who cannot independently use the regular bus service. The Solano Express Blue Line provides express bus service connecting the City to Sacramento to the north and Walnut Creek to the south, with a stop located at Suisun Valley Road and Kaiser Drive. The City relies on a new transportation system referred to as a “micro-transit service”. Rather than running a fixed route with a large bus, the City’s new micro-transit service provides a more personalized door-to-door service. The micro-transit service offers pick-up and drop-off to any location within the City limits, as well as to and from nine locations in Fairfield. The smaller micro-transit buses are ADA accessible and more efficient to operate and maintain, compared to the previous public transportation service. Greyhound also has a stop for bus trips across the state and the country, from the Suisun-Fairfield Train Station. Rail service to the City is provided by Capitol Corridor, departing from the Suisun-Fairfield Station, which runs between Sacramento and San Jose, with many stops in between.

### **3.17.1.3 Bicycle and Pedestrian Facilities**

The STA’s Solano County Active Transportation Plan, Suisun City, provides an overview of the active transportation network, consisting of bicycle and pedestrian infrastructure working together to provide mobility options for those that live, work, study or play in the City. Pedestrian facilities are located throughout the Planning Area, primarily provided by sidewalks and both paved and unpaved recreational trails. Pedestrian facilities (i.e., sidewalks, crosswalks, and pedestrian signals) are located throughout the Planning area. Sidewalks are of varying width and physical conditions.

There are existing and planned bicycle facilities throughout the Planning Area and the Project vicinity. With a City-wide roadway network of 87 miles, approximately 14 miles are designated as bicycle facilities, including seven lane miles of multi-use paths, seven miles of bicycle lanes and a short bicycle route. The Central County Bikeway runs along the southern border of the Project site. As a Class I multiuse path, it can be used by both pedestrians, bicyclists and other non-motorized modes of transportation. Other existing bike paths/bikeways are the McCoy Creek Path to the east and along Sunset Avenue to the west.

The proposed Project would not block, remove, or create barriers for pedestrians or bicyclists, but rather would enhance the pedestrian network by improving current conditions along S Highway 12, to the south of the Project site.

## **3.17.2 REGULATORY SETTING**

### **3.17.2.1 State**

California Department of Transportation

Caltrans is responsible for planning, designing, constructing, operating, and maintaining all state-owned roadways. The state facilities providing regional access to and from the Project site is U.S. 101, and State Route 82.

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### Senate Bill 743

Updated CEQA guidelines have gone into effect statewide that include sections created by Senate Bill 743. The amended CEQA guidelines (Section 15064.3) recommends the use of Vehicle Miles Traveled (VMT) as the primary metric to identify a transportation impact for land use and transportation projects. Generally, SB 743 moves away from using delay-based level-of-service (LOS) as the primary metric for identifying a project's significant impact within CEQA, to instead use VMT.

SB 743 required the Governor's Office of Planning and Research (OPR) to establish recommendations for identifying and mitigating transportation impacts within CEQA. In December 2018, OPR released the Final Technical Advisory (OPR's Technical Advisory) that provides guidance and recommendations for local agencies (OPR 2018). While OPR's Technical Advisory provides recommendations on VMT thresholds and methodologies, OPR's Technical Advisory allows for public agencies to establish VMT thresholds and methodologies for their jurisdiction.

The screening criteria is generally consistent with OPR's Technical Advisory recommendations and is based on factors such as project location, project size, and project type. More specifically, categories include transit priority areas screening, affordable housing screening, small project screening, locally serving public facility, and neighborhood serving retail as shown in Table 3-16.

**Table 3-16: Project Screening and Thresholds**

Category	Criteria/Screening	Threshold
Transit Priority Areas Screening (TPA)	Projects located within 0.5-mile walkshed around major transit stop or within 0.25-mile walkshed around high-quality transit corridors generally reduce VMT and therefore can be screened out from completing a full VMT analysis.	If the project is within 0.5-mile walkshed around major transit stop or within 0.25-mile walkshed around high-quality transit corridors, the project is assumed to have a less than significant impact. The project should generally also meet the following criteria: <ul style="list-style-type: none"><li>• FAR <math>\geq</math> 0.75</li><li>• Total square footage <math>\leq</math> 500,000</li><li>• Not provide more parking than required by zoning code</li><li>• Be consistent with the applicable Sustainable Communities Strategy</li><li>• Maintain or increase existing affordable units</li><li>• Less than significant levels of VMT due to project specific or location specific information</li></ul>
Affordable Housing Screening	Affordable housing in infill locations can be screened out from completing a full VMT analysis.	If the project is comprised of 100% restricted affordable residential units and is located in an infill location, and within half a mile of transit stop then the project is assumed to have a less than significant impact.

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Category	Criteria/Screening	Threshold
Small Project Screening	Small non-retail projects can be screened out from completing a full VMT analysis.	If the project generates less than 150 trips per day, which allows up to 15 single family units, 20 multi-family units, 15,000 sf of office, or 20,000 sf of industrial, is assumed to have a less than significant impact.
Locally Serving Public Facility Screening	Locally serving public facilities can be screened out from completing a full VMT analysis.	If the project includes locally serving public facilities, then it is assumed to have a less than significant impact.
Neighborhood-Serving Retail Project Screening	Retail projects that are neighborhood serving can be screened out from completing a full VMT analysis.	A retail project that serves immediate neighborhoods that are 30,000 sf or less and have a similar use within 3 miles is assumed to have a less than significant impact. For Day care centers of 15,000 sf or less is assumed to have a less than significant impact.

### 3.17.2.2 Local

#### City of Suisun City 2035 General Plan

The following lists goals and policies from the Suisun City 2035 General Plan and General Plan EIR pertaining to transportation that are applicable to the Project.

Goal T-1: Provide an efficient, safe transportation system that is free of barriers to travel by all segments of Suisun City's population.

Program T-1.3: Transportation Funding and Implementation. The City will maintain and implement transportation plans, including the Capital Improvement Program. The City will collaborate with Caltrans, STA, MTC, Solano County, Fairfield, and other relevant agencies to plan transportation improvements with the goal of maintaining or increasing the level of regional funding for transportation improvements in the Planning Area.

Policy T-1.6: The City will design and operate streets and intersections to enable safe access for all users, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.

Policy T-1.8: The City will consult with other agencies, such as the Solano Transportation Authority, Solano County, Caltrans, and the Metropolitan Transportation Commission on assessing travel demand impacts to facilities managed by other agencies. The City will collaborate as a part of a coordinated regional program on collection of impact fees for regional transportation improvements.

Goal T-2: Provide a well-connected transportation system that offers residents and visitors a choice of routes to reach their destinations.

Policy T-2.1: The City will require and maintain an interconnected street network with short blocks to support pedestrian, bicycle, transit, automobile, and emergency access.

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Policy T-2.2: New streets shall be arranged in a grid or other highly connected pattern so that pedestrians, bicyclists, and drivers have multiple, direct routes to nearby destinations.

Policy T-2.3: New developments shall be highly connected internally and connected with adjacent developed areas.

Policy T-2.4: The City will support improvements that connect existing gaps in the transportation system, and that provide visual cues directing users onto through streets.

Policy T-2.5: The City prefers direct connections that allow cars, bikes, and pedestrian through traffic over “doglegs” or “T” intersections.

Policy T-2.7: The City will support improvements to regional connectivity, including connections to Fairfield, SR 12, Jepson Parkway, and I-80 that reduce trip lengths and provide redundant routes for emergency responders.

Policy T-2.8: The City will use unified streetscapes and signage to create visual links for pedestrians, cyclists, and motorists and communicate routes that connect to the Downtown Waterfront Area.

Goal T-3: Manage travel demand in order to reduce up-front and ongoing cost of transportation infrastructure, enhance local mobility, improve air quality, and improve the local quality of life.

Program T-3.1: Trip Reduction Program. As resources are available, Suisun City will adopt a trip reduction ordinance, consistent with the 2035 General Plan and coordinated with the City’s impact fees/Offsite Street Improvement Program.

Policy T-3.1: The City will collaborate with other local, regional, and state agencies, as well as employers to encourage carpooling, carpool parking, flexible work schedules, ridesharing, and other strategies to reduce commute period travel demand.

Policy T-3.2: The City will encourage new developments and public facility investments designed to minimize vehicle trips and vehicle miles traveled.

Policy T-3.3: The City will support programs to provide education, information, facilities, and incentives to encourage City employees to walk, bike, or take transit to work, as funding is available.

Policy T-3.4: The City’s analytical methods, review requirements, impact fees, and investments will be designed and implemented, in part, to reduce VMT by Suisun City residents and to local commercial and employment uses.

Policy T-3.5: The City’s Traffic Impact Fee Program will be designed to provide incentives for new developments that are located and designed to reduce vehicular travel demand.

Policy T-3.6: New developments that would accommodate 100 full- or part-time employees or more are required to incorporate feasible travel demand management strategies, such as contributions to transit/bike/pedestrian improvements; flextime and telecommuting; a carpool program; parking management, cash out, and pricing; or other measures, as appropriate, to reduce travel demand.

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Goal T-6: Maintain a multimodal transportation system for the safe and efficient movement of automobiles and trucks, pedestrians, bicyclists, and public transit users.

Policy T-6.1: The City will facilitate construction and maintenance of an accessible, safe, pleasant, convenient, and integrated bicycle and pedestrian system that connects local destinations and surrounding communities. The City will support development of a safe and accessible trail network connected to the on-street bicycle and transportation system that provides transportation and recreational opportunities for Suisun City residents and employees.

Policy T-6.2: The City will require design, construction, operation, and maintenance of “complete streets” that provide safe and convenient access and travel for pedestrians, bicyclists, motorists, and transit users of all ages and abilities.

Policy T-6.3: The City will proactively coordinate with regional transportation and transit agencies to enhance the local transportation network in a way that encourages bicycling, walking, and transit use.

Policy T-6.4: The City will collaborate with public transit agencies to provide a safe, efficient, comprehensive and integrated transit system. The City will prioritize improvements to the local bus system that connect with passenger train service.

Policy T-6.6: Bicycle parking shall be provided near destination land uses, such as retail, commercial and public services, parks, schools, and transit stops.

Policy T-6.9: The City will encourage construction of transit amenities, such as benches, information systems, shelters, and bike racks near transit stops.

Policy T-6.10: The City will support improvements designed to encourage transit, such as traffic signal priority, bus queue jump lanes at intersections, exclusive transit lanes, and other techniques, as appropriate.

Policy T-6.12: New building frontages shall be oriented to pedestrians. Primary pedestrian entries to nonresidential buildings should be from the sidewalk, not from parking areas.

Policy T-6.13: New developments shall provide pathways that link to sidewalks, trails, streets, and adjacent transit stops.

Goal T-7: Maintain an adequate supply of parking and avoid oversupply of parking that would unnecessarily increase urban water runoff, require expensive construction and maintenance, and discourage alternatives to vehicular travel.

Policy T-7.1: Parking shall be located and designed to facilitate convenient pedestrian access to and from buildings, trails, sidewalks, and transit stops.

Policy T-7.4: The City supports shared parking between multiple uses to the extent possible and will provide incentives for property owners to share underused off-street parking.

Policy T-7.6: The City will reduce parking requirements for mixed-use developments, for developments providing shared parking, for developments within ¼ mile of a bus stop or the train station, and for developments that incorporate travel demand measures.

Policy T-7.7: Unless unusual circumstances warrant, the City discourages construction of new surface parking spaces in amounts greater than required by City standards.

Policy T-7.8: New developments shall break up and distribute any proposed surface parking and shall provide adequate landscaping to achieve at least 50 percent shading of parking areas at maturity.

Policy T-7.9: The City may waive or relax off-site parking requirements for infill and affordable housing projects that use shared parking, on-street parking, and techniques to reduce vehicular travel demand.

### **3.17.3 DISCUSSION**

#### **a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?**

The proposed Project does not conflict with the General Plan, or with any program, plan, ordinance, or policy addressing the circulation system. The proposed Project does not propose to amend or adjust roadway classifications, roadway network, transit routes, or bicycle networks as identified in the General Plan and General Plan EIR. Pedestrian movement would be maintained and improved in the area, with Project site access improvements proposed to include the development of two additional sidewalk connections on the south side of the Project site, to connect to the existing sidewalk along the Central County Bikeway to the south of the Project site. Site access improvements would not cause any conflicts with other improvements planned for the area.

During construction, existing and future bicycle facilities in the Project site would not be affected by proposed Project-related construction activity except for limited circumstances. Therefore, the proposed Project construction would not cause a conflict with a program, plan, ordinance, or policy related to the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Therefore, the proposed Project is consistent with the General Plan and would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

#### **b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?**

As required by CEQA, a VMT screening assessment was conducted for the proposed Project in accordance with the City of Suisun City Resolution No. 2020-122, which defers to the VMT screening criteria that is suggested in the OPR Technical Advisory on Evaluating Transportation Impacts in CEQA (December 28, 2018).

The VMT screening criteria in the OPR Technical Advisory that would be applicable to the proposed Project is the Local-Serving Retail screening criteria for retail uses. The OPR Technical Advisory indicates

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that local-serving retail developments typically have a building or store size under 50,000 square-feet and are generally presumed to have a less than significant impact.

The size of the proposed Project retail building is approximately 22,135 square-feet; therefore, the size of the proposed Project does not exceed the Local-Serving Retail screening threshold of 50,000 square feet and is presumed to have a less than significant impact without conducting a detailed VMT analysis.

Trip generation estimates for the proposed Project were prepared using standardized Institute of Transportation Engineers (ITE) 11th Edition trip generation rates includes Tractor Supply Company retail center land use (ITE Land Use Code 810), but only the PM peak hour trip rate is provided. It was estimated that a hardware store (ITE Land Use Code 816) would generate a similar number of trips to a tractor supply store, and the daily and AM peak hour trip rates for a hardware store were used to calculate the daily and AM peak hour trip generation for the proposed Tractor Supply Company retail center, which was accepted by City of Suisun City staff.

Based on the ITE daily and AM peak hour trip rates for Land Use Code 816 (Hardware Store), and the ITE PM peak hour trip rate for Land Use Code 810 (Tractor Supply Company retail center), the project is estimated to generate 180 ADT, with 19 trips during the AM peak hour (10 inbound/9 outbound) and 31 trips during the PM peak hour (15 inbound/16 outbound) on a typical weekday, as shown in Table 3-17.

**Table 3-17: Project Trip Generation Summary**

Land Use	Amount	Unit	AM Peak Hour			PM Peak Hour		
			Total (per unit)	Inbound (% AM)	Outbound (% AM)	Total (per unit)	Inbound (% PM)	Outbound (% PM)
Trip Generation Rates								
Hardware Store	8.07	KSF	T=0.75(x) +1.92	54%	46%	-	-	-
Tractor Supply Store		KSF	-	-	-	1.40	47%	53%
Forecast Project Generated Rates								
Tractor Supply Store	22.135	KSF	19	10	9	31	15	16

Source: Rick Engineering Company; ITE 11<sup>th</sup> Edition *Trip Generation Manual* (2021)

KSF = thousand square feet

### Project Trip Distribution Assignment

Trips were manually distributed from the Project site based on the proposed land use and the existing roadway network. It was assumed that 55 percent of Project trips would distribute to/from Highway 12 west of the Highway 12/Sunset Avenue-Grizzly Island Road intersection, that 30 percent of the Project



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trips would distribute to/from Highway 12 east of the Project site, and that 15 percent of the Project trips would distribute to/from Sunset Avenue north of the Sunset Center retail shopping center.

Due to the existing Project driveway on Highway 12 being currently restricted to only right-turn in/right-turn out access, it was assumed that 55 percent of the inbound Project trips would enter the Project site via the unsignalized south entrance of the Sunset Center retail shopping center on Sunset Avenue, and 13 percent of the inbound Project trips would enter the Project site via the signalized main entrance of the Sunset Center retail shopping center on Sunset Avenue. It is also assumed that a small percentage (two percent) of the Project trips would access the Project site via a secondary driveway to the Sunset Center retail shopping center on Merganser Drive. It was assumed that 90 percent of the outbound Project trips would exit the Project site at the existing Project driveway on Highway 12, which includes 30 percent of the Project trips making a westbound to eastbound U-turn maneuver at the signalized Highway 12 / Sunset Avenue-Grizzly Island Road intersection, and the remaining 10 percent of Project trips are anticipated to use the Sunset Center retail shopping center access driveways along Sunset Avenue and Merganser Drive.

### Intersection Level of Service Operations Analysis

LOS were evaluated at the study intersections during the weekday AM and PM peak hours under existing and existing plus Project conditions. The AM peak hour intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 7:00 AM and 9:00 AM. The PM peak hour intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 4:00 PM and 6:00 PM.

Intersection operations were analyzed with SYNCHRO 11 software (Trafficware) utilizing the methodologies outlined in the Highway Capacity Manual 6th Edition (HCM 6). Synchro reports delays, which correspond to a particular LOS, to describe the overall operation of an intersection.

Table 3-18 and Table 3-19 display the LOS analysis results for the study intersections under existing and existing plus Project conditions during the AM and PM peak hours, for a typical weekday and for a Friday, respectively.

**Table 3-18: Intersection Operations Summary**

Intersection	Control Type	Existing Conditions				Existing Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1. Highway 12/Existing Project Driveway	OWSC	15.5	C	12.5	B	15.8	C	12.7	B
2. Highway 12/Sunset Avenue-Grizzly Island Road	Signal	40.4	D	36.7	D	40.9	D	37.0	D

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Intersection	Control Type	Existing Conditions				Existing Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
3. Sunset Avenue / Sunset Center South Entrance	OWSC	9.4	A	12.1	B	9.4	A	12.2	B
4. Sunset Avenue / Sunset Center Main Entrance	Signal	10.4	B	12.7	B	10.5	B	12.7	B

Source: Rick Engineering Company

Notes: OWSC – one-way stop control

<sup>1</sup> Delay is measured in seconds per vehicle. Delay and LOS being reported for the OWSC control type are taken from the movement with the worst delay.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

As shown in Table 3-18, the study intersections currently operate at an acceptable LOS D or better during the peak hours and would continue operating at an acceptable LOS D or better with the addition of Project traffic to the existing traffic volumes.

**Table 3-19: Friday Intersection Operations Summary**

Intersection	Control Type	Existing Conditions				Existing Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1. Highway 12/Existing Project Driveway	OWSC	13.3	B	12.4	B	13.4	B	12.6	B
2. Highway 12/Sunset Avenue-Grizzly Island Road	Signal	23.6	C	35.0	D	23.7	C	35.3	D
3. Sunset Avenue / Sunset Center South Entrance	OWSC	9.6	A	11.5	B	9.6	A	11.6	B
4. Sunset Avenue / Sunset Center Main Entrance	Signal	10.3	B	12.7	B	10.3	B	12.7	B

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Intersection	Control Type	Existing Conditions				Existing Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS

Source: Rick Engineering Company

Notes: OWSC – one-way stop control

<sup>1</sup> Delay is measured in seconds per vehicle. Delay and LOS being reported for the OWSC control type are taken from the movement with the worst delay.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

As shown in Table 3-19, the study intersections currently operate at an acceptable LOS D or better during the peak hours on a Friday and would continue operating at an acceptable LOS D or better with the addition of Project traffic to the existing Friday traffic volumes.

### Intersection Queuing Analysis

A queuing analysis was conducted during the peak hours under existing and existing plus Project conditions to determine if the existing storage lengths of the left-turn and right-turn lanes of the study intersections to which Project trips are added can accommodate the existing traffic volumes and the additional trips generated by the proposed Project. The queuing analysis results are based on the 95<sup>th</sup> percentile queue lengths in feet for each turning movement or approach.

The SimTraffic application within the SYNCHRO 11 software program was used to conduct the queuing analysis for the study intersections. The results of the queuing analysis under existing and existing plus Project conditions for a typical weekday are displayed in Table 3-20. The results of the queuing analysis under existing and existing plus Project conditions for Friday are displayed in Table 3-21.

As shown in Table 3-20 for the weekday queuing analysis, the AM peak hour 95<sup>th</sup> percentile queue length of the southbound exclusive left-turn lane (142 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection is currently accommodated within the existing storage length (150 feet), but the PM peak hour 95<sup>th</sup> percentile queue length (190 feet) currently exceeds the existing storage length by 40 feet, or approximately two vehicle lengths. The existing storage length of the adjacent southbound shared left-turn/through lane (385 feet) currently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 182 feet, PM: 201 feet) during the weekday peak hours.

With the addition of Project trips to the existing weekday traffic volumes, the 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane (AM: 146 feet, PM: 189 feet) and adjacent southbound shared left-turn/through lane (AM: 180 feet, PM: 197 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection are shown to be approximately the same as existing conditions during the weekday peak hours.

Table 3-20 shows that the throat length (140 feet) of the existing Project driveway on Highway 12 currently accommodates the weekday 95<sup>th</sup> percentile queue lengths (AM: 61 feet, PM: 43 feet) during the peak hours on the southbound right-turn approach at the Highway 12 / Existing Project Driveway

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intersection during the peak hours. With the addition of Project trips to the existing weekday traffic volumes, the Highway 12 existing Project driveway throat length would continue to accommodate the 95<sup>th</sup> percentile queue lengths (AM: 131 feet, PM: 46 feet) during the weekday peak hours.

Table 3-20 also shows that the weekday AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 56 feet, PM: 61 feet) and shared thru/right-turn lane (AM: 69 feet, PM: 101 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection both currently exceed the existing driveway throat length (30 feet). With the addition of Project trips to the existing weekday traffic volumes, the AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 56 feet, PM: 62 feet) and shared thru/right-turn lane (AM: 75 feet, PM: 96 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection are anticipated to remain approximately the same as existing weekday conditions. It should be noted that vehicles are able to stack into the parking aisle that extends from the driveway entrance into the Sunset Center retail shopping center. This parking aisle provides approximately 240 feet of space to sufficiently accommodate the 95<sup>th</sup> percentile queue lengths.

Lastly, as shown in Table 3-20, the existing storage length (170 feet) of the southbound left-turn lane of the Sunset Avenue / Sunset Center Main Entrance driveway intersection sufficiently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 56 feet, PM: 88 feet) during the weekday peak hours under existing plus Project conditions.

**Table 3-20: Weekday Queuing Analysis Summary**

Intersection	Lane/ Movement	No. of Lanes/ Storage Length (feet)	Existing Conditions				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)
1. Highway 12 / Existing Project Driveway	SB Right	1 / 140' <sup>1</sup>	74	61'	52	43'	82	131'	66	46'
	WB Right	1 / 300'	120	6'	99	-	123	84'	104	-
2. Highway 12 / Sunset Avenue- Grizzly Island Road	SB Left	1 / 150'	116	142'	154	190'	116	146'	154	189'
	SB Shared Left/Thru	1 / 385 <sup>2</sup>	116	182'	155	201'	116	180'	155	197'
	EB Left	2 / 500	242	205'	538	442'	248	190'	546	437'
	WB Right	1 / 390	101	303'	148	127'	101	345'	149	88'
3. Sunset Avenue / Sunset Center South Entrance	WB Right	1 / 110' <sup>1</sup>	55	50'	62	57'	55	54'	63	55'
4. Sunset Avenue / Sunset	SB Left	1 / 170'	66	64'	91	90'	67	56'	93	88'

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Intersection	Lane/ Movement	No. of Lanes/ Storage Length (feet)	Existing Conditions				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)
Center Main Entrance	WB Left	1 / 30 <sup>1</sup>	95	<b>56'</b>	104	<b>61'</b>	95	<b>56'</b>	104	<b>62'</b>
	WB Shared Thru / Right	1 / 30 <sup>1</sup>	24	<b>69'</b>	59	<b>101'</b>	24	<b>75'</b>	59	<b>96'</b>

Source: Rick Engineering Company

Notes: 95<sup>th</sup> percentile queue lengths shown from SimTraffic queuing analysis reports.

Queue lengths exceeding turn bay storage lengths indicated in **bold**.

<sup>1</sup> Existing driveway throat length.

<sup>2</sup> Storage length is the distance from the stop bar at Sunset Avenue/Highway 12 intersection to the Sunset Avenue/Sunset Center Main Entrance intersection.

Table 3-21 shows that for the Friday queuing analysis, the AM peak hour 95<sup>th</sup> percentile queue length of the southbound exclusive left-turn lane (77 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection is currently accommodated within the existing storage length (150 feet), but the PM peak hour 95<sup>th</sup> percentile queue length (196 feet) currently exceeds the existing storage length by 46 feet, or approximately two vehicle lengths. The existing storage length of the adjacent southbound shared left-turn/through lane (385 feet) currently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 123 feet, PM: 208 feet) during the Friday peak hours.

With the addition of Project trips to the existing Friday traffic volumes, the 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane (AM: 92 feet, PM: 192 feet) and adjacent southbound shared left-turn/through lane (AM: 132 feet, PM: 203 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection are shown to be approximately the same as or slightly longer than existing conditions during the Friday peak hours.

Table 3-21 shows that the throat length (140 feet) of the existing Project driveway on Highway 12 currently accommodates the Friday 95<sup>th</sup> percentile queue lengths (AM: 44 feet, PM: 49 feet) during the peak hours on the southbound right-turn approach at the Highway 12 / Existing Project Driveway intersection during the peak hours. With the addition of Project trips to the existing Friday traffic volumes, the Highway 12 existing Project driveway throat length would continue to accommodate the 95<sup>th</sup> percentile queue lengths (AM: 49 feet, PM: 53 feet) during the Friday peak hours.

Table 3-21 also shows that the Friday AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 56 feet, PM: 63 feet) and shared thru/right-turn lane (AM: 67 feet, PM: 145 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection both currently exceed the existing driveway throat length (30 feet). With the addition of Project trips to the existing Friday traffic volumes, the AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 57 feet, PM: 62 feet) and shared thru/right-turn lane (AM: 66 feet, PM: 115 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection are anticipated to remain approximately the same as existing Friday

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conditions. It should be noted that vehicles are able to stack into the parking aisle that extends from the driveway entrance into the Sunset Center retail shopping center. This parking aisle provides approximately 240 feet of space to sufficiently accommodate the 95th percentile queue lengths.

Lastly, as shown in Table 3-21, the existing storage length (170 feet) of the southbound left-turn lane of the Sunset Avenue / Sunset Center Main Entrance driveway intersection sufficiently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 54 feet, PM: 96 feet) during the Friday peak hours under existing plus Project conditions.

**Table 3-21: Friday Queuing Analysis Summary**

Intersection	Lane/ Movement	No. of Lanes/ Storage Length (feet)	Existing Conditions				Existing Plus Project			
			AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)
1. Highway 12 / Existing Project Driveway	SB Right	1 / 140' <sup>1</sup>	62	44'	71	49'	70	49'	85	53'
	WB Right	1 / 300'	120	-	128	-	123	4'	133	-
2. Highway 12 / Sunset Avenue- Grizzly Island Road	SB Left	1 / 150'	75	77'	193	196'	75	92'	193	192'
	SB Shared Left/Thru	1 / 385 <sup>2</sup>	75	123'	193	208'	75	132'	193	23'
	EB Left	2 / 500	204	147'	472	344'	210	162'	480	407'
	WB Right	1 / 390	79	83'	136	66'	79	51'	137	70'
3. Sunset Avenue / Sunset Center South Entrance	WB Right	1 / 110' <sup>1</sup>	50	51'	60	61'	50	50'	61	58'
4. Sunset Avenue / Sunset Center Main Entrance	SB Left	1 / 170'	47	55'	108	116'	48	54'	110	96'
	WB Left	1 / 30' <sup>1</sup>	82	<b>56'</b>	117	<b>63'</b>	82	<b>57'</b>	117	<b>62'</b>
	WB Shared Thru / Right	1 / 30' <sup>1</sup>	32	<b>67'</b>	67	<b>145'</b>	32	<b>66'</b>	67	<b>115'</b>

Source: Rick Engineering Company

Notes: 95<sup>th</sup> percentile queue lengths shown from SimTraffic queuing analysis reports.

Queue lengths exceeding turn bay storage lengths indicated in **bold**.

<sup>1</sup> Existing driveway throat length.

<sup>2</sup> Storage length is the distance from the stop bar at Sunset Avenue/Highway 12 intersection to the Sunset Avenue/Sunset Center Main Entrance intersection.

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In summary, although the weekday and Friday PM peak hour 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection currently exceeds the existing storage length (150 feet), the analysis results show that the addition of Project traffic to the existing weekday and Friday traffic volumes in the southbound left-turn lane and adjacent shared left-turn/through lane would have a negligible effect on queuing at the southbound approach of the intersection. In addition, the weekday and Friday analysis results show that the addition of Project traffic to the existing traffic volumes in the westbound left-turn lane and shared thru/right-turn lane at the Sunset Avenue / Sunset Center Main Entrance intersection would have a negligible effect on queuing at the westbound driveway approach of the intersection.

### Conclusions

The findings of this focused traffic study showed that the proposed project is anticipated to generate approximately 180 ADT, with 19 trips during the AM peak hour (10 inbound/9 outbound) and 31 trips during the PM peak hour (15 inbound/16 outbound) on a typical weekday.

The findings of the intersection level of service analysis showed that the study intersections currently operate at an acceptable LOS D or better during the peak hours and would continue operating at an acceptable LOS D or better with the addition of Project traffic to the existing traffic volumes for both a typical weekday and on a Friday.

The findings of the intersection queuing analysis showed that although the weekday and Friday PM peak hour 95<sup>th</sup> percentile queue length of southbound exclusive left-turn lane at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection currently exceeds the existing storage length (150 feet), the analysis results show that the addition of Project traffic to the existing weekday and Friday traffic volumes would have a negligible effect on queuing at the southbound approach of the intersection.

The intersection queuing analysis findings also show that although the 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane and shared through/right-turn lane at the Sunset Avenue / Sunset Center Main Entrance intersection currently exceed the existing driveway throat length (30 feet) during the AM and PM peak hours for both a typical weekday and Friday, the addition of Project traffic to the existing traffic volumes would have a negligible effect on queuing at the westbound driveway approach of the intersection. It should be noted that vehicles are able to stack into the parking aisle that extends from the driveway entrance into the Sunset Center retail shopping center. This parking aisle provides approximately 240 feet of space to sufficiently accommodate 95<sup>th</sup> percentile queue lengths.

The findings of the VMT screening assessment showed that the proposed Project would not exceed OPR's recommended screening threshold of 50,000 square feet to be considered a Local-Serving Retail use; therefore, the Project is presumed to have a less than significant impact per CEQA.

Based on the above, the proposed Project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b). Therefore, impacts would be less than significant, and the proposed Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

**c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

The proposed Project does not increase hazards due to a geometric design feature or incompatible uses. Development of the Project site and site access improvements requires compliance with City development guidelines and code which follow the General Plan and General Plan policies and actions that encourage the safe design of streets.

During construction, traffic management plans would be implemented to ensure the safety of roadway users accessing the Project site from Highway 12. The proposed Project would comply with the City's Traffic Control Plan Requirements for work area traffic control for work performed in the City's right-of-way. Also, there would be no incompatible uses introduced to the Project site which could cause vehicle conflicts (e.g., farm equipment). Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

**d) Result in inadequate emergency access?**

The proposed Project would not result in inadequate emergency access. Development of the Project site would not alter or impede emergency response routes or plans set in place by the City.

In regard to site emergency access, the proposed Project's driveway is designed to comply with turning radius requirements for emergency vehicles and would not cause hazardous driving conditions. The proposed Project's detailed design would be completed in compliance with California Fire Code requirements and would not impair emergency vehicle access in the vicinity of the Project site during construction and in ongoing operation. Compliance with the California CBC and Fire Code would be mandated through the plan check and approval process. This process would also ensure that adequate access for emergency services is provided, and the City's emergency response plan would be in effect during construction. As no non-compliant features are proposed, impacts are considered less than significant. Therefore, the proposed Project would not result in new or substantially more severe impacts than identified in the General EIR. The criteria for requiring further CEQA review are not met.



### 3.18 Tribal Cultural Resources

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XVIII. TRIBAL CULTURAL RESOURCES</b> — Would the project:			
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.18.1 ENVIRONMENTAL SETTING

This section addresses the potential for the existence of tribal cultural resources (TCRs) on the Project site and in the Project area, and the potential for Project impacts on those resources. This discussion is based in part on the results of City outreach to tribes as required under AB 52. Outreach correspondence documentation is provided in Appendix H.

As described in Section 3.5, Cultural Resources, prior to European explorers settling the area, the indigenous people known regionally as the Patwin lived in the region for thousands of years, as further described in Appendix C. The Patwin occupied the southwest Sacramento Valley from the current town of Princeton, north of Colusa, south to San Pablo and Suisun bays, and from the lower hills of the eastern North Coast Ranges to the Sacramento River. However, TCRs are not limited to physical archaeological resources with scientific significance, but could also include cultural landscapes, tribal cultural resources, and non-unique archaeological resources.

#### 3.18.2 REGULATORY SETTING

##### 3.18.2.1 State

Senate Bill (SB) 18

Under SB 18, the City, as the CEQA lead agency, is required to consult with appropriate tribes that have ancestral connections region prior to the adoption of any amendment to a general or specific plan for the

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purpose of preserving or mitigating potential impacts to cultural places within the local government's jurisdiction. The lead agency is required to contact the NAHC for a list of tribes, groups, or individuals who are recognized as having a cultural connection to the proposed Project site. The lead agency must notify the tribes and invite them to consult. Tribes are given a 90 period to respond to the agency's request.

### **Assembly Bill 52**

The legislature added requirements regarding TCRs for CEQA in AB 52 that took effect July 1, 2015. AB 52 requires consultation with California Native American tribes and consideration of TCRs in the CEQA process. By including TCRs early in the CEQA process, the legislature intended to ensure that local and tribal governments, public agencies, and applicants would have information available early in the proposed Project's planning process, to identify and address potential adverse impacts to TCRs. By taking this proactive approach, the legislature also intended to reduce the potential for delay and conflicts in the environmental review process. To help determine whether a project may have such an effect, a lead agency to notify and consult with any California Native American tribe that requests consultation. The City maintains an AB 52 list with tribes that are traditionally and culturally affiliated with the geographic area of the Project.

The purpose of the consultation is to determine if TCRs are present or may be impacted by a proposed project. TCRs are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (California Register) or included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be TCRs if they meet these criteria.

### **3.18.2.2 Local**

#### **City of Suisun City 2035 General Plan**

The City recognizes the importance of cultural resources; however, based on studies prepared by the Central Solano County Cultural Heritage commission, there are no known archaeologically sensitive sites within the City. However, archaeologically sensitive areas are located outside the City, south of the Downtown Waterfront Area. The following General Plan goals, objectives, policies and programs are applicable to the proposed Project:

Goal OSC-5: Minimize Negative Impacts on Prehistoric Resources.

Objective OSC-5: Review and condition new developments to minimize prehistoric resource impacts.

Policy OSC-5.1: The City will use geologic mapping and cultural and paleontological resource databases to determine the likely presence of resources and the appropriate level of cultural and paleontological resources analysis and mitigation required for new developments.

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Policy OSC-5.2: New developments shall be designed to avoid adverse impacts.

Program OSC-5.1: Cultural Resource Review and Mitigation. New development projects that could have significant adverse impacts to prehistoric or historic resources shall be required to assess impacts and provide feasible mitigation. The following steps, or those deemed equally effective by the City, will be followed:

- Request information from the Native American Heritage Commission regarding Native American groups that may have important sites in areas that could be affected by project development.
- Involve the local Native American community in determining the appropriate mitigation of impacts to significant prehistoric sites.
- Consult updated information from the Northwest Information Center regarding cultural resource sites, structures, or landscapes that could be affected by project activities.
- Based upon the sensitivity of the subject proposed project area, additional technical work may be required. Where a cultural resources survey has not been performed:
  - a pedestrian survey may be required in areas of low sensitivity;
  - a pedestrian survey will be required in areas of moderate and high sensitivity; and
  - Based on findings of the pedestrian survey, additional technical studies may be required, such as geoarchaeological sensitivity analysis, Native American consultation, ethnographic studies, or other analysis scaled according to the nature of the individual project.
- For new developments that would alter historic structures (structures 50 years old or older), a qualified architectural historian shall conduct a record search and assess the potential for the project to result in significant impacts to historic resources that occur as part of the existing built environment.
- Determination of impacts, significance, and mitigation (i.e., site monitors, avoidance, and/or other measures) shall be made by a qualified professional archaeologist or architectural historian, as appropriate.
- If impacts cannot be avoided through project design, appropriate and feasible treatment measures are required. Such measures may consist of, but are not limited to actions, such as data recovery excavations, photographic documentation, or preparation of design drawings documenting the resource subject to significant impacts.
- Provide the Northwest Information Center with appropriate California Department of Parks and Recreation site record forms and cultural resources reports documenting resources that may be identified through technical work performed to review projects accommodated under the General Plan.

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- If human remains are discovered during construction of projects occurring under General Plan buildout, the project proponent and landowner shall comply with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 7050.5.

### **3.18.3 SUMMARY OF OUTREACH EFFORTS**

In accordance with SB 18 and AB 52, the City used the list of tribes provided by NAHC to conduct outreach to tribes regarding the proposed Project, on September 7, 2022. The correspondence included a copy of the standards and mitigation requirements related to preservation of TCRs, adopted as part of the General Plan. The following tribal entities and individuals were sent invitations to consult on the Project:

- Cachil Dehe Band of Wintun Indians of the Colusa Indian Community, Attn: Daniel Gomez
- Cortina Rancheria – Kletsel Dehe Band of Wintun Indians, Attn: Charlie Wright
- Guidiville Indian Rancheria, Attn: Donald Duncan
- Muwekma Ohlone Indian Tribe of the San Francisco Bay, Attn: Charlene Nijmeh
- North Valley Yokuts Tribe, Attn: Katherine Erolinda Perez
- The Confederated Villages of Lisjan, Attn: Corrina Gould
- Yocha Dehe Wintun Nation, Attn: Anthony Roberts

### **3.18.4 METHODOLOGY**

Under CEQA, the evaluation of impacts to TCRs consists of two-parts: (1) identification of TCRs within a project site or immediate vicinity through AB 52 consultation; and (2) a determination of whether the project may result in a “substantial adverse change” in the significance of the identified resources. The impact analysis in this section is based on the results of archival research, the cultural resources survey performed on the Project site (Appendix C), and the results of AB 52 and SB 18 consultation undertaken between the City and tribes (Appendix H).

### **3.18.5 DISCUSSION**

- a) **Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**
- i) **Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?**
  - ii) **A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of**

**Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?**

The General Plan EIR identified that there are no known archaeologically sensitive sites, including sites understood to be associated with Native Americans within the City, and the General Plan EIR did not analyze potential impacts to tribal cultural resources. There were no listed TCRs identified or determined eligible for listing in the California Register or listed TCRs identified by NAHC. No substantial evidence of the any TCRs was presented during AB 52 consultation efforts.

Two Native American groups requested consultation with the City. Representatives for the Confederated Villages of the Lisjan Nation agreed that the General Plan requirements included in Program OSC-5.1 would be sufficient to address their potential concerns. Representatives for the Yocha Dehe Wintun Nation requested the execution of a monitoring agreement and asked to provide a treatment protocol be included as a condition of approval of the Project. Staff supported these requests, which would be required/executed at the discretion of the City.

Therefore, the Project would not cause a substantial adverse change in the significance of a known tribal cultural resource. The potential for disturbance or discovery of undiscovered tribal cultural resources at the site is very low; however, the Project would require excavation and ground disturbing activities. Consequently, the potential for construction to disturb unknown and unrecorded tribal cultural resources cannot be completely ruled out. The Project would be required to implement General Plan Program OSC-5.1 which outlines requirements including, but not limited to, requiring involvement of local Native American community in determining appropriate mitigation to prehistoric sites. Compliance with existing federal, state, and local regulations would ensure that Project impacts to tribal cultural resources are less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### 3.19 Utilities and Services Systems

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XIX. UTILITIES AND SERVICE SYSTEMS</b> — Would the project:			
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.19.1 ENVIRONMENTAL SETTING

##### Water

The General Plan describes that the City's water supply is provided by a Joint Exercise of Powers Agreement to provide a long-term water supply for the City, which is the Suisun City and Solano Irrigation District (SID). The City and SID are now a full Joint Powers Authority called the Suisun-Solano Water Authority (SSWA). The main two sources of water for the SSWA are from the United States Bureau of Reclamation (USBR) Federal Solano Project and the DWR State Water Project. Most of the City's water supply is obtained by SSWA from Lake Berryessa, owned and operated by the USBR (City of Suisun City 2015a). SID's water entitlements for agricultural and domestic water service total approximately 141,000 acre feet. SID operates the Solano Project to deliver Lake Berryessa water to the City and its service area. The hydroelectric power plant at the base of Monticello Dam is also owned by and operated by SID (SID 2022).

##### Wastewater

The FSSD is responsible for wastewater collection and treatment and water recycling services in the City. There is no reclaimed water use within the SSWA service area, and there are no current plans for reclaimed water use in the City, due to the lack of conveyance infrastructure in place to deliver recycled

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water from the FSSD Fairfield-Suisun Subregional Wastewater Treatment Plant to the SSWA service area (City of Suisun City 2014). Existing wastewater utilities include a FSSD owned and operated 36-inch sanitary sewer main running within a 15-foot easement along the southern edge of the Project site, parallel to Highway 12.

### **Stormwater**

The City's Public Works Department participates in efforts to control the amount and quality of stormwater flowing off hardscape surfaces in the City. The City maintains, operates, and repairs the City's stormwater system, which is comprised of pump stations, storm drain catch basins, inlets, siphons, storm drain pipes, open culverts, creeks, drain ditches, canals and storm retention basins. Storm drains in the City connect directly to Suisun Marsh, the largest estuarine marsh on the West Coast; therefore, the control of stormwater runoff is an environmental priority for the City (City of Suisun City 2022). Existing stormwater infrastructure in the Project area includes a 42-inch storm drain pipe running within a 10-foot storm drain easement along the southern edge of the Project site, parallel to Highway 12.

### **Solid Waste**

Republic Services provides and handles all solid waste collection for the City, which includes collection of garbage, recyclables, and organics. Potrero Hills Landfill is the primary landfill serving the City, located just south of the City in unincorporated Solano County (City of Suisun City 2014).

## **3.19.2 DISCUSSION**

- a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

### **Water Infrastructure**

The Project site is not currently served by water services, as the site currently consists of vacant land. Along Highway 12 near the southern portion of the Project site, the existing utilities consist of a 12-inch water main which is available to serve the Project site. The proposed Project includes installation of a new 8-inch water main to connect to the existing 12-inch water main, in order to sufficiently supply the Project site. Additionally, a 2-inch lateral water line is proposed to connect to the 8-inch water main to supply the proposed building and onsite irrigation.

Two fire hydrants are proposed to be constructed as part of the Project. One fire hydrant is proposed to be constructed on the northeastern corner of the Project site adjacent to the eastern delivery and alleyway. A second fire hydrant is proposed to be constructed in the southern portion of the Project site, along the southeastern side of the proposed parking lot. Both new fire hydrants would be supplied and connected to the main water line through two, newly constructed 6-inch fire water lines.

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The Project would not require upsizing of existing water mains. All infrastructure improvements would be constructed in accordance with the City's requirements. Infrastructure improvements related to the Project would be designed and constructed in accordance with the City's standards and other requirements by the City. Therefore, with compliance and implementation of City requirements and construction of new water systems in accordance with the City's Standards, the Project would not require or result in the relocation or construction of new or expanded water facilities and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### **Wastewater Infrastructure**

Existing wastewater utilities include a FFSD owned and operated 36-inch sanitary sewer pipe running within a 15-foot easement along the southern side of the Project site, parallel to Highway 12. Two 6-inch sewer laterals from the building are proposed and would be routed to a proposed sewer manhole to tie into the existing sewer main to the south. An additional 6-inch lateral would be provided for the drain in the trash enclosure and a stub for future projects to the north. Sewer and wastewater services to the Project area would be provided by FFSD. Solid waste utility services to the Project area would be provided by Republic Services.

Construction of new wastewater systems would be designed in accordance with City standards and other requirements by the City. The Project would comply with and implement City requirements and would design and construct the new wastewater systems onsite in accordance with the City's Standards. As such, the Project would not require or result in the relocation or construction of new or expanded wastewater facilities and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General EIR, and the criteria for requiring further CEQA review are not met.

### **Stormwater Infrastructure**

Existing stormwater utilities include a 42-inch storm drain pipe running within a 10-foot storm drain easement along the southern side of the property, parallel to Highway 12. Stormwater runoff generated from the proposed Project site would be routed to three onsite bioretention basins for infiltration and cleaning through drain rock. The sizes of each basin are as follows: Basin 1 is 1,471-square feet (820-cubic feet); Basin 2 is 1,641-square feet (821-cubic feet); and Basin 3 is 1,991-square feet (996-cubic feet). Excess water would collect in 4-inch perforated underdrain pipes within the drain rock, or through overflow into area drains where it would be routed within 18-inch storm drain pipes into the existing 42-inch storm drain to the south. Connection to the existing main would require two storm drain manholes. Two 18-inch storm drain stubs have already been provided to the north of the site for future projects.

The Project would design and construct the new stormwater systems onsite in accordance with the City's requirements including compliance with C.3 requirements and conformance with the City's standards; therefore, the Project would not require or result in the relocation or construction of new or expanded offsite wastewater facilities and impacts would be less than significant. The Project would not result in



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new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?**

SSWA's 2015 Urban Water Management Plan (UWMP) determined that the water service provider would have adequate supplies during normal years to meet its projected demand through 2040. With respect to water demand projections, the UWMP indicates that the City and SID have contracts with Solano County Water Agency for water supplies from the federal Solano Project. The Solano County Water Agency is the contracting agency with the USBR for the water supplies from the Solano Project and is also the contracting agency for water supplies from the State Water Project's North Bay Aqueduct from which City has an allocation. (SSWA 2016).

The General Plan EIR identified that the City would have adequate water supply under normal supply conditions to serve the developments allowed under the General Plan through 2035. The Project would develop the proposed Project, Tractor Supply Company retail center and its supporting surface parking lot, and irrigated landscaping. Such uses were contemplated within the General Plan and water supply forecasts; therefore, the City would have adequate water supply to serve the Project.

The Project would result in a total estimated domestic water demand of approximately 500 gpd, and proposed landscaping and other irrigation would require an additional approximately 520 gpd, for a total of 1,020 gpd or approximately 1.14 acre-feet per year (AFY). The City's 2015 UWMP identified that the total potable water demand for the City would be met without deficit through 2040, in normal, dry and multiple dry years (SSWA 2016). The identified total right or safe yield amount identified for all years through 2040 was 945 million gallons per year or approximately 2,788 AFY. The projected demand resulting from Project operation would represent a negligible amount of the existing and forecasted City water demand (approximately 0.004 percent) and would not result in a substantial increase in water demand for the City. The water demand is consistent with the General Plan which accounts for future development projects in the City.

The 2015 UWMP presented a more conservative estimate than what was considered in the General Plan EIR, which utilized data from the 2010 UWMP at a time when water supplies were not as threatened. Nevertheless, the 2015 UWMP identified that the reasonably available volume of water supply in the year 2040 would not be less than the projected demand and there would be adequate water supplies to serve the Project. Additionally, the Project would include water efficient landscaping and water conservation measures at the site to reduce water demand resulting from the Project and would comply with all applicable City requirements related to water use and conservation. General Plan Policy OSC-7.4 would be applicable to the proposed Project, which provides that the City will require the use of water conservation technologies, such as low-flow toilets, efficient clothes washers, and efficient water-using industrial equipment in new construction, in accordance with code requirements. General Plan Policy OSC-7.8 would also apply, which also indicates required new developments to incorporate climate-appropriate landscaping to reduce water demand and ongoing maintenance costs (City of Suisun City 2015a). Therefore, sufficient water supplies would be available to serve the Project, and reasonably

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foreseeable future development and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**c) Would the project result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

The Project is estimated to result in a projected wastewater generation of 500 gpd for operation of the Project. FSSD's Fairfield-Suisun Subregional Wastewater Treatment Plant provides a tertiary level of treatment, with final effluent discharged directly into Suisun Marsh or temporarily stored in large, earthen reservoirs for later use in irrigation or utility applications. The Fairfield-Suisun Subregional Wastewater Treatment Plant has a current design capacity of 23.7 million gpd and currently treats 12.2 million gpd average dry weather flow. The General Plan EIR identified that land uses contemplated under buildout of the General Plan would result in increased wastewater effluent discharged to wastewater systems of an average daily 19.5 million gpd to 21.0 million gpd. The General Plan EIR concluded that the additional wastewater generated by development under the General Plan would be adequately served by FSSD, the City's the wastewater treatment provider, which would have adequate treatment capacity to meet the estimated increase in wastewater. Full buildout of the General Plan would not include any land uses that would be expected to generate wastewater of such poor quality and concentration or in such amounts that FSSD's Wastewater Treatment Plant's treatment systems would not be able to treat according to applicable water quality standards. Therefore, the estimated wastewater generation for the Project would represent a negligible amount (0.002 percent) of the treatment capacity of the Fairfield-Suisun Subregional Wastewater Treatment Plant, including the estimated wastewater generated at buildout of the General Plan. As such, the FSSD Wastewater Treatment Plant would have adequate capacity to accept wastewater generated by the Project (City of Suisun City 2014).

Therefore, the Project would not result in a determination that the wastewater treatment facility does not have adequate capacity to serve the Project's demand, and impacts would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

**e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

Construction activities associated with the Project would not require the demolition of existing structures or paved surfaces onsite which would generate solid waste. Therefore, the only waste associated with the Project construction would be from construction waste, which would comply with CalGreen solid waste diversion requirements and implementation of other City recycling programs. Compliance with these requirements would ensure that construction activities associated with development of the Project would

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not generate solid waste in excess of State or local standards, and construction impacts would be less than significant.

The City currently contracts with Republic Services to provide and handle solid waste collection for the City. The primary landfill that serves the City is Potrero Hills Landfill, which is located in unincorporated Solano County just south of the City. Potrero Hills Landfill has a total permitted throughput of 4,333 tons per day and a remaining capacity of 13,872,000 tons (CalRecycle 2022). According to CalRecycle's Disposal Rate Calculator, in 2021, the City had an annual disposal rate of 3.1 pounds per person per day for residents and 28.9 pounds per person per day for employees (CalRecycle 2021). With the Project conservatively estimated to employ 12 employees, the Project would result in approximately 347 pounds per day of solid waste, or 0.17 tons per day. The estimated 0.17 tons per day of solid waste would represent 0.0004 percent of the daily maximum throughput at the landfill. Based on the remaining available capacity of Potrero Hills Landfill, Project operation would not generate solid waste in excess of state or local standards and there would be sufficient capacity at the landfill to accommodate the solid waste generation from the Project.

Additionally, the Project would implement and comply with all solid waste reduction measures adopted by the City and would provide recycling collection areas for the Project. The Project would comply with all federal, State, and local statutes and regulations related to solid waste. The Project would not result in generation of solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and would comply with existing statutes and regulations related to solid waste. As such, impacts related to solid waste would be less than significant. The Project would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

### 3.20 Wildfire

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XX. WILDFIRE</b> — If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:			
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

#### 3.20.1 ENVIRONMENTAL SETTING

The City's General Plan EIR identified that areas within the City with the highest fire hazard are in the south-central and western portions of the City, (City of Suisun City 2015a). CAL FIRE has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. CAL FIRE has mapped the Project site as not being within a Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE 2022). Additionally, the USFS Wildfire Hazard Potential map designates the Project site and surrounding areas as non-burnable (USFS 2020).

#### 3.20.2 DISCUSSION

##### a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

The City has an adopted a Local Hazard Mitigation Plan (LHMP) that is intended to integrate hazard mitigation strategies into day-to-day City activities, while identifying and evaluating specific strategies to be considered by the City and its agencies (City of Suisun City 2017). The LHMP does not include any designated emergency evacuation routes; however, the Project would be designed to provide adequate emergency access to the site for emergency vehicles. The Project would not substantially impair an adopted emergency response plan or emergency evacuation plan and impacts would be less than significant. Therefore, the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR and the criteria for requiring further CEQA review are not met.

- b) Due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**
- c) Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**
- d) Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?**

As discussed above in Section 3.20.1, the Project site is not located in an area designated as a VHFHSZ by CAL FIRE and USFS designates the Project site and surrounding areas as non-burnable. Due to the very low risk of wildfire hazards and the highly urbanized nature and flat topography of the Project site and surrounding areas, the Project would not, due to slope, prevailing winds, and other factors, exacerbate wildfire risk or expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire or expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Additionally, the Project would require installation and maintenance of associated infrastructure, but it would not exacerbate fire risk, as the Project site is located in an area that is already served by existing utilities. All installation and maintenance activities would be conducted to ensure that such activities would not exacerbate fire risk or result in temporary or ongoing impacts to the environment. Therefore, all impacts would be less than significant, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR. The criteria for requiring further CEQA review are not met.

### 3.21 Mandatory Findings of Significance

	Significant Impact Peculiar to the Project or the Project Site	Significant Impact due to New Information	Impact Adequately Addressed in GP EIR
<b>XXI. MANDATORY FINDINGS OF SIGNIFICANCE</b>			
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?**

As described in Section 3.4, Biological Resources, the proposed Project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal. The General Plan EIR concluded that future development would have a less-than-significant impact to biological resources with implementation of applicable General Plan policies and compliance with federal and state laws. Therefore, this impact would be less than significant, and the Project would not result in new or substantially more severe impacts than identified in the General Plan EIR.

As described in Section 3.5, Cultural Resources, the General Plan EIR concluded that with implementation of General Plan policies and adherence to federal, state, and local regulations, impacts to cultural resources would be less than significant. No cultural or Tribal Cultural Resources were identified within the Project site through the CHRIS NWIC records search, desktop review, AB 52 Consultations, or pedestrian survey. Based on the cultural resource study (see the memo provided in Appendix C), there is a low probability that buried cultural resources are present within the Project site. Therefore, development of the Project site would not result in the loss of important examples of major periods in California history

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or prehistory; however, General Plan policies would be implemented in the event of any such discovery during construction.

Compliance with General Plan policies and actions and adherence to federal, state, and local regulations would ensure that proposed Project impacts would be less than significant and would not result in new or substantially more severe impacts than identified in the General EIR, and the criteria for requiring further CEQA review are not met.

**b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

The proposed Project would incrementally contribute to cumulative impacts in combination with other projects occurring within the City. However, all reasonably foreseeable future development in the City would be subject to environmental review and regulations similar to the proposed project. Furthermore, all non-state-owned development projects are guided by the policies identified in the General Plan and by the regulations established in the City Municipal Code.

As provided in the previous analysis for each resource area, the proposed Project would not result in significant impacts to any of the environmental topics analyzed herein. Compliance with General Plan provisions would be required; however, no mitigation measures are included in the General Plan EIR, and none are warranted for the proposed Project. The General Plan EIR identified potential cumulative impacts from projects occurring within the Planning Area, but the proposed Project’s contribution would not be considerable.

Compliance with policies and actions identified in the General Plan, as well as compliance with applicable land use and environmental regulations, would ensure that environmental effects associated with the proposed Project do not combine with effects from reasonably foreseeable future development in the Planning Area to cause cumulatively considerable significant impacts. Therefore, the proposed Project would not have cumulatively considerable contributions to existing cumulative impacts resulting in a less-than-significant impact. Cumulative impacts were adequately addressed in the General Plan EIR, and the criteria for requiring further CEQA review are not met.

**c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

Consistent with Section 15065(a)(4) of the CEQA Guidelines, a lead agency shall find that a project may have a significant effect on the environment where there is substantial evidence that a Project has the potential to cause substantial adverse effects on human beings, either directly or indirectly. Under this standard, a change to the physical environment that might otherwise be minor must be treated as significant if people would be significantly affected. This factor relates to adverse changes to the environment of human beings generally, and not to effects on particular individuals. Implementation of standard permit conditions and General Plan policies would reduce impacts to less than significant levels. No other direct or indirect adverse effects on human beings have been identified. The proposed Project

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would not result in new or substantially more severe impacts than identified in the General Plan EIR, and the criteria for requiring further CEQA review are not met.



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## 5 List of Preparers

Principal in Charge ..... Trevor Macenski  
Project Manager ..... Christine Abraham  
Air Quality Scientist ..... Kaitlyn Heck  
Environmental Scientist..... Emily Medler  
Environmental Planner ..... Jennifer Webster  
Quality Reviewer ..... Kristin Pollot

## 6 Appendices

## Appendix A Air Quality and Greenhouse Gas Emissions Analysis Memorandum

## MEMORANDUM

**DATE:** March 17, 2022

**To:** Deane Surface, Hilbers, Inc.

**FROM:** Amy Fischer, Principal  
Cara Carlucci, Senior Planner

**SUBJECT:** Air Quality and Greenhouse Gas Emissions Analysis Memorandum for the Tractor Supply Company Project, Suisun City, California

This Air Quality and Greenhouse Gas Emissions Analysis for the proposed Tractor Supply Company Project (project) in the City of Suisun City (City), Solano County, California, has been prepared using methods and assumptions recommended by the Bay Area Air Quality Management District (BAAQMD).<sup>1</sup> This analysis includes a description of existing regulatory framework, an assessment of project construction and operation-period air quality and greenhouse gas (GHG) emissions and an evaluation of the project's compliance with adopted plans related to the reduction of clean air and GHG emissions.

### PROJECT DESCRIPTION

The proposed project site is located near the intersection of State Route 12 (SR 12) and Snow Drive (Assessor's Parcel Numbers [APN] 0173-390-190 and 0173-390-180) in the City of Suisun City, California. The proposed project site is undeveloped and surrounded by existing single-family residential and commercial uses.

The proposed project would include a 22,433-square-foot Tractor Supply Company store, a 1,920-square-foot permanent storage trailer for equipment display, and a 95-space parking lot. Project construction would begin in July 2022 and be completed by March 2023, a duration of approximately 9 months. Once operational, the proposed project is expected to generate approximately 180 daily vehicle trips.<sup>2</sup>

<sup>1</sup> Bay Area Air Quality Management District (BAAQMD). 2017. *California Environmental Quality Act, Air Quality Guidelines*. May.

<sup>2</sup> Rick Engineering Company. 2022. Tractor Supply Company – Suisun City, California Focused Traffic Study/VMT Assessment (Job Number 19583). March 10.

## ENVIRONMENTAL SETTING

### Air Quality Background

Air quality is primarily a function of both local climate, local sources of air pollution and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The major determinants of transport and dilution are wind, atmospheric stability, terrain, and for photochemical pollutants, sunshine.

A region's topographic features have a direct correlation with air pollution flow and, therefore, are used to determine the boundary of air basins. Suisun City is located within the San Francisco Bay Area Air Basin (Basin), a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City is within the jurisdiction of the BAAQMD, which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Neither State nor national ambient air quality standards of the following chemicals have been violated in recent decades: nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride. Those exceedances of air quality standards that do occur primarily happen during meteorological conditions conducive to high pollution levels, such as cold, windless nights or hot, sunny summer afternoons.

Both State and federal governments have established health-based ambient air quality standards for six criteria air pollutants: carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and suspended particulate matter. In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Two criteria pollutants, O<sub>3</sub> and NO<sub>2</sub>, are considered regional pollutants because they (or their precursors) affect air quality on a regional scale. Pollutants such as CO, SO<sub>2</sub>, and Pb are considered local pollutants that tend to accumulate in the air locally. The BAAQMD is under State nonattainment status for ozone and particulate matter standards. The BAAQMD is classified as nonattainment for the federal ozone 8-hour standard and nonattainment for the federal PM<sub>2.5</sub> 24-hour standard. As such, the primary pollutants of concern in the project area are O<sub>3</sub>, CO, and PM<sub>2.5</sub>.

Because of the conservative nature of the significance thresholds, and the basin-wide context of individual development project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO<sub>x</sub>) and reactive organic gases (ROG).



Further, by its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to by itself result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, the air districts have considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions.

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise. These populations are referred to as sensitive receptors.

### Greenhouse Gas and Global Climate Change Background

Greenhouse gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO<sub>2</sub>);
- Methane (CH<sub>4</sub>);
- Nitrous oxide (N<sub>2</sub>O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF<sub>6</sub>).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally occurring GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, some gases, like HFCs, PFCs, and SF<sub>6</sub> are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO<sub>2</sub>, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO<sub>2</sub> over a specified time period. GHG emissions are typically measured in terms of pounds or tons of “CO<sub>2</sub> equivalents” (CO<sub>2</sub>e).

## REGULATORY FRAMEWORK

This section provides regulatory background information for air quality and GHGs.

### Air Quality

#### *Federal Regulations*

The 1970 Federal Clean Air Act (CAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The CAA Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required for areas of the nation that exceed the standards. Under the CAA, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

#### *State Regulations*

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain California Ambient Air Quality Standards (CAAQS) for CO, O<sub>3</sub>, sulfur dioxide (SO<sub>2</sub>), and nitrogen dioxide (NO<sub>2</sub>) by the earliest practical date. The CCAA provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

The CARB is the State’s “clean air agency.” The CARB’s goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

#### *Regional Regulations*

The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to

citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

**Clean Air Plan.** The Clean Air Plan guides the region's air quality planning efforts to attain the CAAQS.<sup>3</sup> The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO<sub>x</sub>), particulate matter and GHG emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve GHG reduction targets; and
- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super-GHGs" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

**BAAQMD CEQA Air Quality Guidelines.** The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The BAAQMD CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the proposed project.

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<sup>3</sup> BAAQMD. 2017. *Final 2017 Clean Air Plan*. April 19. Website: [www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a\\_-proposed-final-cap-vol-1-pdf.pdf?la=en](http://www.baaqmd.gov/~media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en) (accessed February 2022).

### Local Regulations

The Public Health and Safety Element of the *City of Suisun City 2035 General Plan*<sup>4</sup> includes goals, objectives, policies, and programs that work to reduce emissions that produce harmful air pollutants. The following objectives, policies, and programs are applicable to the project:

- **Objective PHS-3:** Reduce emissions that produce harmful air pollutants.
  - **Policy PHS-3.2:** The City will communicate with the Bay Area Air Quality Management District to identify sources of toxic air contaminants and determine the need for health risk assessments prior to approval of new developments.
  - **Policy PHS-3.3:** The City will require projects that could result in significant air pollutant emissions impacts to reduce operational emissions from vehicles, heating and cooling, lighting, equipment use, and other proposed new sources.
  - **Policy PHS-3.3:** The City will require implementation of applicable emission control measures recommended by the BAAQMD for construction, grading, excavation, and demolition.
- **Program PHS-3.1: Health Risk Analyses.** When development involving sensitive receptors, such as residential development, is proposed in areas within 134 feet of SR 12 or when uses are proposed that may produce hazardous air contaminants, the City will require screening level analysis, and if necessary, more detailed health risk analysis to analyze and mitigate potential impacts. For projects proposing sensitive uses within 134 feet of SR 12, the City will require either ventilation that demonstrates the ability to remove more than 80 percent of ambient PM<sub>2.5</sub> prepared by a licensed design professional or site-specific analysis to determine whether health risks would exceed the applicable BAAQMD-recommended threshold and alternative mitigation demonstrated to achieve the BAAQMD threshold. Site-specific analysis may include dispersion modeling, a health risk assessment, or screening analysis. For proposed sources of toxic air contaminants, the City will consult with the BAAQMD on analytical methods, mitigation strategies, and significance criteria to use within the context of California Environmental Quality Act documents, with the objective of avoiding or mitigating significant impacts.
- **Program PHS-3.2: Construction Mitigation.** The City will require new developments to incorporate applicable construction mitigation measures maintained by the BAAQMD to reduce potentially significant impacts. Basic Control Measures are designed to minimize fugitive PM dust and exhaust emissions from construction activities. Additional Control Measures may be required when impacts would be significant after application of Basic Control Measures.
- **Program PHS-3.3: Construction Mitigation for Health Risk.** Construction equipment over 50 brake horsepower (bhp) used in locations within 300 feet of an existing sensitive receptor shall meet Tier 4 engine emission standards. Alternatively, a project applicant may prepare a site-specific estimate of diesel PM emissions associated with total construction activities and

<sup>4</sup> Suisun City, City of. 2015. *City of Suisun City 2035 General Plan*. May 5. Website: <https://www.suisun.com/?s=general+plan> (accessed February 2022).

evaluate for health risk impact on existing sensitive receptors in order to demonstrate that applicable BAAQMD-recommended thresholds for toxic air contaminants would not be exceeded or that applicable thresholds would not be exceeded with the application of alternative mitigation techniques approved by BAAQMD.

## Greenhouse Gas Emissions

This section describes regulations related to global climate change at the federal, State, and local level.

### *Federal Regulations*

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the EPA has the authority to regulate CO<sub>2</sub> emissions under the CAA.

While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 to implement a regulatory approach to global climate change, including the 2009 EPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the EPA Administrator signed an endangerment finding action in 2009 under the CAA, finding that seven GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, NF<sub>3</sub>, PFCs, and SF<sub>6</sub>) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

### *State Regulations*

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

**Assembly Bill 32 (2006), California Global Warming Solutions Act.** California's major initiative for reducing GHG emissions is Assembly Bill (AB) 32, passed by the State legislature on August 31, 2006. This effort set a GHG emission reduction target to reduce GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) CO<sub>2</sub>e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The CARB approved the Scoping Plan on December 11, 2008. It contains the main strategies California will implement to achieve the reduction of approximately 169 MMT CO<sub>2</sub>e, or approximately 30 percent, from the State's projected 2020 emission level of 596 MMT CO<sub>2</sub>e under a business-as-usual scenario (this is a reduction of 42 MMT CO<sub>2</sub>e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reduction of 31.7 MMT CO<sub>2</sub>e);
- The Low-Carbon Fuel Standard (15.0 MMT CO<sub>2</sub>e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO<sub>2</sub>e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO<sub>2</sub>e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high-speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO<sub>2</sub>e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020 and sets the groundwork to reach long-term goals set forth in Executive Orders (EO) S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. The CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,<sup>5</sup> to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill (SB) 32.

**Senate Bill 375 (2008).** Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the CARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The CARB may update the targets every four years and must update them every eight years. MPOs, in turn, must demonstrate how their plans, policies and transportation investments meet the targets set by the CARB through Sustainable Community Strategies (SCS). The SCSs are included with the Regional Transportation Plan, a report required by State law. However, if an MPO finds that its SCS will not meet the GHG reduction target, it may

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<sup>5</sup> California Air Resources Board (CARB). 2017. *California's 2017 Climate Change Scoping Plan*. November. Website: [ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping\\_plan\\_2017.pdf](http://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf) (accessed February 2022).

prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

**Executive Order B-30-15 (2015).** Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. The CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and, therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

**Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act.** SB 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increase energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission (CPUC) for the private utilities and by the California Energy Commission (CEC) for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other nonrenewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to State energy agencies under existing law. The addition made by this legislation requires State energy agencies to plan for and implement those programs in a manner that achieves the energy efficiency target.

**Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197.** In summer 2016, the Legislature passed, and the Governor signed SB 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an Intergovernmental Panel on Climate Change analysis of the emission trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO<sub>2</sub>e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air pollutant emissions data that are collected by the CARB was posted in December 2016.



**Senate Bill 100.** On September 10, 2018, Governor Brown signed SB 100, which raises California’s renewable portfolio standard requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a State policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all State agencies by December 31, 2045. Under the bill, the State cannot increase carbon emissions elsewhere in the Western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

**Executive Order B-55-18.** EO B-55-18, signed September 10, 2018, sets a goal “to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter.” EO B-55-18 directs the CARB to work with relevant State agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO<sub>2</sub>e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

### *Regional Regulations*

The BAAQMD is the regional government agency that regulates sources of air pollution within the nine Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

**BAAQMD Climate Protection Program.** The BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the Air Basin. The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy, all of which assist in reducing GHG emissions and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders.

**BAAQMD CEQA Air Quality Guidelines.** Under the current CEQA Air Quality Guidelines, a local government may prepare a Qualified Greenhouse Gas Reduction Strategy that is consistent with AB 32 goals. If a project is consistent with an adopted qualified Greenhouse Gas Reduction Strategy and General Plan that addresses the project’s GHG emissions, it can be presumed that the project will not have significant GHG emissions under CEQA. The CEQA Air Quality Guidelines also included a quantitative threshold for project level analyses based on estimated greenhouse emissions as well as per capita metrics.



### Local Regulations

The Public Health and Safety Element of the *City of Suisun City 2035 General Plan*<sup>6</sup> includes goals, objectives, policies, and programs that work to reduce local GHG emissions and reduce the local effects of global climate change. The following objectives and policies are applicable to the project:

- **Objective PHS-4:** Reduce the City's contribution to global climate change effects.
  - **Policy PHS-4.1:** The City will coordinate with the Association of Bay Area Governments, Solano County, the Bay Area Air Quality Management District, and California Air Resources Board, and other relevant agencies, to orient its plans, policies, and regulations to take best local advantage of regional and statewide AB 32-related infrastructure investment and other programs.
  - **Policy PHS-4.2:** The City will guide land use change, direct investments, and apply its fees and programs to encourage more GHG-efficient development patterns, as feasible.
  - **Policy PHS-4.3:** The City will actively pursue funding for transportation systems that promote public transit, bicycling, and pedestrian travel and other needed infrastructure, building and public realm energy efficiency upgrades, renewable energy production, land use-transportation modeling, and other projects to reduce local GHG emissions.
  - **Policy PHS-4.4:** The City will collaborate with the Association of Bay Area Governments, Solano County, the Bay Area Air Quality Management District, and California Air Resources Board, and other relevant agencies, where feasible, to fund transportation and other infrastructure and service improvements that increase local GHG efficiency.
  - **Policy PHS-4.5:** The City will, as feasible, conduct regionally coordinated land use, transportation, and public facility planning to support GHG-efficient local development.

## METHODOLOGY

### Construction Emissions

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site.

Construction of the proposed project would begin in July 2022 and be completed by March 2023, a duration of approximately 9 months. This analysis also assumes use of Tier 2 construction

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<sup>6</sup> Suisun City, City of. 2015. op. cit.

equipment. Other detailed construction information is currently unavailable; therefore, this analysis utilizes CalEEMod default assumptions.

### Operational Emissions

This air quality analysis includes estimating emissions associated with long-term operation of the project. Indirect emissions of criteria pollutants with regional impacts would be emitted by project-generated vehicle trips. In addition, localized air quality impacts (i.e., higher carbon monoxide concentrations or “hot-spots”) near intersections or roadway segments in the project vicinity would also potentially occur due to project-generated vehicle trips.

Consistent with BAAQMD’s guidance for estimating emissions, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project. The analysis was conducted using land use codes *Hardware/Paint Store* and *Parking lot*. As discussed in the Project Description, the proposed project is expected to generate approximately 180 daily trips,<sup>7</sup> which was included in this analysis. Where project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate project emissions. CalEEMod output sheets are included in Attachment A.

### Greenhouse Gas Emissions

GHG emissions associated with the project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term GHG emissions associated with project-related vehicle trips. Recognizing that the field of global climate change analysis is rapidly evolving, the approaches advocated most recently indicate that for determining a project’s contribution to GHG emissions, lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, construction activities, and any other significant source of emissions within the project area. The CalEEMod results were used to quantify GHG emissions generated by the project.

### THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

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<sup>7</sup> Rick Engineering Company. 2022. op. cit.

According to the BAAQMD CEQA Guidelines, to meet air quality standards for criteria air pollutant and air precursor impacts, the proposed project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NO<sub>x</sub> or PM<sub>2.5</sub> (exhaust) greater than 54 pounds per day or PM<sub>10</sub> exhaust emissions greater than 82 pounds per day; or
- Generate operational emissions of ROG, NO<sub>x</sub> or PM<sub>2.5</sub> of greater than 10 tons per year or 54 pounds per day or PM<sub>10</sub> emissions greater than 15 tons per year or 82 pounds per day.

The State *CEQA Guidelines* indicate that a project would normally have a significant adverse GHG emission impact if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

The BAAQMD adopted quantitative GHG thresholds of significance for operational emissions in its CEQA Guidelines. The numeric thresholds set by the BAAQMD were calculated to achieve the State's 2020 target for GHG emissions levels (and not the SB 32 specified target of 40 percent below the 1990 GHG emissions level). The proposed project would not be fully constructed and operational until 2023. Because the project would begin operations in the post-2020 timeframe, the 2020 efficiency target of 1,100 metric tons (MT) of CO<sub>2</sub>e per year (MT CO<sub>2</sub>e/yr) threshold and 4.6 MT CO<sub>2</sub>e/yr per service population, which has been the threshold most recently applied to development projects, would need to be adjusted to reflect the project's opening year.

BAAQMD has yet to finalize an updated GHG threshold for the 2030 target. Therefore, for purposes of this analysis, a scaled threshold consistent with State goals detailed in SB 32, EO B-30-15, and EO S-3-05 to reduce GHG emissions by 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050, respectively was developed for 2023. This assessment uses a threshold of 968 MT CO<sub>2</sub>e/yr or 4.0 MT CO<sub>2</sub>e per capita service population (employees plus residents) per year, which was calculated for the buildout year of 2023 based on the GHG reduction goals of SB 32 and EO B-30-15.

Therefore, the proposed project would not have a significant effect on the environment if it would meet one of the following criteria:

- Result in operational-related GHG emissions of less than 968 MT CO<sub>2</sub>e/yr; or
- Result in operational-related GHG emissions of less than 4.0 MT CO<sub>2</sub>e per capita service population (employees plus residents) per year.

## PROJECT IMPACTS

The proposed project would release emissions over the short term as a result of construction activities, and over the long term from traffic generation and operation of the proposed project. Emissions would include criteria air pollutants and GHG emissions. The sections below describe the proposed project's consistency with applicable air quality plans, estimated project emissions, and the significance of impacts with respect to BAAQMD thresholds.

### Air Quality

#### *Consistency with Applicable Air Quality Plans*

The applicable air quality plan is the BAAQMD 2017 Clean Air Plan (Clean Air Plan), which defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project: (1) supports the goals of the Clean Air Plan; (2) includes applicable control measures from the Clean Air Plan; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

**Clean Air Plan Goals.** The primary goals of the Bay Area Clean Air Plan are to: attain air quality standards; reduce population exposure and protect public health in the Bay Area; and reduce greenhouse gas emissions and protect climate.

The BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed below, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed BAAQMD thresholds of significance. Therefore, the proposed project would not conflict with the Clean Air Plan goals.

**Clean Air Plan Control Measures.** The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutants Measures. The proposed project's compliance with each of these control measures is discussed below.

***Stationary Source Control Measures.*** The Stationary Source Control Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD Permit and Inspection programs. Since the proposed project would not include any of these stationary sources, the Stationary Source Control Measures of the Clean Air Plan are not applicable to the proposed project.

***Transportation Control Measures.*** The BAAQMD identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, TACs, and GHGs by

reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. Based on the proposed project's trip generation, the proposed project is not expected to generate a substantial amount of daily trips or vehicle miles traveled. As such, the proposed project would not hinder the BAAQMD's initiatives to reduce vehicle trips and vehicle miles traveled and would increase the use of alternate means of transportation. Therefore, the proposed project would not conflict with the identified Transportation and Mobile Source Control Measures of the Clean Air Plan.

**Energy Control Measures.** The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the Clean Air Plan are not applicable to the proposed project.

**Building Control Measures.** The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The proposed project would be required to comply with the latest Title 24 standards of the California Code of Regulations, established by the CEC, regarding energy conservation and green building standards. Therefore, the proposed project would not conflict with any of the Building Control Measures.

**Agriculture Control Measures.** The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the Project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the proposed project.

**Natural and Working Lands Control Measures.** The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban-tree plantings. Since the proposed project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the proposed project.

**Waste Management Control Measures.** The Waste Management Control Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the proposed project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

**Water Control Measures.** The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from

publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed project.

**Super GHG Control Measures.** The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the proposed project.

**Clean Air Plan Implementation.** As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the Project would not disrupt or hinder implementation of a control measure from the Clean Air Plan.

### *Criteria Pollutant Analysis*

The BAAQMD is currently designated as a nonattainment area for State and national ozone standards and national particulate matter ambient air quality standards. The BAAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential project-level construction- and operation-related air quality impacts.

**Short-Term Construction Emissions.** During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by demolition, grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO<sub>x</sub>, ROG, directly emitted particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>), and TACs such as diesel exhaust particulate matter.

Project construction activities would include site preparation, grading, building, paving, and architectural coating (painting). Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM<sub>10</sub> emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM<sub>10</sub> emissions would

depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM<sub>10</sub>). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust related PM<sub>10</sub> emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO<sub>2</sub>, NO<sub>x</sub>, ROG, and some soot particulate (PM<sub>2.5</sub> and PM<sub>10</sub>) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

As discussed above, CalEEMod was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. As indicated previously, construction of the proposed project would begin in July 2022 and be completed by March 2023, a duration of approximately 9 months. This analysis also assumes use of Tier 2 construction equipment. Other detailed construction information is currently unavailable therefore, this analysis utilizes CalEEMod default assumptions. Construction-related emissions are presented in Table A, below. CalEEMod output sheets are included in Attachment A.

**Table A: Project Construction Emissions (in Pounds Per Day)**

Project Construction	ROG	NO <sub>x</sub>	Exhaust PM <sub>10</sub>	Fugitive Dust PM <sub>10</sub>	Exhaust PM <sub>2.5</sub>	Fugitive Dust PM <sub>2.5</sub>
Average Daily Emissions	1.9	13.8	0.5	0.5	0.5	0.2
<b>BAAQMD Thresholds</b>	<b>54.0</b>	<b>54.0</b>	<b>82.0</b>	<b>BMP</b>	<b>54.0</b>	<b>BMP</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022).

BAAQMD = Bay Area Air Quality Management District

BMP = Best Management Practices

NO<sub>x</sub> = nitrous oxides

ROG = reactive organic gases

PM<sub>10</sub> = particulate matter 10 microns in diameter

PM<sub>2.5</sub> = particulate matter 2.5 microns in diameter

As shown in Table A, construction emissions associated with the project would not exceed the BAAQMD's thresholds for ROG, NO<sub>x</sub>, CO, exhaust PM<sub>10</sub>, and exhaust PM<sub>2.5</sub> emissions. In addition to the construction period thresholds of significance, Policy PHS-3.3 of the City's General Plan requires the implementation of the BAAQMD's Basic Construction Mitigation Measures to reduce construction fugitive dust impacts to a less-than-significant level. Implementation of Mitigation Measure AIR-1 would ensure that the proposed project incorporates the Basic Construction Mitigation Measures and ensures that short-term construction period air quality impacts would be less than significant.



**Mitigation Measure AIR-1**

Consistent with the Bay Area Air Quality Management District (BAAQMD) Basic Construction Mitigation Measures, the following controls are required to be included as specifications for the proposed project and implemented at the construction site:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.
- Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with manufacturers' specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- A publicly-visible sign shall be posted with the telephone number and person to contact at the City of Suisun City regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.



As shown in Table A, construction emissions associated with the project would not exceed the significance criteria for ROG, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> emissions. Therefore, with implementation of Mitigation Measure AIR-1, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State ambient air quality standards (AAQS).

**Long-Term Operational Emissions.** Long-term air pollutant emission impacts are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings and the use of landscape maintenance equipment) related to the proposed project.

PM<sub>10</sub> emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM<sub>10</sub> occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity and natural gas are used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity or natural gas) and the emission factor of the fuel source. Major sources of energy demand for the proposed project could include building mechanical systems, such as heating and air conditioning and lighting. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources. Area source emissions associated with the project would include emissions from the use of landscaping equipment.

Emission estimates for operation of the project were calculated using CalEEMod. The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on release or, in the case of vehicle emissions associated with the project, emissions are released in other areas of the Air Basin. The daily and annual emissions associated with project operational trip generation, energy, and area sources are identified in Table B, below, for ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. CalEEMod output sheets are included in Attachment A.

The results shown in Table B indicate the project would not exceed the significance criteria for daily or annual ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions; therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

### *Sensitive Receptors*

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

**Table B: Project Operational Emissions**

	ROG	NO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Pounds Per Day</b>				
Area Source Emissions	0.6	<0.1	<0.1	<0.1
Energy Source Emissions	<0.1	<0.1	<0.1	<0.1
Mobile Source Emissions	0.4	0.3	0.6	0.2
<b>Total Emissions</b>	<b>1.1</b>	<b>0.4</b>	<b>0.6</b>	<b>0.2</b>
<b>BAAQMD Thresholds</b>	<b>54.0</b>	<b>54.0</b>	<b>82.0</b>	<b>54.0</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>Tons Per Year</b>				
Area Source Emissions	0.1	<0.1	0.0	0.0
Energy Source Emissions	<0.1	<0.1	<0.1	<0.1
Mobile Source Emissions	0.1	0.1	0.1	<0.1
<b>Total Emissions</b>	<b>0.2</b>	<b>0.1</b>	<b>0.1</b>	<b>&lt;0.1</b>
<b>BAAQMD Thresholds</b>	<b>10.0</b>	<b>10.0</b>	<b>15.0</b>	<b>10.0</b>
<b>Exceed Threshold?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022).

Note: Some values may not appear to add up correctly due to rounding.

BAAQMD = Bay Area Air Quality Management District

NO<sub>x</sub> = nitrous oxides

ROG = reactive organic gases

PM<sub>10</sub> = particulate matter 10 microns in diameter

PM<sub>2.5</sub> = particulate matter 2.5 microns in diameter

According to the BAAQMD, a project would result in a significant impact if it would: individually expose sensitive receptors to TACs resulting in an increased cancer risk greater than 10.0 in one million, an increased non-cancer risk of greater than 1.0 on the hazard index (chronic or acute), or an annual average ambient PM<sub>2.5</sub> increase greater than 0.3 micrograms per cubic meter (µg/m<sup>3</sup>). A significant cumulative impact would occur if the project, in combination with other projects located within a 1,000-foot radius of the project site, would expose sensitive receptors to TACs resulting in an increased cancer risk greater than 100.0 in one million, an increased non-cancer risk of greater than 10.0 on the hazard index (chronic), or an ambient PM<sub>2.5</sub> increase greater than 0.8 µg/m<sup>3</sup> on an annual average basis. Impacts from substantial pollutant concentrations are discussed below.

The proposed project site is located in an urban area in close proximity to existing residential uses that could be exposed to diesel emission exhaust during the construction period. The nearest sensitive receptors are identified as the single-family homes located directly east, adjacent to the project boundary. As such, to estimate the potential cancer risk from project construction equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location (i.e., a nearby residential land use). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using CARB's exposure methodology, with the air dispersion modeling performed using the EPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and site-specific meteorological data.

Table C identifies the results of the analysis, assuming the use of Tier 2 construction equipment. Model snap shots of the sources are provided in Attachment B.

**Table C: Unmitigated Inhalation Health Risks from Project Construction to Off-Site Receptors**

Project Construction	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Annual PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )
Maximally Exposed Individual	46.2	0.054	0.27
<b>Threshold</b>	<b>10.0</b>	<b>1.0</b>	<b>0.30</b>
<b>Exceed?</b>	<b>Yes</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022).

µg/m<sup>3</sup> = micrograms per cubic meter

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

As shown in Table C, the risk associated with project construction at the maximally exposed individual (MEI) would be 46.2 in one million, which would exceed the BAAQMD cancer risk of 10 in one million. The total chronic hazard index would be 0.054, which would be below the threshold of 1.0. The results of the analysis indicate that the total PM<sub>2.5</sub> concentration would be 0.27 µg/m<sup>3</sup>, which would also be below the BAAQMD significance threshold of 0.30 µg/m<sup>3</sup>. Therefore, implementation of Mitigation Measure AIR-2 would be required to reduce substantial pollutant concentrations during project construction.

**Mitigation Measure AIR-2**

During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier 4 emissions standards or equivalent.

Table D identifies the results of the analysis with implementation of Mitigation Measure AIR-2.

**Table D: Mitigated Inhalation Health Risks from Project Construction to Off-Site Receptors**

Project Construction	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Annual PM <sub>2.5</sub> Concentration (µg/m <sup>3</sup> )
Maximally Exposed Individual	5.2	0.007	0.03
<b>Threshold</b>	<b>10.0</b>	<b>1.0</b>	<b>0.30</b>
<b>Exceed?</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: LSA (March 2022).

µg/m<sup>3</sup> = micrograms per cubic meter

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

As shown in Table D, the mitigated cancer risk at the MEI would be 5.2 in one million, which would not exceed the BAAQMD cancer risk of 10 in one million. In addition, the total PM<sub>2.5</sub> concentration would be 0.03 µg/m<sup>3</sup>, which would also not exceed the BAAQMD significance threshold of 0.30 µg/m<sup>3</sup>. Therefore, with implementation of Mitigation Measure AIR-2, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations. Once the project is constructed, the project would not be a source of substantial emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction or operation.

### *Objectionable Odors*

During construction, the various diesel-powered vehicles and equipment in use on site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the project site. Additionally, the proposed uses that would be developed within the project site are not expected to produce any offensive odors that would result in frequent odor complaints. The proposed project would not include sensitive receptors; therefore, odor impacts on the project do not require further evaluation.

## **Greenhouse Gas Emissions**

### *Generate Greenhouse Gas Emissions*

This section discusses the project's impacts related to the release of GHG emissions for both construction and operational phases of the project.

**Construction GHG Emissions.** Construction activities, such as site preparation, site grading, on-site heavy-duty construction vehicles, equipment hauling materials to and from the project site, and motor vehicles transporting the construction crew would produce combustion emissions from various sources. During construction of the proposed project, GHGs would be emitted through the operation of construction equipment and from worker and builder supply vendor vehicles, each of which typically uses fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O. Furthermore, CH<sub>4</sub> is emitted during the fueling of heavy equipment. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

The BAAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that construction of the proposed project would generate a total of approximately 235.9 MT CO<sub>2</sub>e. Implementation of Mitigation Measure AIR-1 would reduce GHG emissions by reducing the amount of construction vehicle idling and by requiring the use of properly maintained equipment.

**Operational GHG Emissions.** Long-term GHG emissions are typically generated from mobile sources (e.g., vehicle trips), area sources (e.g., maintenance activities and landscaping), indirect emissions from sources associated with energy consumption, waste sources (land filling and waste disposal), and water sources (water supply and conveyance, treatment, and distribution). Mobile-source GHG emissions would include project-generated vehicle trips to and from the project. Area-source emissions would be associated with activities such as landscaping and maintenance on the project

site. Energy source emissions would be generated at off-site utility providers as a result of increased electricity demand generated by the project. Waste source emissions generated by the proposed project include energy generated by land filling and other methods of disposal related to transporting and managing project generated waste. In addition, water source emissions associated with the proposed project are generated by water supply and conveyance, water treatment, water distribution, and wastewater treatment. Emission estimates for operation of the project were calculated using CalEEMod and are shown in Table E.

**Table E: GHG Emissions (Metric Tons Per Year)**

Emissions Source	Operational Emissions				
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	Percent of Total
Area Source Emissions	<0.1	<0.1	0.0	<0.1	<1
Energy Source Emissions	30.1	<0.1	<0.1	30.4	12
Mobile Source Emissions	88.3	<0.1	<0.1	89.9	35
Waste Source Emissions	54.8	3.2	0.0	135.8	52
Water Source Emissions	1.8	0.1	<0.1	3.7	1
<b>Total Annual Emissions</b>				<b>259.9</b>	<b>100</b>
<b>BAAQMD 2023 Threshold</b>				<b>968</b>	-
<b>Exceed Threshold?</b>				<b>No</b>	-

Source: LSA (March 2022).

BAAQMD = Bay Area Air Quality Management District

CH<sub>4</sub> = methane

CO<sub>2</sub> = carbon dioxide

CO<sub>2</sub>e = carbon dioxide equivalent

N<sub>2</sub>O = nitrous oxide

As discussed above, a project would have less-than-significant GHG emissions if it would meet one or more of the following criteria: result in operational-related GHG emissions of less than 968 MT CO<sub>2</sub>e/yr or result in operational-related GHG emissions of less than 4.0 MT CO<sub>2</sub>e per service population (residents plus employees). As shown in Table E, the proposed project would generate approximately 259.9 MT CO<sub>2</sub>e/yr, which would be well below the numeric threshold of 968 MT CO<sub>2</sub>e. Therefore, the proposed project would not generate GHG emissions that would have a significant effect on the environment.

#### *Consistency with Greenhouse Gas Reduction Plans*

The City has not adopted a formal Climate Action Plan or GHG reduction plan. Therefore, the project was also analyzed for consistency with the CARB Scoping Plan measures. The following discussion evaluates the proposed project according to the goals of AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197.

AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,<sup>8</sup> to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32 and EO B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. As identified above, the proposed project would comply with the latest Title 24 standards of the California Code of Regulations, regarding energy conservation and green building standards. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would be required to comply with the latest Title 24 standards of the California Code of Regulations, which includes a variety of different measures, including reduction of wastewater and water use. In addition, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance basins. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by 2025, resulting in a 3 percent decrease in average vehicle emissions for all vehicles by 2020. Vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. In addition, the proposed project is not expected to generate a substantial number of daily trips. Therefore, the proposed project would not conflict with the identified transportation and motor vehicle measures.

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<sup>8</sup> CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

The proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197 and would be consistent with applicable State plans and programs designed to reduce GHG emissions. Therefore, the proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

## CONCLUSION

Based on the analysis presented above, with implementation of Mitigation Measure AIR-1, construction of the proposed project would not result in the generation of criteria air pollutants that would exceed BAAQMD thresholds of significance. Operational emissions associated with the proposed project would also not exceed BAAQMD established significance thresholds. With implementation of Mitigation Measure AIR-2, the proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The proposed project would also not result in objectionable odors affecting a substantial number of people. In addition, the project would not result in substantial GHG emissions. Additionally, the project would not conflict with the State's GHG emissions reductions objectives embodied in AB 32, EO B-30-15, SB 32, and AB 197. Therefore, the proposed project's incremental contribution to cumulative GHG emissions would not be cumulatively considerable.

Attachments: A: CalEEMod Output Sheets  
B: Construction HRA Model Snapshots

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**ATTACHMENT**

**CALEEMOD OUTPUT SHEETS**



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Suisun City Tractor Supply Company Project****Bay Area AQMD Air District, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	95.00	Space	2.61	113,692.00	0
Hardware/Paint Store	24.36	1000sqft	0.56	24,363.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	64
<b>Climate Zone</b>	4			<b>Operational Year</b>	2023
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - EMFAC Off-Model Adjustment Factors - SAFE Vehicle Rules applied.

Land Use - Free standing Tractor Supply Company 22,443 sf and permanent trailer and equipment display area 1,920 sf. 95 parking spaces. Project site 3.17 acres.

Construction Phase - Project construction beginning 07/01/22. Project operational 03/01/2023.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Trips and VMT - Defaults.

On-road Fugitive Dust - Defaults.

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Grading - Defaults.

Architectural Coating - Defaults.

Vehicle Trips - Trip Generation - 180 ADT.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Road Dust - Defaults.

Consumer Products - Defaults.

Area Coating - Defaults.

Landscape Equipment - Defaults.

Energy Use - Defaults.

Water And Wastewater - Defaults.

Solid Waste - Defaults.

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and use of Tier 2 construction equipment for equipment rated with 50 or more horsepower.

Fleet Mix - Defaults.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 2

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	230.00	124.00
tblLandUse	LandUseSquareFeet	38,000.00	113,692.00
tblLandUse	LandUseSquareFeet	24,360.00	24,363.00
tblLandUse	LotAcreage	0.86	2.61
tblVehicleTrips	ST_TR	9.14	7.40
tblVehicleTrips	SU_TR	9.14	7.40
tblVehicleTrips	WD_TR	9.14	7.40

**2.0 Emissions Summary**

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## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1287	1.1700	1.1794	2.3200e-003	0.1133	0.0565	0.1698	0.0487	0.0530	0.1017	0.0000	205.1121	205.1121	0.0401	4.7700e-003	207.5360
2023	0.1701	0.1379	0.1856	3.2000e-004	3.9800e-003	6.6900e-003	0.0107	1.0700e-003	6.2700e-003	7.3400e-003	0.0000	28.1231	28.1231	6.5300e-003	2.8000e-004	28.3690
<b>Maximum</b>	<b>0.1701</b>	<b>1.1700</b>	<b>1.1794</b>	<b>2.3200e-003</b>	<b>0.1133</b>	<b>0.0565</b>	<b>0.1698</b>	<b>0.0487</b>	<b>0.0530</b>	<b>0.1017</b>	<b>0.0000</b>	<b>205.1121</b>	<b>205.1121</b>	<b>0.0401</b>	<b>4.7700e-003</b>	<b>207.5360</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0932	1.6483	1.3033	2.3200e-003	0.0707	0.0574	0.1281	0.0273	0.0574	0.0847	0.0000	205.1119	205.1119	0.0401	4.7700e-003	207.5358
2023	0.1677	0.2446	0.2075	3.2000e-004	3.9800e-003	8.7000e-003	0.0127	1.0700e-003	8.6900e-003	9.7600e-003	0.0000	28.1231	28.1231	6.5300e-003	2.8000e-004	28.3690
<b>Maximum</b>	<b>0.1677</b>	<b>1.6483</b>	<b>1.3033</b>	<b>2.3200e-003</b>	<b>0.0707</b>	<b>0.0574</b>	<b>0.1281</b>	<b>0.0273</b>	<b>0.0574</b>	<b>0.0847</b>	<b>0.0000</b>	<b>205.1119</b>	<b>205.1119</b>	<b>0.0401</b>	<b>4.7700e-003</b>	<b>207.5358</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	12.69	-44.73	-10.68	0.00	36.33	-4.74	21.97	43.06	-11.55	13.38	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2022	9-30-2022	0.6809	0.8860
2	10-1-2022	12-31-2022	0.6232	0.8616
3	1-1-2023	3-31-2023	0.3127	0.4159
		Highest	0.6809	0.8860

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
Energy	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	30.1447	30.1447	4.4400e-003	5.9000e-004	30.4307
Mobile	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379
Waste						0.0000	0.0000		0.0000	0.0000	54.8340	0.0000	54.8340	3.2406	0.0000	135.8488
Water						0.0000	0.0000		0.0000	0.0000	0.5725	1.2615	1.8340	0.0590	1.4100e-003	3.7301
<b>Total</b>	<b>0.1841</b>	<b>0.0673</b>	<b>0.5328</b>	<b>9.7000e-004</b>	<b>0.0967</b>	<b>9.6000e-004</b>	<b>0.0976</b>	<b>0.0258</b>	<b>9.0000e-004</b>	<b>0.0267</b>	<b>55.4064</b>	<b>119.6886</b>	<b>175.0950</b>	<b>3.3114</b>	<b>6.9400e-003</b>	<b>259.9497</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
Energy	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	30.1447	30.1447	4.4400e-003	5.9000e-004	30.4307
Mobile	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379
Waste						0.0000	0.0000		0.0000	0.0000	54.8340	0.0000	54.8340	3.2406	0.0000	135.8488
Water						0.0000	0.0000		0.0000	0.0000	0.5725	1.2615	1.8340	0.0590	1.4100e-003	3.7301
<b>Total</b>	<b>0.1841</b>	<b>0.0673</b>	<b>0.5328</b>	<b>9.7000e-004</b>	<b>0.0967</b>	<b>9.6000e-004</b>	<b>0.0976</b>	<b>0.0258</b>	<b>9.0000e-004</b>	<b>0.0267</b>	<b>55.4064</b>	<b>119.6886</b>	<b>175.0950</b>	<b>3.3114</b>	<b>6.9400e-003</b>	<b>259.9497</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2022	7/7/2022	5	5	
2	Grading	Grading	7/8/2022	7/19/2022	5	8	
3	Building Construction	Building Construction	7/20/2022	1/9/2023	5	124	

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

4	Paving	Paving	1/10/2023	2/2/2023	5	18
5	Architectural Coating	Architectural Coating	2/3/2023	2/28/2023	5	18

**Acres of Grading (Site Preparation Phase): 7.5****Acres of Grading (Grading Phase): 8****Acres of Paving: 2.61****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 36,545; Non-Residential Outdoor: 12,182; Striped Parking Area: 6,822 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

**3.2 Site Preparation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0491	0.0000	0.0491	0.0253	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9300e-003	0.0827	0.0492	1.0000e-004		4.0300e-003	4.0300e-003		3.7100e-003	3.7100e-003	0.0000	8.3599	8.3599	2.7000e-003	0.0000	8.4274
<b>Total</b>	<b>7.9300e-003</b>	<b>0.0827</b>	<b>0.0492</b>	<b>1.0000e-004</b>	<b>0.0491</b>	<b>4.0300e-003</b>	<b>0.0532</b>	<b>0.0253</b>	<b>3.7100e-003</b>	<b>0.0290</b>	<b>0.0000</b>	<b>8.3599</b>	<b>8.3599</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.4274</b>



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	1.0000e-005	0.2887
<b>Total</b>	<b>1.2000e-004</b>	<b>9.0000e-005</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2860</b>	<b>0.2860</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.2887</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0221	0.0000	0.0221	0.0114	0.0000	0.0114	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0200e-003	0.0843	0.0574	1.0000e-004		2.3700e-003	2.3700e-003		2.3700e-003	2.3700e-003	0.0000	8.3598	8.3598	2.7000e-003	0.0000	8.4274
<b>Total</b>	<b>3.0200e-003</b>	<b>0.0843</b>	<b>0.0574</b>	<b>1.0000e-004</b>	<b>0.0221</b>	<b>2.3700e-003</b>	<b>0.0245</b>	<b>0.0114</b>	<b>2.3700e-003</b>	<b>0.0137</b>	<b>0.0000</b>	<b>8.3598</b>	<b>8.3598</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.4274</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	1.0000e-005	0.2887
<b>Total</b>	<b>1.2000e-004</b>	<b>9.0000e-005</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2860</b>	<b>0.2860</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.2887</b>

**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0283	0.0000	0.0283	0.0137	0.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
<b>Total</b>	<b>7.7900e-003</b>	<b>0.0834</b>	<b>0.0611</b>	<b>1.2000e-004</b>	<b>0.0283</b>	<b>3.7600e-003</b>	<b>0.0321</b>	<b>0.0137</b>	<b>3.4600e-003</b>	<b>0.0172</b>	<b>0.0000</b>	<b>10.4219</b>	<b>10.4219</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>10.5062</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.2000e-004	1.4300e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3813	0.3813	1.0000e-005	1.0000e-005	0.3849
<b>Total</b>	<b>1.6000e-004</b>	<b>1.2000e-004</b>	<b>1.4300e-003</b>	<b>0.0000</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>4.8000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.3813</b>	<b>0.3813</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.3849</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	6.1600e-003	0.0000	6.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.0400e-003	0.1051	0.0760	1.2000e-004		3.0900e-003	3.0900e-003		3.0900e-003	3.0900e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
<b>Total</b>	<b>4.0400e-003</b>	<b>0.1051</b>	<b>0.0760</b>	<b>1.2000e-004</b>	<b>0.0128</b>	<b>3.0900e-003</b>	<b>0.0158</b>	<b>6.1600e-003</b>	<b>3.0900e-003</b>	<b>9.2500e-003</b>	<b>0.0000</b>	<b>10.4219</b>	<b>10.4219</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>10.5062</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.2000e-004	1.4300e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3813	0.3813	1.0000e-005	1.0000e-005	0.3849
<b>Total</b>	<b>1.6000e-004</b>	<b>1.2000e-004</b>	<b>1.4300e-003</b>	<b>0.0000</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>4.8000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.3813</b>	<b>0.3813</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.3849</b>

**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1007	0.9213	0.9654	1.5900e-003		0.0477	0.0477		0.0449	0.0449	0.0000	136.7179	136.7179	0.0328	0.0000	137.5367
<b>Total</b>	<b>0.1007</b>	<b>0.9213</b>	<b>0.9654</b>	<b>1.5900e-003</b>		<b>0.0477</b>	<b>0.0477</b>		<b>0.0449</b>	<b>0.0449</b>	<b>0.0000</b>	<b>136.7179</b>	<b>136.7179</b>	<b>0.0328</b>	<b>0.0000</b>	<b>137.5367</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-003	0.0758	0.0221	2.9000e-004	8.9000e-003	7.8000e-004	9.6800e-003	2.5800e-003	7.5000e-004	3.3200e-003	0.0000	27.9478	27.9478	6.1000e-004	4.1400e-003	29.1979
Worker	9.0800e-003	6.5400e-003	0.0790	2.3000e-004	0.0261	1.4000e-004	0.0263	6.9500e-003	1.3000e-004	7.0800e-003	0.0000	20.9974	20.9974	6.5000e-004	6.1000e-004	21.1942
<b>Total</b>	<b>0.0120</b>	<b>0.0824</b>	<b>0.1011</b>	<b>5.2000e-004</b>	<b>0.0350</b>	<b>9.2000e-004</b>	<b>0.0359</b>	<b>9.5300e-003</b>	<b>8.8000e-004</b>	<b>0.0104</b>	<b>0.0000</b>	<b>48.9452</b>	<b>48.9452</b>	<b>1.2600e-003</b>	<b>4.7500e-003</b>	<b>50.3921</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0739	1.3763	1.0663	1.5900e-003		0.0511	0.0511		0.0511	0.0511	0.0000	136.7177	136.7177	0.0328	0.0000	137.5366
<b>Total</b>	<b>0.0739</b>	<b>1.3763</b>	<b>1.0663</b>	<b>1.5900e-003</b>		<b>0.0511</b>	<b>0.0511</b>		<b>0.0511</b>	<b>0.0511</b>	<b>0.0000</b>	<b>136.7177</b>	<b>136.7177</b>	<b>0.0328</b>	<b>0.0000</b>	<b>137.5366</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-003	0.0758	0.0221	2.9000e-004	8.9000e-003	7.8000e-004	9.6800e-003	2.5800e-003	7.5000e-004	3.3200e-003	0.0000	27.9478	27.9478	6.1000e-004	4.1400e-003	29.1979
Worker	9.0800e-003	6.5400e-003	0.0790	2.3000e-004	0.0261	1.4000e-004	0.0263	6.9500e-003	1.3000e-004	7.0800e-003	0.0000	20.9974	20.9974	6.5000e-004	6.1000e-004	21.1942
<b>Total</b>	<b>0.0120</b>	<b>0.0824</b>	<b>0.1011</b>	<b>5.2000e-004</b>	<b>0.0350</b>	<b>9.2000e-004</b>	<b>0.0359</b>	<b>9.5300e-003</b>	<b>8.8000e-004</b>	<b>0.0104</b>	<b>0.0000</b>	<b>48.9452</b>	<b>48.9452</b>	<b>1.2600e-003</b>	<b>4.7500e-003</b>	<b>50.3921</b>

**3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7200e-003	0.0432	0.0487	8.0000e-005		2.1000e-003	2.1000e-003		1.9800e-003	1.9800e-003	0.0000	6.9541	6.9541	1.6500e-003	0.0000	6.9955
<b>Total</b>	<b>4.7200e-003</b>	<b>0.0432</b>	<b>0.0487</b>	<b>8.0000e-005</b>		<b>2.1000e-003</b>	<b>2.1000e-003</b>		<b>1.9800e-003</b>	<b>1.9800e-003</b>	<b>0.0000</b>	<b>6.9541</b>	<b>6.9541</b>	<b>1.6500e-003</b>	<b>0.0000</b>	<b>6.9955</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	3.0700e-003	9.6000e-004	1.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.3620	1.3620	3.0000e-005	2.0000e-004	1.4228
Worker	4.3000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0404	1.0404	3.0000e-005	3.0000e-005	1.0497
<b>Total</b>	<b>5.0000e-004</b>	<b>3.3600e-003</b>	<b>4.6900e-003</b>	<b>2.0000e-005</b>	<b>1.7800e-003</b>	<b>3.0000e-005</b>	<b>1.8000e-003</b>	<b>4.8000e-004</b>	<b>3.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.4025</b>	<b>2.4025</b>	<b>6.0000e-005</b>	<b>2.3000e-004</b>	<b>2.4725</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6900e-003	0.0699	0.0542	8.0000e-005		2.5700e-003	2.5700e-003		2.5700e-003	2.5700e-003	0.0000	6.9541	6.9541	1.6500e-003	0.0000	6.9955
<b>Total</b>	<b>3.6900e-003</b>	<b>0.0699</b>	<b>0.0542</b>	<b>8.0000e-005</b>		<b>2.5700e-003</b>	<b>2.5700e-003</b>		<b>2.5700e-003</b>	<b>2.5700e-003</b>	<b>0.0000</b>	<b>6.9541</b>	<b>6.9541</b>	<b>1.6500e-003</b>	<b>0.0000</b>	<b>6.9955</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	3.0700e-003	9.6000e-004	1.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.3620	1.3620	3.0000e-005	2.0000e-004	1.4228
Worker	4.3000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0404	1.0404	3.0000e-005	3.0000e-005	1.0497
<b>Total</b>	<b>5.0000e-004</b>	<b>3.3600e-003</b>	<b>4.6900e-003</b>	<b>2.0000e-005</b>	<b>1.7800e-003</b>	<b>3.0000e-005</b>	<b>1.8000e-003</b>	<b>4.8000e-004</b>	<b>3.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.4025</b>	<b>2.4025</b>	<b>6.0000e-005</b>	<b>2.3000e-004</b>	<b>2.4725</b>

**3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2600e-003	0.0791	0.1097	1.7000e-004		3.9200e-003	3.9200e-003		3.6200e-003	3.6200e-003	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	3.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0117</b>	<b>0.0791</b>	<b>0.1097</b>	<b>1.7000e-004</b>		<b>3.9200e-003</b>	<b>3.9200e-003</b>		<b>3.6200e-003</b>	<b>3.6200e-003</b>	<b>0.0000</b>	<b>14.7407</b>	<b>14.7407</b>	<b>4.6300e-003</b>	<b>0.0000</b>	<b>14.8565</b>



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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.9900e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1147	1.1147	3.0000e-005	3.0000e-005	1.1247
<b>Total</b>	<b>4.6000e-004</b>	<b>3.2000e-004</b>	<b>3.9900e-003</b>	<b>1.0000e-005</b>	<b>1.4200e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.1147</b>	<b>1.1147</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>1.1247</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5600e-003	0.1497	0.1260	1.7000e-004		5.2300e-003	5.2300e-003		5.2300e-003	5.2300e-003	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	3.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0110</b>	<b>0.1497</b>	<b>0.1260</b>	<b>1.7000e-004</b>		<b>5.2300e-003</b>	<b>5.2300e-003</b>		<b>5.2300e-003</b>	<b>5.2300e-003</b>	<b>0.0000</b>	<b>14.7407</b>	<b>14.7407</b>	<b>4.6300e-003</b>	<b>0.0000</b>	<b>14.8565</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.9900e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1147	1.1147	3.0000e-005	3.0000e-005	1.1247
<b>Total</b>	<b>4.6000e-004</b>	<b>3.2000e-004</b>	<b>3.9900e-003</b>	<b>1.0000e-005</b>	<b>1.4200e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.1147</b>	<b>1.1147</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>1.1247</b>

**3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1508					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
<b>Total</b>	<b>0.1525</b>	<b>0.0117</b>	<b>0.0163</b>	<b>3.0000e-005</b>		<b>6.4000e-004</b>	<b>6.4000e-004</b>		<b>6.4000e-004</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.2979</b>	<b>2.2979</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>2.3014</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	2.2000e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6131	0.6131	2.0000e-005	2.0000e-005	0.6186
<b>Total</b>	<b>2.5000e-004</b>	<b>1.7000e-004</b>	<b>2.2000e-003</b>	<b>1.0000e-005</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>7.9000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6131</b>	<b>0.6131</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.6186</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1508					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0300e-003	0.0212	0.0165	3.0000e-005		8.6000e-004	8.6000e-004		8.6000e-004	8.6000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
<b>Total</b>	<b>0.1518</b>	<b>0.0212</b>	<b>0.0165</b>	<b>3.0000e-005</b>		<b>8.6000e-004</b>	<b>8.6000e-004</b>		<b>8.6000e-004</b>	<b>8.6000e-004</b>	<b>0.0000</b>	<b>2.2979</b>	<b>2.2979</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>2.3014</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	2.2000e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6131	0.6131	2.0000e-005	2.0000e-005	0.6186
<b>Total</b>	<b>2.5000e-004</b>	<b>1.7000e-004</b>	<b>2.2000e-003</b>	<b>1.0000e-005</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>7.9000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6131</b>	<b>0.6131</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.6186</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379
Unmitigated	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379

**4.2 Trip Summary Information**

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	180.26	180.26	180.26	262,240	262,240
Parking Lot	0.00	0.00	0.00		
Total	180.26	180.26	180.26	262,240	262,240

**4.3 Trip Type Information**

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hardware/Paint Store	9.50	7.30	7.30	13.60	67.40	19.00	45	29	26
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hardware/Paint Store	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928
Parking Lot	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928

**5.0 Energy Detail**

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.1024	27.1024	4.3800e-003	5.3000e-004	27.3704
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.1024	27.1024	4.3800e-003	5.3000e-004	27.3704
NaturalGas Mitigated	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603
NaturalGas Unmitigated	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	57009.4	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>3.1000e-004</b>	<b>2.7900e-003</b>	<b>2.3500e-003</b>	<b>2.0000e-005</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>3.0422</b>	<b>3.0422</b>	<b>6.0000e-005</b>	<b>6.0000e-005</b>	<b>3.0603</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	57009.4	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>3.1000e-004</b>	<b>2.7900e-003</b>	<b>2.3500e-003</b>	<b>2.0000e-005</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>3.0422</b>	<b>3.0422</b>	<b>6.0000e-005</b>	<b>6.0000e-005</b>	<b>3.0603</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	253132	23.4207	3.7900e-003	4.6000e-004	23.6523
Parking Lot	39792.2	3.6817	6.0000e-004	7.0000e-005	3.7181
<b>Total</b>		<b>27.1024</b>	<b>4.3900e-003</b>	<b>5.3000e-004</b>	<b>27.3704</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	253132	23.4207	3.7900e-003	4.6000e-004	23.6523
Parking Lot	39792.2	3.6817	6.0000e-004	7.0000e-005	3.7181
<b>Total</b>		<b>27.1024</b>	<b>4.3900e-003</b>	<b>5.3000e-004</b>	<b>27.3704</b>

**6.0 Area Detail**



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
Unmitigated	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1025					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
<b>Total</b>	<b>0.1177</b>	<b>1.0000e-005</b>	<b>1.1000e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.1300e-003</b>	<b>2.1300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.2700e-003</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1025					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
<b>Total</b>	<b>0.1177</b>	<b>1.0000e-005</b>	<b>1.1000e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.1300e-003</b>	<b>2.1300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.2700e-003</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.8340	0.0590	1.4100e-003	3.7301
Unmitigated	1.8340	0.0590	1.4100e-003	3.7301

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	1.80441 / 1.10593	1.8340	0.0590	1.4100e-003	3.7301
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.8340</b>	<b>0.0590</b>	<b>1.4100e-003</b>	<b>3.7301</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	1.80441 / 1.10593	1.8340	0.0590	1.4100e-003	3.7301
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.8340</b>	<b>0.0590</b>	<b>1.4100e-003</b>	<b>3.7301</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	54.8340	3.2406	0.0000	135.8488
Unmitigated	54.8340	3.2406	0.0000	135.8488

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	270.13	54.8340	3.2406	0.0000	135.8488
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>54.8340</b>	<b>3.2406</b>	<b>0.0000</b>	<b>135.8488</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	270.13	54.8340	3.2406	0.0000	135.8488
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>54.8340</b>	<b>3.2406</b>	<b>0.0000</b>	<b>135.8488</b>

**9.0 Operational Offroad**

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## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
----------------	--------	-----------	-----------	-------------	-------------	-----------

**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Suisun City Tractor Supply Company Project****Bay Area AQMD Air District, Summer****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	95.00	Space	2.61	113,692.00	0
Hardware/Paint Store	24.36	1000sqft	0.56	24,363.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	64
<b>Climate Zone</b>	4			<b>Operational Year</b>	2023
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - EMFAC Off-Model Adjustment Factors - SAFE Vehicle Rules applied.

Land Use - Free standing Tractor Supply Company 22,443 sf and permanent trailer and equipment display area 1,920 sf. 95 parking spaces. Project site 3.17 acres.

Construction Phase - Project construction beginning 07/01/22. Project operational 03/01/2023.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Trips and VMT - Defaults.

On-road Fugitive Dust - Defaults.

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Grading - Defaults.

Architectural Coating - Defaults.

Vehicle Trips - Trip Generation - 180 ADT.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Road Dust - Defaults.

Consumer Products - Defaults.

Area Coating - Defaults.

Landscape Equipment - Defaults.

Energy Use - Defaults.

Water And Wastewater - Defaults.

Solid Waste - Defaults.

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and use of Tier 2 construction equipment for equipment rated with 50 or more horsepower.

Fleet Mix - Defaults.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 2



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	230.00	124.00
tblLandUse	LandUseSquareFeet	38,000.00	113,692.00
tblLandUse	LandUseSquareFeet	24,360.00	24,363.00
tblLandUse	LotAcreage	0.86	2.61
tblVehicleTrips	ST_TR	9.14	7.40
tblVehicleTrips	SU_TR	9.14	7.40
tblVehicleTrips	WD_TR	9.14	7.40

**2.0 Emissions Summary**

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## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2225	33.1151	20.1631	0.0394	19.8049	1.6134	21.4182	10.1417	1.4843	11.6260	0.0000	3,820.713 2	3,820.713 2	1.1958	0.0878	3,851.609 2
2023	16.9720	15.4584	17.8977	0.0356	0.6158	0.7080	1.3238	0.1669	0.6662	0.8331	0.0000	3,463.523 4	3,463.523 4	0.6284	0.0836	3,504.152 3
<b>Maximum</b>	<b>16.9720</b>	<b>33.1151</b>	<b>20.1631</b>	<b>0.0394</b>	<b>19.8049</b>	<b>1.6134</b>	<b>21.4182</b>	<b>10.1417</b>	<b>1.4843</b>	<b>11.6260</b>	<b>0.0000</b>	<b>3,820.713 2</b>	<b>3,820.713 2</b>	<b>1.1958</b>	<b>0.0878</b>	<b>3,851.609 2</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.4643	33.7530	23.4254	0.0394	8.9935	0.9469	9.9405	4.5853	0.9469	5.5322	0.0000	3,820.713 2	3,820.713 2	1.1958	0.0878	3,851.609 2
2023	16.8943	24.3581	19.7086	0.0356	0.6158	0.8647	1.4805	0.1669	0.8643	1.0311	0.0000	3,463.523 4	3,463.523 4	0.6284	0.0836	3,504.152 3
<b>Maximum</b>	<b>16.8943</b>	<b>33.7530</b>	<b>23.4254</b>	<b>0.0394</b>	<b>8.9935</b>	<b>0.9469</b>	<b>9.9405</b>	<b>4.5853</b>	<b>0.9469</b>	<b>5.5322</b>	<b>0.0000</b>	<b>3,820.713 2</b>	<b>3,820.713 2</b>	<b>1.1958</b>	<b>0.0878</b>	<b>3,851.609 2</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	9.09	-19.64	-13.33	0.00	52.94	21.96	49.78	53.90	15.78	47.32	0.00	0.00	0.00	0.00	0.00	0.00

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
Energy	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Mobile	0.4130	0.3253	2.8224	5.4800e-003	0.5519	4.1000e-003	0.5560	0.1470	3.8200e-003	0.1508		563.0159	563.0159	0.0408	0.0283	572.4578
<b>Total</b>	<b>1.0600</b>	<b>0.3407</b>	<b>2.8475</b>	<b>5.5700e-003</b>	<b>0.5519</b>	<b>5.3000e-003</b>	<b>0.5572</b>	<b>0.1470</b>	<b>5.0200e-003</b>	<b>0.1520</b>		<b>581.4174</b>	<b>581.4174</b>	<b>0.0412</b>	<b>0.0286</b>	<b>590.9701</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
Energy	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Mobile	0.4130	0.3253	2.8224	5.4800e-003	0.5519	4.1000e-003	0.5560	0.1470	3.8200e-003	0.1508		563.0159	563.0159	0.0408	0.0283	572.4578
<b>Total</b>	<b>1.0600</b>	<b>0.3407</b>	<b>2.8475</b>	<b>5.5700e-003</b>	<b>0.5519</b>	<b>5.3000e-003</b>	<b>0.5572</b>	<b>0.1470</b>	<b>5.0200e-003</b>	<b>0.1520</b>		<b>581.4174</b>	<b>581.4174</b>	<b>0.0412</b>	<b>0.0286</b>	<b>590.9701</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2022	7/7/2022	5	5	
2	Grading	Grading	7/8/2022	7/19/2022	5	8	
3	Building Construction	Building Construction	7/20/2022	1/9/2023	5	124	
4	Paving	Paving	1/10/2023	2/2/2023	5	18	
5	Architectural Coating	Architectural Coating	2/3/2023	2/28/2023	5	18	

**Acres of Grading (Site Preparation Phase): 7.5****Acres of Grading (Grading Phase): 8****Acres of Paving: 2.61****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 36,545; Non-Residential Outdoor: 12,182; Striped Parking Area: 6,822 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>19.6570</b>	<b>1.6126</b>	<b>21.2696</b>	<b>10.1025</b>	<b>1.4836</b>	<b>11.5860</b>		<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0524	0.0316	0.4653	1.3200e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		134.6513	134.6513	3.6700e-003	3.3600e-003	135.7437
<b>Total</b>	<b>0.0524</b>	<b>0.0316</b>	<b>0.4653</b>	<b>1.3200e-003</b>	<b>0.1479</b>	<b>7.7000e-004</b>	<b>0.1486</b>	<b>0.0392</b>	<b>7.1000e-004</b>	<b>0.0399</b>		<b>134.6513</b>	<b>134.6513</b>	<b>3.6700e-003</b>	<b>3.3600e-003</b>	<b>135.7437</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8457	0.0000	8.8457	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>1.2097</b>	<b>33.7214</b>	<b>22.9600</b>	<b>0.0380</b>	<b>8.8457</b>	<b>0.9462</b>	<b>9.7918</b>	<b>4.5461</b>	<b>0.9462</b>	<b>5.4923</b>	<b>0.0000</b>	<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0524	0.0316	0.4653	1.3200e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		134.6513	134.6513	3.6700e-003	3.3600e-003	135.7437
<b>Total</b>	<b>0.0524</b>	<b>0.0316</b>	<b>0.4653</b>	<b>1.3200e-003</b>	<b>0.1479</b>	<b>7.7000e-004</b>	<b>0.1486</b>	<b>0.0392</b>	<b>7.1000e-004</b>	<b>0.0399</b>		<b>134.6513</b>	<b>134.6513</b>	<b>3.6700e-003</b>	<b>3.3600e-003</b>	<b>135.7437</b>



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.046 4	2,872.046 4	0.9289		2,895.268 4
<b>Total</b>	<b>1.9486</b>	<b>20.8551</b>	<b>15.2727</b>	<b>0.0297</b>	<b>7.0826</b>	<b>0.9409</b>	<b>8.0234</b>	<b>3.4247</b>	<b>0.8656</b>	<b>4.2903</b>		<b>2,872.046 4</b>	<b>2,872.046 4</b>	<b>0.9289</b>		<b>2,895.268 4</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0436	0.0263	0.3878	1.1000e-003	0.1232	6.4000e-004	0.1239	0.0327	5.9000e-004	0.0333		112.2095	112.2095	3.0600e-003	2.8000e-003	113.1197
<b>Total</b>	<b>0.0436</b>	<b>0.0263</b>	<b>0.3878</b>	<b>1.1000e-003</b>	<b>0.1232</b>	<b>6.4000e-004</b>	<b>0.1239</b>	<b>0.0327</b>	<b>5.9000e-004</b>	<b>0.0333</b>		<b>112.2095</b>	<b>112.2095</b>	<b>3.0600e-003</b>	<b>2.8000e-003</b>	<b>113.1197</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
<b>Total</b>	<b>1.0093</b>	<b>26.2791</b>	<b>18.9906</b>	<b>0.0297</b>	<b>3.1872</b>	<b>0.7725</b>	<b>3.9596</b>	<b>1.5411</b>	<b>0.7725</b>	<b>2.3136</b>	<b>0.0000</b>	<b>2,872.046 4</b>	<b>2,872.046 4</b>	<b>0.9289</b>		<b>2,895.268 4</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0436	0.0263	0.3878	1.1000e-003	0.1232	6.4000e-004	0.1239	0.0327	5.9000e-004	0.0333		112.2095	112.2095	3.0600e-003	2.8000e-003	113.1197
<b>Total</b>	<b>0.0436</b>	<b>0.0263</b>	<b>0.3878</b>	<b>1.1000e-003</b>	<b>0.1232</b>	<b>6.4000e-004</b>	<b>0.1239</b>	<b>0.0327</b>	<b>5.9000e-004</b>	<b>0.0333</b>		<b>112.2095</b>	<b>112.2095</b>	<b>3.0600e-003</b>	<b>2.8000e-003</b>	<b>113.1197</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>		<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0496	1.2407	0.3685	4.8700e-003	0.1558	0.0132	0.1690	0.0448	0.0126	0.0575		522.0675	522.0675	0.0114	0.0774	545.4039
Worker	0.1629	0.0982	1.4477	4.1200e-003	0.4600	2.4000e-003	0.4624	0.1220	2.2100e-003	0.1242		418.9153	418.9153	0.0114	0.0105	422.3136
<b>Total</b>	<b>0.2125</b>	<b>1.3390</b>	<b>1.8162</b>	<b>8.9900e-003</b>	<b>0.6158</b>	<b>0.0156</b>	<b>0.6314</b>	<b>0.1669</b>	<b>0.0149</b>	<b>0.1817</b>		<b>940.9827</b>	<b>940.9827</b>	<b>0.0228</b>	<b>0.0878</b>	<b>967.7175</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.2517</b>	<b>23.3270</b>	<b>18.0727</b>	<b>0.0269</b>		<b>0.8652</b>	<b>0.8652</b>		<b>0.8652</b>	<b>0.8652</b>	<b>0.0000</b>	<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0496	1.2407	0.3685	4.8700e-003	0.1558	0.0132	0.1690	0.0448	0.0126	0.0575		522.0675	522.0675	0.0114	0.0774	545.4039
Worker	0.1629	0.0982	1.4477	4.1200e-003	0.4600	2.4000e-003	0.4624	0.1220	2.2100e-003	0.1242		418.9153	418.9153	0.0114	0.0105	422.3136
<b>Total</b>	<b>0.2125</b>	<b>1.3390</b>	<b>1.8162</b>	<b>8.9900e-003</b>	<b>0.6158</b>	<b>0.0156</b>	<b>0.6314</b>	<b>0.1669</b>	<b>0.0149</b>	<b>0.1817</b>		<b>940.9827</b>	<b>940.9827</b>	<b>0.0228</b>	<b>0.0878</b>	<b>967.7175</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.5728</b>	<b>14.3849</b>	<b>16.2440</b>	<b>0.0269</b>		<b>0.6997</b>	<b>0.6997</b>		<b>0.6584</b>	<b>0.6584</b>		<b>2,555.2099</b>	<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0250	0.9865	0.3150	4.6600e-003	0.1558	5.9700e-003	0.1617	0.0448	5.7100e-003	0.0506		500.1604	500.1604	0.0102	0.0739	522.4502
Worker	0.1515	0.0870	1.3387	3.9900e-003	0.4600	2.2800e-003	0.4623	0.1220	2.1000e-003	0.1241		408.1532	408.1532	0.0103	9.6800e-003	411.2961
<b>Total</b>	<b>0.1765</b>	<b>1.0735</b>	<b>1.6537</b>	<b>8.6500e-003</b>	<b>0.6158</b>	<b>8.2500e-003</b>	<b>0.6241</b>	<b>0.1669</b>	<b>7.8100e-003</b>	<b>0.1747</b>		<b>908.3135</b>	<b>908.3135</b>	<b>0.0205</b>	<b>0.0836</b>	<b>933.7463</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.2295</b>	<b>23.2846</b>	<b>18.0549</b>	<b>0.0269</b>		<b>0.8565</b>	<b>0.8565</b>		<b>0.8565</b>	<b>0.8565</b>	<b>0.0000</b>	<b>2,555.2099</b>	<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0250	0.9865	0.3150	4.6600e-003	0.1558	5.9700e-003	0.1617	0.0448	5.7100e-003	0.0506		500.1604	500.1604	0.0102	0.0739	522.4502
Worker	0.1515	0.0870	1.3387	3.9900e-003	0.4600	2.2800e-003	0.4623	0.1220	2.1000e-003	0.1241		408.1532	408.1532	0.0103	9.6800e-003	411.2961
<b>Total</b>	<b>0.1765</b>	<b>1.0735</b>	<b>1.6537</b>	<b>8.6500e-003</b>	<b>0.6158</b>	<b>8.2500e-003</b>	<b>0.6241</b>	<b>0.1669</b>	<b>7.8100e-003</b>	<b>0.1747</b>		<b>908.3135</b>	<b>908.3135</b>	<b>0.0205</b>	<b>0.0836</b>	<b>933.7463</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9181	8.7903	12.1905	0.0189		0.4357	0.4357		0.4025	0.4025		1,805.430 4	1,805.430 4	0.5673		1,819.612 2
Paving	0.3799					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.2980</b>	<b>8.7903</b>	<b>12.1905</b>	<b>0.0189</b>		<b>0.4357</b>	<b>0.4357</b>		<b>0.4025</b>	<b>0.4025</b>		<b>1,805.430 4</b>	<b>1,805.430 4</b>	<b>0.5673</b>		<b>1,819.612 2</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0541	0.0311	0.4781	1.4200e-003	0.1643	8.1000e-004	0.1651	0.0436	7.5000e-004	0.0443		145.7690	145.7690	3.6800e-003	3.4600e-003	146.8915
<b>Total</b>	<b>0.0541</b>	<b>0.0311</b>	<b>0.4781</b>	<b>1.4200e-003</b>	<b>0.1643</b>	<b>8.1000e-004</b>	<b>0.1651</b>	<b>0.0436</b>	<b>7.5000e-004</b>	<b>0.0443</b>		<b>145.7690</b>	<b>145.7690</b>	<b>3.6800e-003</b>	<b>3.4600e-003</b>	<b>146.8915</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8405	16.6372	13.9949	0.0189		0.5816	0.5816		0.5816	0.5816	0.0000	1,805.430 4	1,805.430 4	0.5673		1,819.612 2
Paving	0.3799					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.2204</b>	<b>16.6372</b>	<b>13.9949</b>	<b>0.0189</b>		<b>0.5816</b>	<b>0.5816</b>		<b>0.5816</b>	<b>0.5816</b>	<b>0.0000</b>	<b>1,805.430 4</b>	<b>1,805.430 4</b>	<b>0.5673</b>		<b>1,819.612 2</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0541	0.0311	0.4781	1.4200e-003	0.1643	8.1000e-004	0.1651	0.0436	7.5000e-004	0.0443		145.7690	145.7690	3.6800e-003	3.4600e-003	146.8915
<b>Total</b>	<b>0.0541</b>	<b>0.0311</b>	<b>0.4781</b>	<b>1.4200e-003</b>	<b>0.1643</b>	<b>8.1000e-004</b>	<b>0.1651</b>	<b>0.0436</b>	<b>7.5000e-004</b>	<b>0.0443</b>		<b>145.7690</b>	<b>145.7690</b>	<b>3.6800e-003</b>	<b>3.4600e-003</b>	<b>146.8915</b>



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	16.7506					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
<b>Total</b>	<b>16.9423</b>	<b>1.3030</b>	<b>1.8111</b>	<b>2.9700e-003</b>		<b>0.0708</b>	<b>0.0708</b>		<b>0.0708</b>	<b>0.0708</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0168</b>		<b>281.8690</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0298	0.0171	0.2630	7.8000e-004	0.0904	4.5000e-004	0.0908	0.0240	4.1000e-004	0.0244		80.1729	80.1729	2.0200e-003	1.9000e-003	80.7903
<b>Total</b>	<b>0.0298</b>	<b>0.0171</b>	<b>0.2630</b>	<b>7.8000e-004</b>	<b>0.0904</b>	<b>4.5000e-004</b>	<b>0.0908</b>	<b>0.0240</b>	<b>4.1000e-004</b>	<b>0.0244</b>		<b>80.1729</b>	<b>80.1729</b>	<b>2.0200e-003</b>	<b>1.9000e-003</b>	<b>80.7903</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	16.7506					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
<b>Total</b>	<b>16.8645</b>	<b>2.3524</b>	<b>1.8324</b>	<b>2.9700e-003</b>		<b>0.0951</b>	<b>0.0951</b>		<b>0.0951</b>	<b>0.0951</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0168</b>		<b>281.8690</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0298	0.0171	0.2630	7.8000e-004	0.0904	4.5000e-004	0.0908	0.0240	4.1000e-004	0.0244		80.1729	80.1729	2.0200e-003	1.9000e-003	80.7903
<b>Total</b>	<b>0.0298</b>	<b>0.0171</b>	<b>0.2630</b>	<b>7.8000e-004</b>	<b>0.0904</b>	<b>4.5000e-004</b>	<b>0.0908</b>	<b>0.0240</b>	<b>4.1000e-004</b>	<b>0.0244</b>		<b>80.1729</b>	<b>80.1729</b>	<b>2.0200e-003</b>	<b>1.9000e-003</b>	<b>80.7903</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4130	0.3253	2.8224	5.4800e-003	0.5519	4.1000e-003	0.5560	0.1470	3.8200e-003	0.1508		563.0159	563.0159	0.0408	0.0283	572.4578
Unmitigated	0.4130	0.3253	2.8224	5.4800e-003	0.5519	4.1000e-003	0.5560	0.1470	3.8200e-003	0.1508		563.0159	563.0159	0.0408	0.0283	572.4578

## 4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	180.26	180.26	180.26	262,240	262,240
Parking Lot	0.00	0.00	0.00		
Total	180.26	180.26	180.26	262,240	262,240

## 4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hardware/Paint Store	9.50	7.30	7.30	13.60	67.40	19.00	45	29	26
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

## 4.4 Fleet Mix

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hardware/Paint Store	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928
Parking Lot	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
NaturalGas Unmitigated	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hardware/Paint Store	156.19	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.6800e-003</b>	<b>0.0153</b>	<b>0.0129</b>	<b>9.0000e-005</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>18.3753</b>	<b>18.3753</b>	<b>3.5000e-004</b>	<b>3.4000e-004</b>	<b>18.4845</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hardware/Paint Store	0.15619	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.6800e-003</b>	<b>0.0153</b>	<b>0.0129</b>	<b>9.0000e-005</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>18.3753</b>	<b>18.3753</b>	<b>3.5000e-004</b>	<b>3.4000e-004</b>	<b>18.4845</b>

**6.0 Area Detail**

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
Unmitigated	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5616					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1300e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
<b>Total</b>	<b>0.6454</b>	<b>1.1000e-004</b>	<b>0.0122</b>	<b>0.0000</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0261</b>	<b>0.0261</b>	<b>7.0000e-005</b>		<b>0.0278</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Summer

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5616					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1300e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
<b>Total</b>	<b>0.6454</b>	<b>1.1000e-004</b>	<b>0.0122</b>	<b>0.0000</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0261</b>	<b>0.0261</b>	<b>7.0000e-005</b>		<b>0.0278</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

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8.1 Mitigation Measures Waste

9.0 Operational Offroad

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Stationary Equipment

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Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

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## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Suisun City Tractor Supply Company Project****Bay Area AQMD Air District, Winter****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	95.00	Space	2.61	113,692.00	0
Hardware/Paint Store	24.36	1000sqft	0.56	24,363.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	64
<b>Climate Zone</b>	4			<b>Operational Year</b>	2023
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - EMFAC Off-Model Adjustment Factors - SAFE Vehicle Rules applied.

Land Use - Free standing Tractor Supply Company 22,443 sf and permanent trailer and equipment display area 1,920 sf. 95 parking spaces. Project site 3.17 acres.

Construction Phase - Project construction beginning 07/01/22. Project operational 03/01/2023.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Trips and VMT - Defaults.

On-road Fugitive Dust - Defaults.

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Grading - Defaults.

Architectural Coating - Defaults.

Vehicle Trips - Trip Generation - 180 ADT.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Road Dust - Defaults.

Consumer Products - Defaults.

Area Coating - Defaults.

Landscape Equipment - Defaults.

Energy Use - Defaults.

Water And Wastewater - Defaults.

Solid Waste - Defaults.

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and use of Tier 2 construction equipment for equipment rated with 50 or more horsepower.

Fleet Mix - Defaults.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 2

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	230.00	124.00
tblLandUse	LandUseSquareFeet	38,000.00	113,692.00
tblLandUse	LandUseSquareFeet	24,360.00	24,363.00
tblLandUse	LotAcreage	0.86	2.61
tblVehicleTrips	ST_TR	9.14	7.40
tblVehicleTrips	SU_TR	9.14	7.40
tblVehicleTrips	WD_TR	9.14	7.40

**2.0 Emissions Summary**

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## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.1 Overall Construction (Maximum Daily Emission)****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	3.2236	33.1225	20.1416	0.0393	19.8049	1.6134	21.4182	10.1417	1.4843	11.6260	0.0000	3,811.144 8	3,811.144 8	1.1963	0.0895	3,842.204 7
2023	16.9728	15.5361	17.8519	0.0353	0.6158	0.7080	1.3238	0.1669	0.6663	0.8331	0.0000	3,435.308 2	3,435.308 2	0.6297	0.0853	3,476.462 7
<b>Maximum</b>	<b>16.9728</b>	<b>33.1225</b>	<b>20.1416</b>	<b>0.0393</b>	<b>19.8049</b>	<b>1.6134</b>	<b>21.4182</b>	<b>10.1417</b>	<b>1.4843</b>	<b>11.6260</b>	<b>0.0000</b>	<b>3,811.144 8</b>	<b>3,811.144 8</b>	<b>1.1963</b>	<b>0.0895</b>	<b>3,842.204 7</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.4672	33.7604	23.4039	0.0393	8.9935	0.9469	9.9405	4.5853	0.9469	5.5322	0.0000	3,811.144 8	3,811.144 8	1.1963	0.0895	3,842.204 7
2023	16.8951	24.4358	19.6628	0.0353	0.6158	0.8647	1.4805	0.1669	0.8643	1.0312	0.0000	3,435.308 2	3,435.308 2	0.6297	0.0853	3,476.462 6
<b>Maximum</b>	<b>16.8951</b>	<b>33.7604</b>	<b>23.4039</b>	<b>0.0393</b>	<b>8.9935</b>	<b>0.9469</b>	<b>9.9405</b>	<b>4.5853</b>	<b>0.9469</b>	<b>5.5322</b>	<b>0.0000</b>	<b>3,811.144 8</b>	<b>3,811.144 8</b>	<b>1.1963</b>	<b>0.0895</b>	<b>3,842.204 7</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	9.08	-19.60	-13.35	0.00	52.94	21.96	49.78	53.90	15.78	47.32	0.00	0.00	0.00	0.00	0.00	0.00

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
Energy	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Mobile	0.3623	0.3760	3.1413	5.1800e-003	0.5519	4.1100e-003	0.5560	0.1470	3.8200e-003	0.1508		532.3650	532.3650	0.0479	0.0312	542.8724
<b>Total</b>	<b>1.0094</b>	<b>0.3914</b>	<b>3.1664</b>	<b>5.2700e-003</b>	<b>0.5519</b>	<b>5.3100e-003</b>	<b>0.5572</b>	<b>0.1470</b>	<b>5.0200e-003</b>	<b>0.1520</b>		<b>550.7664</b>	<b>550.7664</b>	<b>0.0484</b>	<b>0.0316</b>	<b>561.3847</b>

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
Energy	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Mobile	0.3623	0.3760	3.1413	5.1800e-003	0.5519	4.1100e-003	0.5560	0.1470	3.8200e-003	0.1508		532.3650	532.3650	0.0479	0.0312	542.8724
<b>Total</b>	<b>1.0094</b>	<b>0.3914</b>	<b>3.1664</b>	<b>5.2700e-003</b>	<b>0.5519</b>	<b>5.3100e-003</b>	<b>0.5572</b>	<b>0.1470</b>	<b>5.0200e-003</b>	<b>0.1520</b>		<b>550.7664</b>	<b>550.7664</b>	<b>0.0484</b>	<b>0.0316</b>	<b>561.3847</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2022	7/7/2022	5	5	
2	Grading	Grading	7/8/2022	7/19/2022	5	8	
3	Building Construction	Building Construction	7/20/2022	1/9/2023	5	124	
4	Paving	Paving	1/10/2023	2/2/2023	5	18	
5	Architectural Coating	Architectural Coating	2/3/2023	2/28/2023	5	18	

**Acres of Grading (Site Preparation Phase): 7.5****Acres of Grading (Grading Phase): 8****Acres of Paving: 2.61****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 36,545; Non-Residential Outdoor: 12,182; Striped Parking Area: 6,822 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					19.6570	0.0000	19.6570	10.1025	0.0000	10.1025			0.0000			0.0000
Off-Road	3.1701	33.0835	19.6978	0.0380		1.6126	1.6126		1.4836	1.4836		3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>3.1701</b>	<b>33.0835</b>	<b>19.6978</b>	<b>0.0380</b>	<b>19.6570</b>	<b>1.6126</b>	<b>21.2696</b>	<b>10.1025</b>	<b>1.4836</b>	<b>11.5860</b>		<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0535	0.0390	0.4438	1.2300e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		125.0830	125.0830	4.1600e-003	3.8700e-003	126.3392
<b>Total</b>	<b>0.0535</b>	<b>0.0390</b>	<b>0.4438</b>	<b>1.2300e-003</b>	<b>0.1479</b>	<b>7.7000e-004</b>	<b>0.1486</b>	<b>0.0392</b>	<b>7.1000e-004</b>	<b>0.0399</b>		<b>125.0830</b>	<b>125.0830</b>	<b>4.1600e-003</b>	<b>3.8700e-003</b>	<b>126.3392</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.8457	0.0000	8.8457	4.5461	0.0000	4.5461			0.0000			0.0000
Off-Road	1.2097	33.7214	22.9600	0.0380		0.9462	0.9462		0.9462	0.9462	0.0000	3,686.0619	3,686.0619	1.1922		3,715.8655
<b>Total</b>	<b>1.2097</b>	<b>33.7214</b>	<b>22.9600</b>	<b>0.0380</b>	<b>8.8457</b>	<b>0.9462</b>	<b>9.7918</b>	<b>4.5461</b>	<b>0.9462</b>	<b>5.4923</b>	<b>0.0000</b>	<b>3,686.0619</b>	<b>3,686.0619</b>	<b>1.1922</b>		<b>3,715.8655</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0535	0.0390	0.4438	1.2300e-003	0.1479	7.7000e-004	0.1486	0.0392	7.1000e-004	0.0399		125.0830	125.0830	4.1600e-003	3.8700e-003	126.3392
<b>Total</b>	<b>0.0535</b>	<b>0.0390</b>	<b>0.4438</b>	<b>1.2300e-003</b>	<b>0.1479</b>	<b>7.7000e-004</b>	<b>0.1486</b>	<b>0.0392</b>	<b>7.1000e-004</b>	<b>0.0399</b>		<b>125.0830</b>	<b>125.0830</b>	<b>4.1600e-003</b>	<b>3.8700e-003</b>	<b>126.3392</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.046 4	2,872.046 4	0.9289		2,895.268 4
<b>Total</b>	<b>1.9486</b>	<b>20.8551</b>	<b>15.2727</b>	<b>0.0297</b>	<b>7.0826</b>	<b>0.9409</b>	<b>8.0234</b>	<b>3.4247</b>	<b>0.8656</b>	<b>4.2903</b>		<b>2,872.046 4</b>	<b>2,872.046 4</b>	<b>0.9289</b>		<b>2,895.268 4</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0446	0.0325	0.3699	1.0200e-003	0.1232	6.4000e-004	0.1239	0.0327	5.9000e-004	0.0333		104.2358	104.2358	3.4600e-003	3.2200e-003	105.2827
<b>Total</b>	<b>0.0446</b>	<b>0.0325</b>	<b>0.3699</b>	<b>1.0200e-003</b>	<b>0.1232</b>	<b>6.4000e-004</b>	<b>0.1239</b>	<b>0.0327</b>	<b>5.9000e-004</b>	<b>0.0333</b>		<b>104.2358</b>	<b>104.2358</b>	<b>3.4600e-003</b>	<b>3.2200e-003</b>	<b>105.2827</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	1.0093	26.2791	18.9906	0.0297		0.7725	0.7725		0.7725	0.7725	0.0000	2,872.046 4	2,872.046 4	0.9289		2,895.268 4
<b>Total</b>	<b>1.0093</b>	<b>26.2791</b>	<b>18.9906</b>	<b>0.0297</b>	<b>3.1872</b>	<b>0.7725</b>	<b>3.9596</b>	<b>1.5411</b>	<b>0.7725</b>	<b>2.3136</b>	<b>0.0000</b>	<b>2,872.046 4</b>	<b>2,872.046 4</b>	<b>0.9289</b>		<b>2,895.268 4</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0446	0.0325	0.3699	1.0200e-003	0.1232	6.4000e-004	0.1239	0.0327	5.9000e-004	0.0333		104.2358	104.2358	3.4600e-003	3.2200e-003	105.2827
<b>Total</b>	<b>0.0446</b>	<b>0.0325</b>	<b>0.3699</b>	<b>1.0200e-003</b>	<b>0.1232</b>	<b>6.4000e-004</b>	<b>0.1239</b>	<b>0.0327</b>	<b>5.9000e-004</b>	<b>0.0333</b>		<b>104.2358</b>	<b>104.2358</b>	<b>3.4600e-003</b>	<b>3.2200e-003</b>	<b>105.2827</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.7062</b>	<b>15.6156</b>	<b>16.3634</b>	<b>0.0269</b>		<b>0.8090</b>	<b>0.8090</b>		<b>0.7612</b>	<b>0.7612</b>		<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0491	1.3085	0.3814	4.8700e-003	0.1558	0.0133	0.1690	0.0448	0.0127	0.0575		522.2789	522.2789	0.0113	0.0775	545.6491
Worker	0.1664	0.1213	1.3808	3.8300e-003	0.4600	2.4000e-003	0.4624	0.1220	2.2100e-003	0.1242		389.1470	389.1470	0.0129	0.0120	393.0553
<b>Total</b>	<b>0.2155</b>	<b>1.4298</b>	<b>1.7622</b>	<b>8.7000e-003</b>	<b>0.6158</b>	<b>0.0157</b>	<b>0.6315</b>	<b>0.1669</b>	<b>0.0149</b>	<b>0.1818</b>		<b>911.4259</b>	<b>911.4259</b>	<b>0.0243</b>	<b>0.0895</b>	<b>938.7044</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2517	23.3270	18.0727	0.0269		0.8652	0.8652		0.8652	0.8652	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
<b>Total</b>	<b>1.2517</b>	<b>23.3270</b>	<b>18.0727</b>	<b>0.0269</b>		<b>0.8652</b>	<b>0.8652</b>		<b>0.8652</b>	<b>0.8652</b>	<b>0.0000</b>	<b>2,554.3336</b>	<b>2,554.3336</b>	<b>0.6120</b>		<b>2,569.6322</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0491	1.3085	0.3814	4.8700e-003	0.1558	0.0133	0.1690	0.0448	0.0127	0.0575		522.2789	522.2789	0.0113	0.0775	545.6491
Worker	0.1664	0.1213	1.3808	3.8300e-003	0.4600	2.4000e-003	0.4624	0.1220	2.2100e-003	0.1242		389.1470	389.1470	0.0129	0.0120	393.0553
<b>Total</b>	<b>0.2155</b>	<b>1.4298</b>	<b>1.7622</b>	<b>8.7000e-003</b>	<b>0.6158</b>	<b>0.0157</b>	<b>0.6315</b>	<b>0.1669</b>	<b>0.0149</b>	<b>0.1818</b>		<b>911.4259</b>	<b>911.4259</b>	<b>0.0243</b>	<b>0.0895</b>	<b>938.7044</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.5728	14.3849	16.2440	0.0269		0.6997	0.6997		0.6584	0.6584		2,555.2099	2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.5728</b>	<b>14.3849</b>	<b>16.2440</b>	<b>0.0269</b>		<b>0.6997</b>	<b>0.6997</b>		<b>0.6584</b>	<b>0.6584</b>		<b>2,555.2099</b>	<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	1.0439	0.3258	4.6700e-003	0.1558	6.0000e-003	0.1618	0.0448	5.7400e-003	0.0506		500.8758	500.8758	0.0102	0.0741	523.2201
Worker	0.1554	0.1074	1.2821	3.7100e-003	0.4600	2.2800e-003	0.4623	0.1220	2.1000e-003	0.1241		379.2225	379.2225	0.0117	0.0112	382.8365
<b>Total</b>	<b>0.1795</b>	<b>1.1512</b>	<b>1.6079</b>	<b>8.3800e-003</b>	<b>0.6158</b>	<b>8.2800e-003</b>	<b>0.6241</b>	<b>0.1669</b>	<b>7.8400e-003</b>	<b>0.1747</b>		<b>880.0983</b>	<b>880.0983</b>	<b>0.0219</b>	<b>0.0853</b>	<b>906.0566</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2295	23.2846	18.0549	0.0269		0.8565	0.8565		0.8565	0.8565	0.0000	2,555.2099	2,555.2099	0.6079		2,570.4061
<b>Total</b>	<b>1.2295</b>	<b>23.2846</b>	<b>18.0549</b>	<b>0.0269</b>		<b>0.8565</b>	<b>0.8565</b>		<b>0.8565</b>	<b>0.8565</b>	<b>0.0000</b>	<b>2,555.2099</b>	<b>2,555.2099</b>	<b>0.6079</b>		<b>2,570.4061</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0242	1.0439	0.3258	4.6700e-003	0.1558	6.0000e-003	0.1618	0.0448	5.7400e-003	0.0506		500.8758	500.8758	0.0102	0.0741	523.2201
Worker	0.1554	0.1074	1.2821	3.7100e-003	0.4600	2.2800e-003	0.4623	0.1220	2.1000e-003	0.1241		379.2225	379.2225	0.0117	0.0112	382.8365
<b>Total</b>	<b>0.1795</b>	<b>1.1512</b>	<b>1.6079</b>	<b>8.3800e-003</b>	<b>0.6158</b>	<b>8.2800e-003</b>	<b>0.6241</b>	<b>0.1669</b>	<b>7.8400e-003</b>	<b>0.1747</b>		<b>880.0983</b>	<b>880.0983</b>	<b>0.0219</b>	<b>0.0853</b>	<b>906.0566</b>



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9181	8.7903	12.1905	0.0189		0.4357	0.4357		0.4025	0.4025		1,805.430 4	1,805.430 4	0.5673		1,819.612 2
Paving	0.3799					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.2980</b>	<b>8.7903</b>	<b>12.1905</b>	<b>0.0189</b>		<b>0.4357</b>	<b>0.4357</b>		<b>0.4025</b>	<b>0.4025</b>		<b>1,805.430 4</b>	<b>1,805.430 4</b>	<b>0.5673</b>		<b>1,819.612 2</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0555	0.0383	0.4579	1.3200e-003	0.1643	8.1000e-004	0.1651	0.0436	7.5000e-004	0.0443		135.4366	135.4366	4.1800e-003	3.9800e-003	136.7273
<b>Total</b>	<b>0.0555</b>	<b>0.0383</b>	<b>0.4579</b>	<b>1.3200e-003</b>	<b>0.1643</b>	<b>8.1000e-004</b>	<b>0.1651</b>	<b>0.0436</b>	<b>7.5000e-004</b>	<b>0.0443</b>		<b>135.4366</b>	<b>135.4366</b>	<b>4.1800e-003</b>	<b>3.9800e-003</b>	<b>136.7273</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8405	16.6372	13.9949	0.0189		0.5816	0.5816		0.5816	0.5816	0.0000	1,805.430 4	1,805.430 4	0.5673		1,819.612 2
Paving	0.3799					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.2204</b>	<b>16.6372</b>	<b>13.9949</b>	<b>0.0189</b>		<b>0.5816</b>	<b>0.5816</b>		<b>0.5816</b>	<b>0.5816</b>	<b>0.0000</b>	<b>1,805.430 4</b>	<b>1,805.430 4</b>	<b>0.5673</b>		<b>1,819.612 2</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0555	0.0383	0.4579	1.3200e-003	0.1643	8.1000e-004	0.1651	0.0436	7.5000e-004	0.0443		135.4366	135.4366	4.1800e-003	3.9800e-003	136.7273
<b>Total</b>	<b>0.0555</b>	<b>0.0383</b>	<b>0.4579</b>	<b>1.3200e-003</b>	<b>0.1643</b>	<b>8.1000e-004</b>	<b>0.1651</b>	<b>0.0436</b>	<b>7.5000e-004</b>	<b>0.0443</b>		<b>135.4366</b>	<b>135.4366</b>	<b>4.1800e-003</b>	<b>3.9800e-003</b>	<b>136.7273</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	16.7506					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1917	1.3030	1.8111	2.9700e-003		0.0708	0.0708		0.0708	0.0708		281.4481	281.4481	0.0168		281.8690
<b>Total</b>	<b>16.9423</b>	<b>1.3030</b>	<b>1.8111</b>	<b>2.9700e-003</b>		<b>0.0708</b>	<b>0.0708</b>		<b>0.0708</b>	<b>0.0708</b>		<b>281.4481</b>	<b>281.4481</b>	<b>0.0168</b>		<b>281.8690</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0305	0.0211	0.2519	7.3000e-004	0.0904	4.5000e-004	0.0908	0.0240	4.1000e-004	0.0244		74.4901	74.4901	2.3000e-003	2.1900e-003	75.2000
<b>Total</b>	<b>0.0305</b>	<b>0.0211</b>	<b>0.2519</b>	<b>7.3000e-004</b>	<b>0.0904</b>	<b>4.5000e-004</b>	<b>0.0908</b>	<b>0.0240</b>	<b>4.1000e-004</b>	<b>0.0244</b>		<b>74.4901</b>	<b>74.4901</b>	<b>2.3000e-003</b>	<b>2.1900e-003</b>	<b>75.2000</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	16.7506					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1139	2.3524	1.8324	2.9700e-003		0.0951	0.0951		0.0951	0.0951	0.0000	281.4481	281.4481	0.0168		281.8690
<b>Total</b>	<b>16.8645</b>	<b>2.3524</b>	<b>1.8324</b>	<b>2.9700e-003</b>		<b>0.0951</b>	<b>0.0951</b>		<b>0.0951</b>	<b>0.0951</b>	<b>0.0000</b>	<b>281.4481</b>	<b>281.4481</b>	<b>0.0168</b>		<b>281.8690</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0305	0.0211	0.2519	7.3000e-004	0.0904	4.5000e-004	0.0908	0.0240	4.1000e-004	0.0244		74.4901	74.4901	2.3000e-003	2.1900e-003	75.2000
<b>Total</b>	<b>0.0305</b>	<b>0.0211</b>	<b>0.2519</b>	<b>7.3000e-004</b>	<b>0.0904</b>	<b>4.5000e-004</b>	<b>0.0908</b>	<b>0.0240</b>	<b>4.1000e-004</b>	<b>0.0244</b>		<b>74.4901</b>	<b>74.4901</b>	<b>2.3000e-003</b>	<b>2.1900e-003</b>	<b>75.2000</b>

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

## EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.3623	0.3760	3.1413	5.1800e-003	0.5519	4.1100e-003	0.5560	0.1470	3.8200e-003	0.1508		532.3650	532.3650	0.0479	0.0312	542.8724
Unmitigated	0.3623	0.3760	3.1413	5.1800e-003	0.5519	4.1100e-003	0.5560	0.1470	3.8200e-003	0.1508		532.3650	532.3650	0.0479	0.0312	542.8724

## 4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	180.26	180.26	180.26	262,240	262,240
Parking Lot	0.00	0.00	0.00		
Total	180.26	180.26	180.26	262,240	262,240

## 4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hardware/Paint Store	9.50	7.30	7.30	13.60	67.40	19.00	45	29	26
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

## 4.4 Fleet Mix

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hardware/Paint Store	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928
Parking Lot	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928

**5.0 Energy Detail**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
NaturalGas Unmitigated	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hardware/Paint Store	156.19	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.6800e-003</b>	<b>0.0153</b>	<b>0.0129</b>	<b>9.0000e-005</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>18.3753</b>	<b>18.3753</b>	<b>3.5000e-004</b>	<b>3.4000e-004</b>	<b>18.4845</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hardware/Paint Store	0.15619	1.6800e-003	0.0153	0.0129	9.0000e-005		1.1600e-003	1.1600e-003		1.1600e-003	1.1600e-003		18.3753	18.3753	3.5000e-004	3.4000e-004	18.4845
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.6800e-003</b>	<b>0.0153</b>	<b>0.0129</b>	<b>9.0000e-005</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>1.1600e-003</b>	<b>1.1600e-003</b>		<b>18.3753</b>	<b>18.3753</b>	<b>3.5000e-004</b>	<b>3.4000e-004</b>	<b>18.4845</b>

**6.0 Area Detail**

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
Unmitigated	0.6454	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5616					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1300e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
<b>Total</b>	<b>0.6454</b>	<b>1.1000e-004</b>	<b>0.0122</b>	<b>0.0000</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0261</b>	<b>0.0261</b>	<b>7.0000e-005</b>		<b>0.0278</b>



## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0826					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.5616					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1300e-003	1.1000e-004	0.0122	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0261	0.0261	7.0000e-005		0.0278
<b>Total</b>	<b>0.6454</b>	<b>1.1000e-004</b>	<b>0.0122</b>	<b>0.0000</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>0.0261</b>	<b>0.0261</b>	<b>7.0000e-005</b>		<b>0.0278</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

## Suisun City Tractor Supply Company Project - Bay Area AQMD Air District, Winter

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****9.0 Operational Offroad**

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Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
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**11.0 Vegetation**

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## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Suisun City Tractor Supply Company Project - Mitigated****Bay Area AQMD Air District, Annual****1.0 Project Characteristics****1.1 Land Usage**

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	95.00	Space	2.61	113,692.00	0
Hardware/Paint Store	24.36	1000sqft	0.56	24,363.00	0

**1.2 Other Project Characteristics**

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	64
<b>Climate Zone</b>	4			<b>Operational Year</b>	2023
<b>Utility Company</b>	Pacific Gas and Electric Company				
<b>CO2 Intensity (lb/MWhr)</b>	203.98	<b>CH4 Intensity (lb/MWhr)</b>	0.033	<b>N2O Intensity (lb/MWhr)</b>	0.004

**1.3 User Entered Comments & Non-Default Data**

Project Characteristics - EMFAC Off-Model Adjustment Factors - SAFE Vehicle Rules applied.

Land Use - Free standing Tractor Supply Company 22,443 sf and permanent trailer and equipment display area 1,920 sf. 95 parking spaces. Project site 3.17 acres.

Construction Phase - Project construction beginning 07/01/22. Project operational 03/01/2023.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Off-road Equipment - Defaults.

Trips and VMT - Defaults.

On-road Fugitive Dust - Defaults.

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Grading - Defaults.

Architectural Coating - Defaults.

Vehicle Trips - Trip Generation - 180 ADT.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Vehicle Emission Factors - Defaults.

Road Dust - Defaults.

Consumer Products - Defaults.

Area Coating - Defaults.

Landscape Equipment - Defaults.

Energy Use - Defaults.

Water And Wastewater - Defaults.

Solid Waste - Defaults.

Construction Off-road Equipment Mitigation - Assuming compliance with BAAQMD Basic Construction Mitigation Measures and use of Tier 2 construction equipment for equipment rated with 50 or more horsepower with level 3 diesel particulate filters mitigation.

Fleet Mix - Defaults.

Table Name	Column Name	Default Value	New Value
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	11.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	230.00	124.00
tblLandUse	LandUseSquareFeet	38,000.00	113,692.00
tblLandUse	LandUseSquareFeet	24,360.00	24,363.00
tblLandUse	LotAcreage	0.86	2.61
tblVehicleTrips	ST_TR	9.14	7.40
tblVehicleTrips	SU_TR	9.14	7.40
tblVehicleTrips	WD_TR	9.14	7.40

**2.0 Emissions Summary**

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## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.1 Overall Construction****Unmitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1287	1.1700	1.1794	2.3200e-003	0.1133	0.0565	0.1698	0.0487	0.0530	0.1017	0.0000	205.1121	205.1121	0.0401	4.7700e-003	207.5360
2023	0.1701	0.1379	0.1856	3.2000e-004	3.9800e-003	6.6900e-003	0.0107	1.0700e-003	6.2700e-003	7.3400e-003	0.0000	28.1231	28.1231	6.5300e-003	2.8000e-004	28.3690
<b>Maximum</b>	<b>0.1701</b>	<b>1.1700</b>	<b>1.1794</b>	<b>2.3200e-003</b>	<b>0.1133</b>	<b>0.0565</b>	<b>0.1698</b>	<b>0.0487</b>	<b>0.0530</b>	<b>0.1017</b>	<b>0.0000</b>	<b>205.1121</b>	<b>205.1121</b>	<b>0.0401</b>	<b>4.7700e-003</b>	<b>207.5360</b>

**Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0480	0.2528	1.2687	2.3200e-003	0.0707	7.2800e-003	0.0780	0.0273	7.2300e-003	0.0345	0.0000	205.1119	205.1119	0.0401	4.7700e-003	207.5358
2023	0.1600	0.0265	0.2062	3.2000e-004	3.9800e-003	8.1000e-004	4.7900e-003	1.0700e-003	8.1000e-004	1.8800e-003	0.0000	28.1231	28.1231	6.5300e-003	2.8000e-004	28.3690
<b>Maximum</b>	<b>0.1600</b>	<b>0.2528</b>	<b>1.2687</b>	<b>2.3200e-003</b>	<b>0.0707</b>	<b>7.2800e-003</b>	<b>0.0780</b>	<b>0.0273</b>	<b>7.2300e-003</b>	<b>0.0345</b>	<b>0.0000</b>	<b>205.1119</b>	<b>205.1119</b>	<b>0.0401</b>	<b>4.7700e-003</b>	<b>207.5358</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	30.38	78.64	-8.05	0.00	36.33	87.19	54.13	43.06	86.43	66.61	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	7-1-2022	9-30-2022	0.6809	0.1403
2	10-1-2022	12-31-2022	0.6232	0.1610
3	1-1-2023	3-31-2023	0.3127	0.1916
		Highest	0.6809	0.1916

**2.2 Overall Operational****Unmitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
Energy	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	30.1447	30.1447	4.4400e-003	5.9000e-004	30.4307
Mobile	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379
Waste						0.0000	0.0000		0.0000	0.0000	54.8340	0.0000	54.8340	3.2406	0.0000	135.8488
Water						0.0000	0.0000		0.0000	0.0000	0.5725	1.2615	1.8340	0.0590	1.4100e-003	3.7301
<b>Total</b>	<b>0.1841</b>	<b>0.0673</b>	<b>0.5328</b>	<b>9.7000e-004</b>	<b>0.0967</b>	<b>9.6000e-004</b>	<b>0.0976</b>	<b>0.0258</b>	<b>9.0000e-004</b>	<b>0.0267</b>	<b>55.4064</b>	<b>119.6886</b>	<b>175.0950</b>	<b>3.3114</b>	<b>6.9400e-003</b>	<b>259.9497</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****2.2 Overall Operational****Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
Energy	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	30.1447	30.1447	4.4400e-003	5.9000e-004	30.4307
Mobile	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379
Waste						0.0000	0.0000		0.0000	0.0000	54.8340	0.0000	54.8340	3.2406	0.0000	135.8488
Water						0.0000	0.0000		0.0000	0.0000	0.5725	1.2615	1.8340	0.0590	1.4100e-003	3.7301
<b>Total</b>	<b>0.1841</b>	<b>0.0673</b>	<b>0.5328</b>	<b>9.7000e-004</b>	<b>0.0967</b>	<b>9.6000e-004</b>	<b>0.0976</b>	<b>0.0258</b>	<b>9.0000e-004</b>	<b>0.0267</b>	<b>55.4064</b>	<b>119.6886</b>	<b>175.0950</b>	<b>3.3114</b>	<b>6.9400e-003</b>	<b>259.9497</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
<b>Percent Reduction</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**3.0 Construction Detail****Construction Phase**

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	7/1/2022	7/7/2022	5	5	
2	Grading	Grading	7/8/2022	7/19/2022	5	8	
3	Building Construction	Building Construction	7/20/2022	1/9/2023	5	124	



## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

4	Paving	Paving	1/10/2023	2/2/2023	5	18
5	Architectural Coating	Architectural Coating	2/3/2023	2/28/2023	5	18

**Acres of Grading (Site Preparation Phase): 7.5****Acres of Grading (Grading Phase): 8****Acres of Paving: 2.61****Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 36,545; Non-Residential Outdoor: 12,182; Striped Parking Area: 6,822 (Architectural Coating – sqft)****OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	1	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	56.00	23.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Use Cleaner Engines for Construction Equipment

Water Exposed Area

**3.2 Site Preparation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0491	0.0000	0.0491	0.0253	0.0000	0.0253	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.9300e-003	0.0827	0.0492	1.0000e-004		4.0300e-003	4.0300e-003		3.7100e-003	3.7100e-003	0.0000	8.3599	8.3599	2.7000e-003	0.0000	8.4274
<b>Total</b>	<b>7.9300e-003</b>	<b>0.0827</b>	<b>0.0492</b>	<b>1.0000e-004</b>	<b>0.0491</b>	<b>4.0300e-003</b>	<b>0.0532</b>	<b>0.0253</b>	<b>3.7100e-003</b>	<b>0.0290</b>	<b>0.0000</b>	<b>8.3599</b>	<b>8.3599</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.4274</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	1.0000e-005	0.2887
<b>Total</b>	<b>1.2000e-004</b>	<b>9.0000e-005</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2860</b>	<b>0.2860</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.2887</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0221	0.0000	0.0221	0.0114	0.0000	0.0114	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1600e-003	5.0400e-003	0.0522	1.0000e-004		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	8.3598	8.3598	2.7000e-003	0.0000	8.4274
<b>Total</b>	<b>1.1600e-003</b>	<b>5.0400e-003</b>	<b>0.0522</b>	<b>1.0000e-004</b>	<b>0.0221</b>	<b>1.6000e-004</b>	<b>0.0223</b>	<b>0.0114</b>	<b>1.6000e-004</b>	<b>0.0115</b>	<b>0.0000</b>	<b>8.3598</b>	<b>8.3598</b>	<b>2.7000e-003</b>	<b>0.0000</b>	<b>8.4274</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.2 Site Preparation - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	9.0000e-005	1.0800e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	9.0000e-005	0.0000	1.0000e-004	0.0000	0.2860	0.2860	1.0000e-005	1.0000e-005	0.2887
<b>Total</b>	<b>1.2000e-004</b>	<b>9.0000e-005</b>	<b>1.0800e-003</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>0.0000</b>	<b>3.6000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.2860</b>	<b>0.2860</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.2887</b>

**3.3 Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0283	0.0000	0.0283	0.0137	0.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
<b>Total</b>	<b>7.7900e-003</b>	<b>0.0834</b>	<b>0.0611</b>	<b>1.2000e-004</b>	<b>0.0283</b>	<b>3.7600e-003</b>	<b>0.0321</b>	<b>0.0137</b>	<b>3.4600e-003</b>	<b>0.0172</b>	<b>0.0000</b>	<b>10.4219</b>	<b>10.4219</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>10.5062</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.2000e-004	1.4300e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3813	0.3813	1.0000e-005	1.0000e-005	0.3849
<b>Total</b>	<b>1.6000e-004</b>	<b>1.2000e-004</b>	<b>1.4300e-003</b>	<b>0.0000</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>4.8000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.3813</b>	<b>0.3813</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.3849</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	6.1600e-003	0.0000	6.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	6.2900e-003	0.0710	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
<b>Total</b>	<b>1.4500e-003</b>	<b>6.2900e-003</b>	<b>0.0710</b>	<b>1.2000e-004</b>	<b>0.0128</b>	<b>1.9000e-004</b>	<b>0.0129</b>	<b>6.1600e-003</b>	<b>1.9000e-004</b>	<b>6.3500e-003</b>	<b>0.0000</b>	<b>10.4219</b>	<b>10.4219</b>	<b>3.3700e-003</b>	<b>0.0000</b>	<b>10.5062</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.3 Grading - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6000e-004	1.2000e-004	1.4300e-003	0.0000	4.7000e-004	0.0000	4.8000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.3813	0.3813	1.0000e-005	1.0000e-005	0.3849
<b>Total</b>	<b>1.6000e-004</b>	<b>1.2000e-004</b>	<b>1.4300e-003</b>	<b>0.0000</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>4.8000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>0.3813</b>	<b>0.3813</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.3849</b>

**3.4 Building Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1007	0.9213	0.9654	1.5900e-003		0.0477	0.0477		0.0449	0.0449	0.0000	136.7179	136.7179	0.0328	0.0000	137.5367
<b>Total</b>	<b>0.1007</b>	<b>0.9213</b>	<b>0.9654</b>	<b>1.5900e-003</b>		<b>0.0477</b>	<b>0.0477</b>		<b>0.0449</b>	<b>0.0449</b>	<b>0.0000</b>	<b>136.7179</b>	<b>136.7179</b>	<b>0.0328</b>	<b>0.0000</b>	<b>137.5367</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-003	0.0758	0.0221	2.9000e-004	8.9000e-003	7.8000e-004	9.6800e-003	2.5800e-003	7.5000e-004	3.3200e-003	0.0000	27.9478	27.9478	6.1000e-004	4.1400e-003	29.1979
Worker	9.0800e-003	6.5400e-003	0.0790	2.3000e-004	0.0261	1.4000e-004	0.0263	6.9500e-003	1.3000e-004	7.0800e-003	0.0000	20.9974	20.9974	6.5000e-004	6.1000e-004	21.1942
<b>Total</b>	<b>0.0120</b>	<b>0.0824</b>	<b>0.1011</b>	<b>5.2000e-004</b>	<b>0.0350</b>	<b>9.2000e-004</b>	<b>0.0359</b>	<b>9.5300e-003</b>	<b>8.8000e-004</b>	<b>0.0104</b>	<b>0.0000</b>	<b>48.9452</b>	<b>48.9452</b>	<b>1.2600e-003</b>	<b>4.7500e-003</b>	<b>50.3921</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0331	0.1589	1.0419	1.5900e-003		6.0000e-003	6.0000e-003		6.0000e-003	6.0000e-003	0.0000	136.7177	136.7177	0.0328	0.0000	137.5366
<b>Total</b>	<b>0.0331</b>	<b>0.1589</b>	<b>1.0419</b>	<b>1.5900e-003</b>		<b>6.0000e-003</b>	<b>6.0000e-003</b>		<b>6.0000e-003</b>	<b>6.0000e-003</b>	<b>0.0000</b>	<b>136.7177</b>	<b>136.7177</b>	<b>0.0328</b>	<b>0.0000</b>	<b>137.5366</b>

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**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2022****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.9000e-003	0.0758	0.0221	2.9000e-004	8.9000e-003	7.8000e-004	9.6800e-003	2.5800e-003	7.5000e-004	3.3200e-003	0.0000	27.9478	27.9478	6.1000e-004	4.1400e-003	29.1979
Worker	9.0800e-003	6.5400e-003	0.0790	2.3000e-004	0.0261	1.4000e-004	0.0263	6.9500e-003	1.3000e-004	7.0800e-003	0.0000	20.9974	20.9974	6.5000e-004	6.1000e-004	21.1942
<b>Total</b>	<b>0.0120</b>	<b>0.0824</b>	<b>0.1011</b>	<b>5.2000e-004</b>	<b>0.0350</b>	<b>9.2000e-004</b>	<b>0.0359</b>	<b>9.5300e-003</b>	<b>8.8000e-004</b>	<b>0.0104</b>	<b>0.0000</b>	<b>48.9452</b>	<b>48.9452</b>	<b>1.2600e-003</b>	<b>4.7500e-003</b>	<b>50.3921</b>

**3.4 Building Construction - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.7200e-003	0.0432	0.0487	8.0000e-005		2.1000e-003	2.1000e-003		1.9800e-003	1.9800e-003	0.0000	6.9541	6.9541	1.6500e-003	0.0000	6.9955
<b>Total</b>	<b>4.7200e-003</b>	<b>0.0432</b>	<b>0.0487</b>	<b>8.0000e-005</b>		<b>2.1000e-003</b>	<b>2.1000e-003</b>		<b>1.9800e-003</b>	<b>1.9800e-003</b>	<b>0.0000</b>	<b>6.9541</b>	<b>6.9541</b>	<b>1.6500e-003</b>	<b>0.0000</b>	<b>6.9955</b>



## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	3.0700e-003	9.6000e-004	1.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.3620	1.3620	3.0000e-005	2.0000e-004	1.4228
Worker	4.3000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0404	1.0404	3.0000e-005	3.0000e-005	1.0497
<b>Total</b>	<b>5.0000e-004</b>	<b>3.3600e-003</b>	<b>4.6900e-003</b>	<b>2.0000e-005</b>	<b>1.7800e-003</b>	<b>3.0000e-005</b>	<b>1.8000e-003</b>	<b>4.8000e-004</b>	<b>3.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.4025</b>	<b>2.4025</b>	<b>6.0000e-005</b>	<b>2.3000e-004</b>	<b>2.4725</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6200e-003	7.9500e-003	0.0529	8.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	6.9541	6.9541	1.6500e-003	0.0000	6.9955
<b>Total</b>	<b>1.6200e-003</b>	<b>7.9500e-003</b>	<b>0.0529</b>	<b>8.0000e-005</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>		<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>6.9541</b>	<b>6.9541</b>	<b>1.6500e-003</b>	<b>0.0000</b>	<b>6.9955</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.4 Building Construction - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	7.0000e-005	3.0700e-003	9.6000e-004	1.0000e-005	4.5000e-004	2.0000e-005	4.7000e-004	1.3000e-004	2.0000e-005	1.5000e-004	0.0000	1.3620	1.3620	3.0000e-005	2.0000e-004	1.4228
Worker	4.3000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.3300e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.0404	1.0404	3.0000e-005	3.0000e-005	1.0497
<b>Total</b>	<b>5.0000e-004</b>	<b>3.3600e-003</b>	<b>4.6900e-003</b>	<b>2.0000e-005</b>	<b>1.7800e-003</b>	<b>3.0000e-005</b>	<b>1.8000e-003</b>	<b>4.8000e-004</b>	<b>3.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.4025</b>	<b>2.4025</b>	<b>6.0000e-005</b>	<b>2.3000e-004</b>	<b>2.4725</b>

**3.5 Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2600e-003	0.0791	0.1097	1.7000e-004		3.9200e-003	3.9200e-003		3.6200e-003	3.6200e-003	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	3.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>0.0117</b>	<b>0.0791</b>	<b>0.1097</b>	<b>1.7000e-004</b>		<b>3.9200e-003</b>	<b>3.9200e-003</b>		<b>3.6200e-003</b>	<b>3.6200e-003</b>	<b>0.0000</b>	<b>14.7407</b>	<b>14.7407</b>	<b>4.6300e-003</b>	<b>0.0000</b>	<b>14.8565</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.9900e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1147	1.1147	3.0000e-005	3.0000e-005	1.1247
<b>Total</b>	<b>4.6000e-004</b>	<b>3.2000e-004</b>	<b>3.9900e-003</b>	<b>1.0000e-005</b>	<b>1.4200e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.1147</b>	<b>1.1147</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>1.1247</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7700e-003	0.0135	0.1260	1.7000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	14.7407	14.7407	4.6300e-003	0.0000	14.8565
Paving	3.4200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>6.1900e-003</b>	<b>0.0135</b>	<b>0.1260</b>	<b>1.7000e-004</b>		<b>4.6000e-004</b>	<b>4.6000e-004</b>		<b>4.6000e-004</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>14.7407</b>	<b>14.7407</b>	<b>4.6300e-003</b>	<b>0.0000</b>	<b>14.8565</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.5 Paving - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.6000e-004	3.2000e-004	3.9900e-003	1.0000e-005	1.4200e-003	1.0000e-005	1.4300e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.1147	1.1147	3.0000e-005	3.0000e-005	1.1247
<b>Total</b>	<b>4.6000e-004</b>	<b>3.2000e-004</b>	<b>3.9900e-003</b>	<b>1.0000e-005</b>	<b>1.4200e-003</b>	<b>1.0000e-005</b>	<b>1.4300e-003</b>	<b>3.8000e-004</b>	<b>1.0000e-005</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.1147</b>	<b>1.1147</b>	<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>1.1247</b>

**3.6 Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1508					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.7200e-003	0.0117	0.0163	3.0000e-005		6.4000e-004	6.4000e-004		6.4000e-004	6.4000e-004	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
<b>Total</b>	<b>0.1525</b>	<b>0.0117</b>	<b>0.0163</b>	<b>3.0000e-005</b>		<b>6.4000e-004</b>	<b>6.4000e-004</b>		<b>6.4000e-004</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.2979</b>	<b>2.2979</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>2.3014</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	2.2000e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6131	0.6131	2.0000e-005	2.0000e-005	0.6186
<b>Total</b>	<b>2.5000e-004</b>	<b>1.7000e-004</b>	<b>2.2000e-003</b>	<b>1.0000e-005</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>7.9000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6131</b>	<b>0.6131</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.6186</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1508					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	1.1600e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.4000e-004	0.0000	2.3014
<b>Total</b>	<b>0.1510</b>	<b>1.1600e-003</b>	<b>0.0165</b>	<b>3.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>		<b>4.0000e-005</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>2.2979</b>	<b>2.2979</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>2.3014</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****3.6 Architectural Coating - 2023****Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.7000e-004	2.2000e-003	1.0000e-005	7.8000e-004	0.0000	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6131	0.6131	2.0000e-005	2.0000e-005	0.6186
<b>Total</b>	<b>2.5000e-004</b>	<b>1.7000e-004</b>	<b>2.2000e-003</b>	<b>1.0000e-005</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>7.9000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6131</b>	<b>0.6131</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.6186</b>

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379
Unmitigated	0.0661	0.0645	0.5294	9.5000e-004	0.0967	7.5000e-004	0.0974	0.0258	6.9000e-004	0.0265	0.0000	88.2803	88.2803	7.3700e-003	4.9400e-003	89.9379

**4.2 Trip Summary Information**

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	180.26	180.26	180.26	262,240	262,240
Parking Lot	0.00	0.00	0.00		
Total	180.26	180.26	180.26	262,240	262,240

**4.3 Trip Type Information**

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hardware/Paint Store	9.50	7.30	7.30	13.60	67.40	19.00	45	29	26
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

**4.4 Fleet Mix**

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hardware/Paint Store	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928
Parking Lot	0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002928

**5.0 Energy Detail**

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Historical Energy Use: N

**5.1 Mitigation Measures Energy**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.1024	27.1024	4.3800e-003	5.3000e-004	27.3704
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	27.1024	27.1024	4.3800e-003	5.3000e-004	27.3704
NaturalGas Mitigated	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603
NaturalGas Unmitigated	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603



## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	57009.4	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>3.1000e-004</b>	<b>2.7900e-003</b>	<b>2.3500e-003</b>	<b>2.0000e-005</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>3.0422</b>	<b>3.0422</b>	<b>6.0000e-005</b>	<b>6.0000e-005</b>	<b>3.0603</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hardware/Paint Store	57009.4	3.1000e-004	2.7900e-003	2.3500e-003	2.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	3.0422	3.0422	6.0000e-005	6.0000e-005	3.0603
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>3.1000e-004</b>	<b>2.7900e-003</b>	<b>2.3500e-003</b>	<b>2.0000e-005</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>		<b>2.1000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>3.0422</b>	<b>3.0422</b>	<b>6.0000e-005</b>	<b>6.0000e-005</b>	<b>3.0603</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	253132	23.4207	3.7900e-003	4.6000e-004	23.6523
Parking Lot	39792.2	3.6817	6.0000e-004	7.0000e-005	3.7181
<b>Total</b>		<b>27.1024</b>	<b>4.3900e-003</b>	<b>5.3000e-004</b>	<b>27.3704</b>

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hardware/Paint Store	253132	23.4207	3.7900e-003	4.6000e-004	23.6523
Parking Lot	39792.2	3.6817	6.0000e-004	7.0000e-005	3.7181
<b>Total</b>		<b>27.1024</b>	<b>4.3900e-003</b>	<b>5.3000e-004</b>	<b>27.3704</b>

**6.0 Area Detail**

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
Unmitigated	0.1177	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1025					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
<b>Total</b>	<b>0.1177</b>	<b>1.0000e-005</b>	<b>1.1000e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.1300e-003</b>	<b>2.1300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.2700e-003</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****6.2 Area by SubCategory****Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0151					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1025					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0000e-004	1.0000e-005	1.1000e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.1300e-003	2.1300e-003	1.0000e-005	0.0000	2.2700e-003
<b>Total</b>	<b>0.1177</b>	<b>1.0000e-005</b>	<b>1.1000e-003</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.1300e-003</b>	<b>2.1300e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.2700e-003</b>

**7.0 Water Detail****7.1 Mitigation Measures Water**

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.8340	0.0590	1.4100e-003	3.7301
Unmitigated	1.8340	0.0590	1.4100e-003	3.7301

**7.2 Water by Land Use****Unmitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	1.80441 / 1.10593	1.8340	0.0590	1.4100e-003	3.7301
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.8340</b>	<b>0.0590</b>	<b>1.4100e-003</b>	<b>3.7301</b>

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****7.2 Water by Land Use****Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hardware/Paint Store	1.80441 / 1.10593	1.8340	0.0590	1.4100e-003	3.7301
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>1.8340</b>	<b>0.0590</b>	<b>1.4100e-003</b>	<b>3.7301</b>

**8.0 Waste Detail****8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	54.8340	3.2406	0.0000	135.8488
Unmitigated	54.8340	3.2406	0.0000	135.8488

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied****8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	270.13	54.8340	3.2406	0.0000	135.8488
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>54.8340</b>	<b>3.2406</b>	<b>0.0000</b>	<b>135.8488</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hardware/Paint Store	270.13	54.8340	3.2406	0.0000	135.8488
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
<b>Total</b>		<b>54.8340</b>	<b>3.2406</b>	<b>0.0000</b>	<b>135.8488</b>

**9.0 Operational Offroad**

## Suisun City Tractor Supply Company Project - Mitigated - Bay Area AQMD Air District, Annual

**EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied**

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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**10.0 Stationary Equipment**

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**Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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**Boilers**

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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**User Defined Equipment**

Equipment Type	Number
----------------	--------

**11.0 Vegetation**

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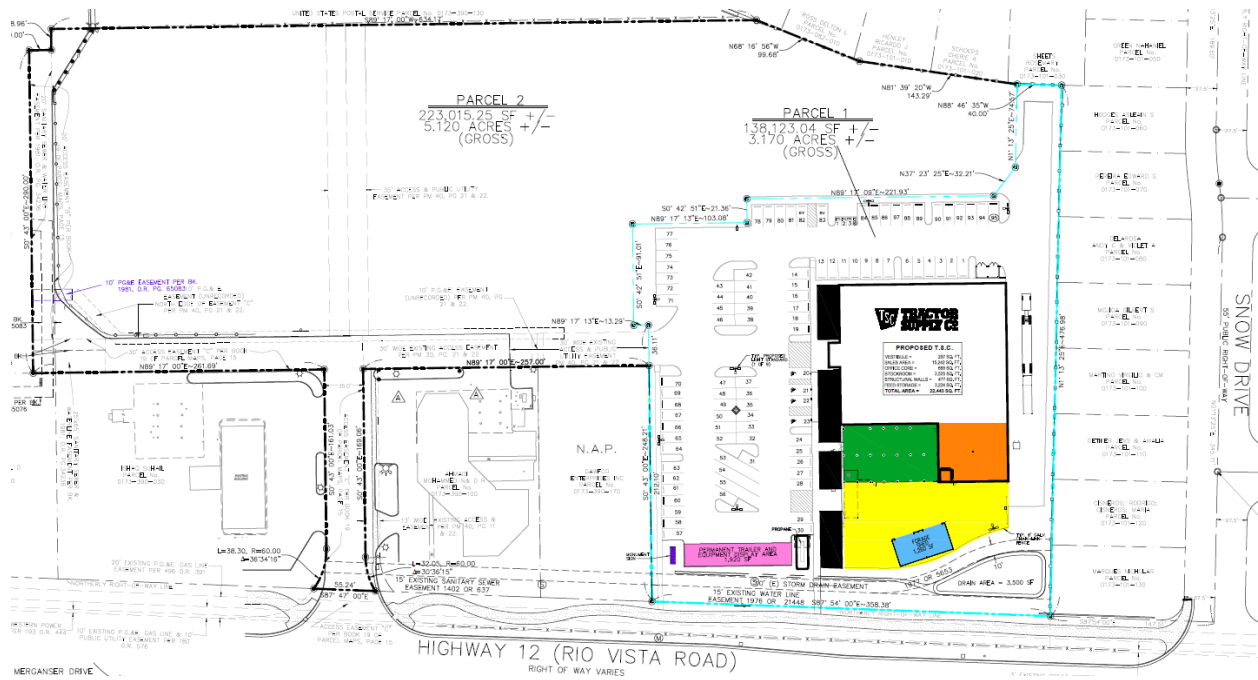


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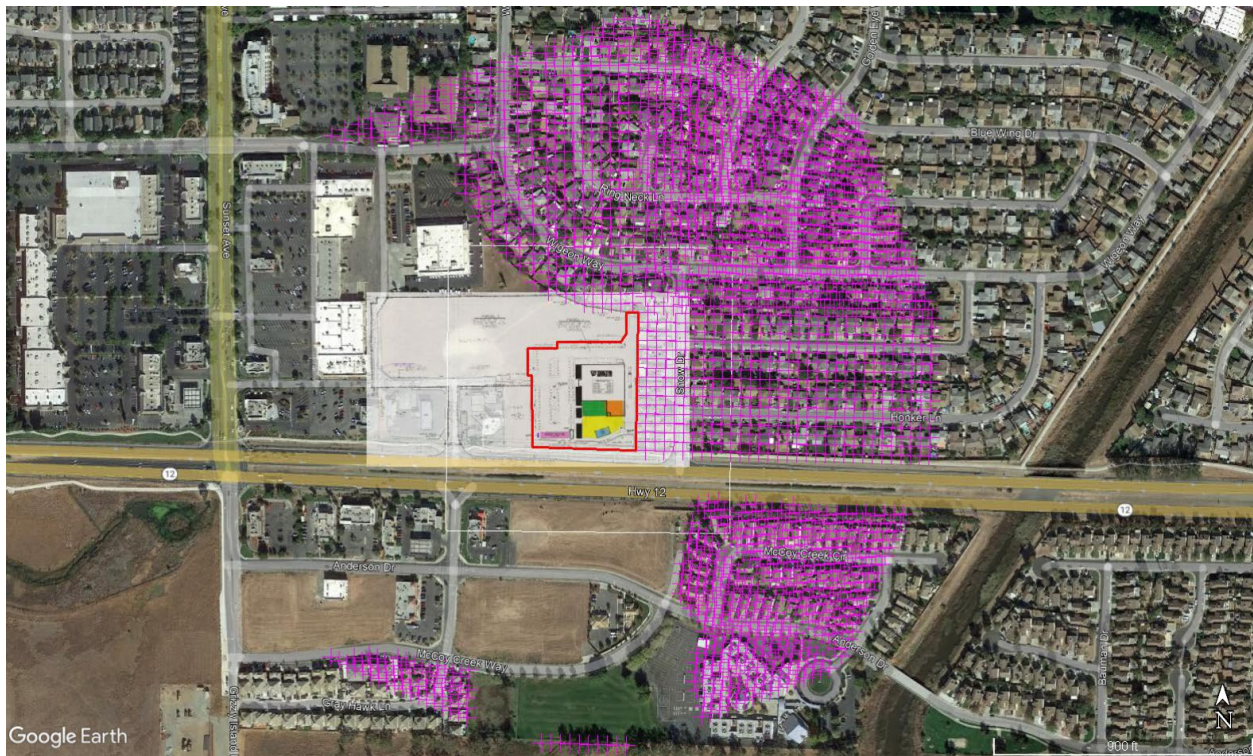
## **ATTACHMENT B**

### **CONSTRUCTION HRA MODEL SNAPSHOTS**

## Project Layout

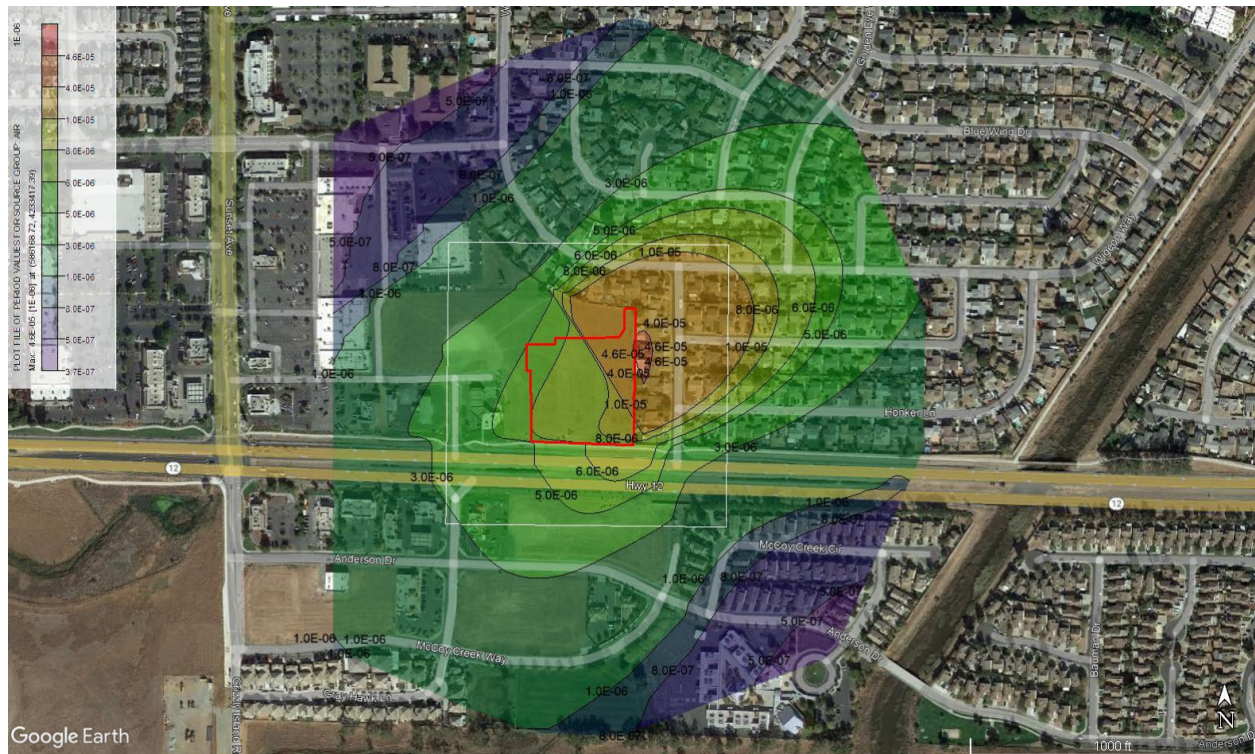


## Sensitive Receptor Grid





## Unmitigated Cancer Risk

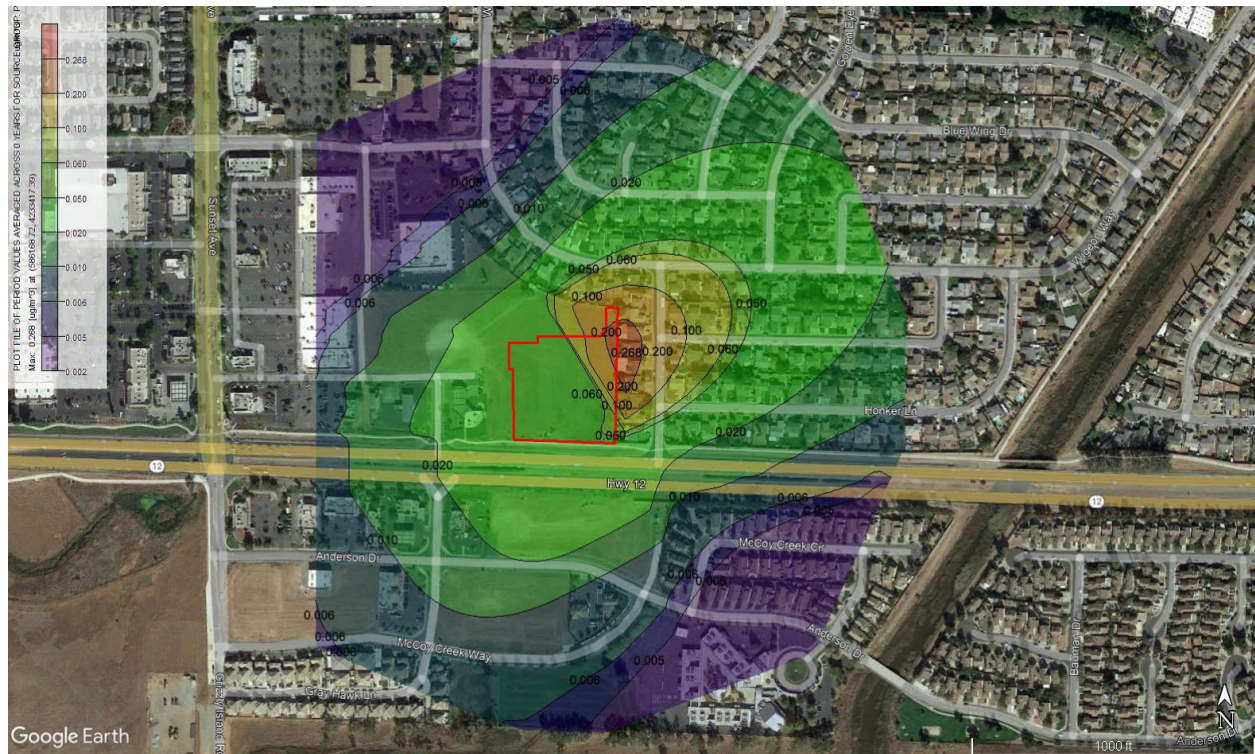


## Unmitigated Chronic Hazard Index





## Unmitigated PM<sub>2.5</sub> Concentration



## Mitigated Cancer Risk





## Mitigated Chronic Hazard Index



## Mitigated PM<sub>2.5</sub> Concentration



## Appendix B Biological Resource Assessment



**Bole & Associates**  
*An Environmental Consulting Firm*

April 4, 2022

Hilbers Incorporated  
Attn: Deane Surface  
770 N. Walton Ave. Ste. 100  
Yuba City, CA 95993

**BIOLOGICAL RESOURCE ASSESSMENT FOR THE TRACTOR SUPPLY SUISUN CITY PROJECT, CITY OF SUISUN, SOLANO COUNTY (APN 0173-390-160 & 180). MHB FILE 0120-2022-3785.**

**1.0. INTRODUCTION**

On behalf of Hilbers, Inc., Bole & Associates (B&A) conducted a biological resource assessment (BRA) for APNs 0173-390-160 & -180, an 8.29-acre project area of undeveloped land located in the City of Suisun, California. A Biological Resource Assessment (BRA) is required for construction projects (or other undertakings having similar physical impacts) that require state or federal review of impacts significantly affecting the quality of the human environment, or affect listed or proposed species and/or designated or proposed critical habitat.

**1.1. Property Location**

The property is located within Section 30, Township 5 North, Range 1 West. Fairfield South 7.5-minute USGS Quadrangle, in the City of Suisun, Solano County, California (See Enclosure A, Figure 1). Center of the property is approximately 38.24469° North, -122.016638° West (NAD27).

**1.2. Purpose of this Biological Resources Assessment**

This report presents the results of a reconnaissance-level biological resource assessment conducted by Bole & Associates on the above reference property. The purpose of the survey was to identify and describe existing biological resources, evaluate the site's potential to support special-status plant and/or animal species, and determine if any other sensitive resources are present. This letter report includes the following: (1) a description of the methods used to conduct the evaluation; (2) a brief description of existing habitat conditions on the property; and (3) an analysis of special-status plant and animal species and other sensitive biological resources potentially present.

**1.3. Project Description**

The Tractor Supply Suisun City Project includes the construction of a 22,364 square foot Retail (Tractor Supply) building with a 1,250 square foot Forage Shed, paved parking and landscaping.



The site plan also proposes the potential for developing three future retail building. (See Site Plan, Enclosure D).

## **2.0. REGULATORY SETTING**

### **2.1. Federal Regulations**

#### **2.1.1. Endangered Species Act**

The Endangered Species Act (ESA) protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits, without authorization, the taking of listed wildlife, where take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in any other area in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals and funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, USFWS and NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of ESA provides for the issuance of Incidental Take Permits (ITPs) where no other federal actions are necessary provided a habitat conservation plan is developed.

#### **Critical Habitat**

Critical Habitat is defined in Section 3 of ESA as:

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

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features essential to the conservation of the species (16 USC 1533). Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:



1. Space for individual and population growth and for normal behavior;
2. Food, water, air, light, minerals, or other nutritional or physiological requirements
3. Sites for breeding, reproduction, or rearing (or development) of offspring; and
4. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

### **2.1.2. Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of non-game birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

### **2.1.3. Clean Water Act**

The purpose of the federal Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredged or fill material into “Waters of the U.S.” without a permit from the U.S. Army Corps of Engineers (USACE). The Environmental Protection Agency (USEPA) and the USACE will assert jurisdiction over Waters of the U.S. according to the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (Rapanos). In summary, Waters of the U.S. under Rapanos include traditional navigable waters (TNW), wetlands adjacent to TNW, non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow at least seasonally (e.g. typically three months), and wetlands that directly abut such tributaries. Pursuant to Rapanos, the USEPA and USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water over the following: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary (USEPA and USACE 2008). Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). USEPA

also has authority over wetlands, including the authority to veto permits issued by USACE under CWA Section 404.

Projects involving activities that have no more than minimal individual and cumulative adverse environmental effects may meet the conditions of one of the Nationwide Permits already issued by USACE (Federal Register 82:1860, January 6, 2017). If impacts on wetlands could be substantial, an individual permit is required. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions. This certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

## **2.2. State and Local Regulations**

### **2.2.1. California Endangered Species Act (ESA)**

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California ESA allows for take incidental to otherwise lawful projects under permits issued by California Department of Fish and Wildlife (CDFW).

### **2.2.2. Fully Protected Species**

The State of California first began to designate species as “fully protected” prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing ITPs for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved NCCP within which such species are covered.

### **2.2.3. Native Plant Protection Act**

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to “preserve, protect and enhance rare and endangered plants in this state.” The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as “endangered” or “rare”. The NPPA prohibits the take

of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA, but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.

#### **2.2.4. California Fish and Game Code Special Protection of Birds**

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds.

Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.

Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.

Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests

Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.

Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

#### **2.2.5. Lake or Streambed Alteration Agreements**

Pursuant to Business and Professional Code 26060.1(b)(3), every license for cultivation issued by the Department of Cannabis Control (DCC) must comply with §1602 of the Fish and Game Code or receive written verification that CDFW that an LSA is not required. Additionally, Section 1600-1616 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration (LSA) to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the LSA Agreement. The subject property does not border a riparian corridor or any stream, lake or intermittent tributaries.

### **2.2.6. Porter-Cologne Water Quality Act**

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, with any region that could affect the water of the state” (Water Code 13260(a)). Waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

### **2.2.7. California Environmental Quality Act Species Criteria**

In accordance with California Environmental Quality Act (CEQA) Guidelines § 15380 (Guidelines), a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria include definitions similar to definitions used in ESA, the California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under ESA, the California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as species of special concern (SSC) by CDFW, and plants identified by the California Native Plant Society (CNPS) as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

#### **Species of Special Concern (SSC)**

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA, or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role;
- The species is listed as federally (but not State) threatened or endangered, or meets the State definition of threatened or endangered but has not formally been listed;
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;

- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status; and
- SSC are typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

### **USFWS Birds of Conservation Concern**

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA.” To meet this requirement, USFWS published a list of birds of conservation concern (BCC) (USFWS 2008) for the U.S. The list identifies the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS’s highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

### **Sensitive Natural Communities**

The CDFW maintains the California Natural Community List (CDFW 2021), which provides a list of vegetation alliances, associations, and special stands as defined in the *Manual of California Vegetation* (Sawyer et al. 2009), along with their respective State and global rarity ranks. Natural communities with a State rarity rank of 1, 2, or 3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

### **California Rare Plant Ranks**

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2022), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six California Rare Plant Ranks (CRPRs). The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.  
 Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.  
 Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.  
 Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.  
 Rare Plant Rank 3 – a review list of plants about which more information is needed.

Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat).

Threat Rank 0.2 – Moderately threatened in California (20-80 percent of occurrences threatened/moderate degree and immediacy of threat).

Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; differences in Threat Ranks do not constitute additional or different protection (CNPS 2021).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

### **CEQA Significance Criteria**

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, §15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important

biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

### **3.0. METHODS**

For the purposes of this BRA, special-status species are defined as plants or animals that:

- are listed or are proposed for listing as threatened or endangered under the ESA;
- are candidates for future listing as threatened or endangered under the California ESA;
- are identified as an SSC by the CDFW;
- are considered by the CNPS with a CRPR of 1A, 1B, 2A, 2B, 3, or 4;
- are fully protected in California in accordance with the California Fish and Game Code, 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes)

#### **3.1. Literature Review**

Prior to field studies, special-status biological resources present or potentially present within or near the property were identified through queries of the various state and federal databases based on the U.S. Geological Survey 7.5-minute quadrangle where the property is located (Fairfield South) and eight surrounding quadrangles (Fairfield North, Elmira, Denverton, Honker Bay, Vine Hill, Benicia, Cordelia, and Mt. George). (See Enclosure B). Biologists independently reviewed databases and reports that address biological resources within and near the project area, including the *California Natural Diversity Base* (CNDDB) (CDFG 2022), the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001 updated 2021), and the United States Fish & Wildlife Service (USFWS) online electronic database of endangered species (USFWS 2022). Relevant technical information from these databases are incorporated and referenced as appropriate.

#### **3.2. Field Assessment for Other Special-Status Species**

Surveys were conducted by Bole & Associates' Senior Biologist Marcus H. Bole, M.S., and Senior Biologist (Ornithologist) Charlene J. Bole, M.S., on February 12, March 9, and March 31, 2022. During these field assessments, the property was walked on foot (3-meter transects and fixed observation posts), and topographic maps and aerial imagery were referenced. Biological communities occurring within the property were characterized, and the following biological resource information was collected:

- protected trees occurring on or near the property;

- animal and plant species directly observed;
- habitat and vegetation communities; and
- representative photographs of the property.

### 3.3. Evaluation of Special-Status Species

Based on the species accounts, species occurrence information from the literature review, and field assessments, a list of special-status plant and animal species considered to have the potential to occur within the property was generated. Each of the species that were considered as potentially occurring within the property or vicinity were evaluated based on the following criteria:

- **Present** – Species was observed during field surveys or is known to occur within the property based on documented occurrences within the CNDDDB, other literature, and site assessments.
- **Potential to Occur** – Habitat (including soil and elevation requirements) for the species occurs within the property based on site assessment and literature research.
- **Low Potential to Occur** – Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the property based on CNDDDB records other available documentation, and site assessments.
- **Absent** – No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the property based on CNDDDB records, other documentation, and site assessments.

### 3.4. Preliminary Aquatic Resources Assessment

The property does not have aquatic resources on or near the vicinity of the property. As such, an aquatic assessment was not performed.

## 4.0. RESULTS

### 4.1. Site Characteristics and Land Use

The property is situated at an elevation of approximately 9 feet above mean sea level (MSL). The property is bordered on the south by State Highway 12, open agricultural fields, and two gasoline service stations, on the east and north by residential properties, and on the west by commercial retail stores and restaurants. The property consists of disturbed ruderal, non-native grasses and forbs. According to the USFWS there are no critical habitats within or near the project area under the jurisdiction of the Sacramento, California office (Project Code: 2022-0004000, Project Name: TCS Suisun City).



#### 4.1.1. Disturbed, Ruderal, Non-Native Grasses and Forbs

The entire 8.29-acre site consists of a disturbed ruderal vegetative community. Common vegetative species found in this community were composed of weedy non-native species. Common species identified in the field included: wild oat (*Avena fatua*), black mustard (*Brassica nigra*), ripgut (*Bromus rigidus*), soft cheat grass (*Bromus hordeaceus*), soft cheat (*Bromus mollis*), field bindweed (*Convolvulus arvensis*), redstem filaree (*Erodium cicutarium*), California poppy (*Eschscholzia californica*), fennel (*Foeniculum vulgare*), California mustard (*Guillenia lasiophylla*), cow parsnip (*Heracleum lanatum*), foxtail barley (*Hordeum leporinum*), prickly lettuce (*Lactuca serriola*), common mallow (*Malva neglecta*), cheeseweed (*Malva parviflora*), bur clover (*Medicago polymorpha*), bristly ox-tongue (*Picris echinoides*), wild radish (*Rhaphanus sativus*), spiny sowthistle (*Sonchis asper*), perennial sowthistle (*Sonchus arvensis*), yellow star thistle (*Centaurea solstitialis*), hedge bindweed (*Calystegia sepium*), lupines (*Lupinus spp.*), and winter vetch (*Vicia villosa*). There is one medium diameter willow tree (*Salix spp.*) along the northern boundary of the site. The tree does not contain avian nests. There are no small mammal burrows within the site and there was no evidence of Burrowing Owl nesting habitat.

#### 4.1.2. Special-status Plant Survey

Special-status plant surveys were conducted throughout the months of February and March, 2022, to coincide with the flowering period of sensitive plant species potentially occurring with the project area. A review of the various special-status species databases and literature indicated that 30 special-status plant species had the potential to occur in the project and buffer area (see Table 1). Surveys were floristic in nature (where possible), and were conducted in accordance with California Department of Fish and Wildlife's *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (2018).

Rare plant surveys were performed using demographic survey techniques derived from the CNPS rare plant monitoring guidelines (CNPS 2001). These guidelines include floristically based surveys, identifying to species level all plant encountered, or identifying to the level necessary to detect rare plants if present. During field surveys, meandering transects were walked throughout the property, proposed and existing access roads, and buffer areas to ensure that all habitats present were surveyed. All plants were identified to the level necessary to ensure that any special-status species would be detected. Scientific and common nomenclature followed The Jepson Manual (Hickman 1996).

#### 4.1.3. Wildlife

Wildlife use of the property is expected to be low due to the sparse, ruderal nature for the vegetation and the developed surroundings. Bird species observed during the February/March 2022 onsite evaluations included the mourning dove (*Zenaida macroura*), western gull (*Larus*

*occidentalis*), California towhee (*Melospiza crissalis*), black phoebe (*Sayornis nigricans*), house finch (*Carpodacus mexicanus*), California scrub jay (*Aphelocoma californica*), western bluebird (*Sialia mexicana*), house finch (*Haemorhous mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*), yellow-rumped warbler (*Setophana coronata*), house sparrow, *Passer domesticus*, American crow, *Corvus brachyrhynchos*, Western meadowlark, *Sturnella neglecta*, turkey vulture, *Cathartes aura*, and Northern mocking bird, *Mimus polyglottos*, among others. Urban-adapted wildlife typically found in this setting could include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and jackrabbit, *Lepus californicus*.

#### 4.2. Evaluation of Special-Status Species

Based on an analysis of literature review, 9-Quad CNDDB occurrences, USFWS listed species, profession expertise and observations in the field, a list of special-status plant and animal species that have the potential to occur within the property was generated. Each of these species' potential to occur onsite was assessed using the criteria listed in Section 3.3. Sensitive habitats include those that are of special concern to resource agencies and those that are protected under CEQA, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. The property and adjacent 300 foot buffer zone was systematically surveyed to ensure total search coverage, with special attention given to identifying those portions of the property with the potential for supporting special-status species and sensitive habitats. No sensitive animal or plant species were observed during the biological/botanical survey and assessment. (See Table 1 below).

**Table 1. Evaluation of Listed and Proposed Species Potentially Occurring or Known to Occur in the Tractor Supply Suisun Project Action Area**

Species	Federal (USFWS) Status <sup>1</sup>	State (CDFG)/CNPS Status <sup>1</sup>	Habitat	Potential for Occurrence
<i>Plants</i>				
<i>Astragalus tener</i> var. <i>tener</i> , alkali milk-vetch	None	None Rare Plant – 1B.2	Alkali playa, valley and foothill grassland, vernal pools, low ground, alkali flats, and flooded lands in annual grassland or in playas or vernal pools. 0-170 M.	<b>Absent:</b> There is no suitable habitat onsite. No vernal pools or flooded lands. None observed during Spring 2022 surveys.
<i>Agrostis hendersonii</i> , Henderson's bent grass	None	None Rare Plant – 3.2	Valley and foothill grassland. Vernal pools. Moist places in grassland or vernal pool habitat. 65-1030 M.	<b>Absent:</b> There is no suitable habitat onsite. No vernal pools. None observed during Spring 2022 surveys.
<i>Atriplex cordulata</i> var. <i>cordulata</i> , heartscale	None	None Rare Plant – 1B.2	Chenopod scrub, valley and foothill grassland, meadows and seeps, alkaline flats and scalds in	<b>Absent:</b> There is no suitable habitat onsite. No sandy soils or seeps. None observed during Spring 2022 surveys.

			central valley. Sandy soils. 3-275 M.	
<i>Atriplex depressa</i> , bittlescale	None	None Rare Plant – 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools usually in alkali scalds or alk. clay in meadows or annual grassland; rarely associated with riparian, marshes, or vernal pools. 1-325 M.	<b>Absent:</b> There is no suitable habitat onsite. No alkali scalds or seeps. None observed during Spring 2022 surveys.
<i>Atriplex persistens</i> , vernal pool smallscale	None	None Rare Plant – 1B.2	Vernal pools, alkaline vernal pools. 2-115 M.	<b>Absent:</b> There is no suitable habitat onsite. No vernal pools or alkaline vernal pools onsite. None observed during Spring 2022 surveys.
<i>Balsamorhiza macrolepis</i> , big-scale balsamroot.	None	None Rare Plant – 1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1465 M.	<b>Absent:</b> There is no suitable habitat onsite. No serpentine soils. None observed during Spring 2022 surveys.
<i>Blepharizonia plumose</i> , big tarplant	None	None Rare Plant – 1B.1	Valley and foothill grassland. Dry hills and plains in annual grassland. Clay to clayloam soils. Usually on slopes and often burned areas.	<b>Absent:</b> There is no suitable habitat onsite. No clay soils or slopes. None observed during Spring 2022 surveys.
<i>Brodiaea leptandra</i> , narrow-anthered brodiaea	None	None Rare Plant – 1B.2	Broad leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest valley and foothill grassland. Volcanic substrates. 30-590 M.	<b>Absent:</b> There is no suitable habitat onsite. No volcanic substrates. None observed during Spring 2022 surveys.
<i>Carex lyngbyel</i> , Lyngbye's sedge	None	None Rare Plant – 2B.2	Marshes and swamps (brackish or freshwater). 0 – 200 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Centromadia parryi</i> ssp. <i>parryi</i> , Pappose tarplant	None	None/1B.2	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, vernally mesic, often alkaline sites.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Chloropyron molle</i> ssp. <i>molle</i> , soft salty bird's beak	E	None Rare Plant – 1B.2	Meadows and seeps, playas, Valley and foothill grassland. In damp alkaline soils. Especially in alkaline meadows and alkali sinks with <i>Distichlis</i> . 5-155 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Cicuta maculate</i> var. <i>bolanderi</i> , Bolander's water-hemlock	None	None Rare Plant – 2B.1	Marshes and swamps. In fresh or brackish water. 0-20 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Cirsium hydrophilum</i> var. <i>hydrophilum</i> , Suisun thistle	E	None Rare Plant – 1B.1	Marshes and swamps. Grows with <i>Distichlis</i> , <i>Scirpus</i> , near small watercourses within salt marsh. 0-1 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Chorizanthe valida</i> , Sonoma spineflower	E	E/1B.1	Coastal prairies in sandy soils.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.

<i>Clarkia imbricata</i> , Vine Hill clarkia	E	E/1B.1	Chaparral, valley & foothill grassland on acidic, sandy soil	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Cordylanthus mollis</i> ssp. <i>mollis</i> , Soft Bird's beak	E	None	Found predominantly in the high marsh (upper reaches) of salt grass-pickleweed marshes at or near the limits of tidal action, and is associated with <i>Salicornia virginica</i> (pickleweed), <i>Distichlis spicata</i> (salt grass), <i>Jaumea carnosa</i> (fleshy jaumea), <i>Frankenia salina</i> (alkali heath), and <i>Troglochin maritima</i> (arrow-grass)	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> , Pennell's bird's-beak	E	Rare Plant -1B.2	Closed-cone coniferous forest, chaparral, in open or disturbed areas on serpentine within forest or chaparral.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Delphinium recurvatum</i> , recurved larkspur	None	None Rare Plant – 1B.2	Chenopod scrub, valley and foothill grassland, cismontane woodland on alkaline soils; often in valley saltbush or valley chenopod scrub. 3-790 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Eriogonum truncatum</i> , Mt. Diablo buckwheat.	None	None Rare Plant – 1B.1	Chaparral, coastal scrub, valley and foothill grassland. Dry, exposed clay or sandy substrates. 105-350 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Eryngium jepsonii</i> , Jepson's coyote thistle	None	None Rare Plant – 1B.2	Vernal pools. Valley and foothill grassland. Clay. 3-305 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Extriplex joaquinana</i> , San Joaquin spearscale.	None	None Rare Plant – 1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland in seasonal alkali wetlands or alkali sink scrub with <i>Distichlis spicata</i> , <i>Frankenia</i> , etc. 0-800 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Holocarpha macradenia</i> , Santa Cruz Tarplant	T	E Rare Plant 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay. Often with non-natives. 10-220 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Lasthenia conjugens</i> , Contra Costa goldfields	E	None Rare Plant 1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland, vernal pools, swales in open grassy areas. 1-450 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> , Delta tule pea	None	None Rare Plant – 1B.2	Marshes and swamps in freshwater and brackish marshes. 0-5 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Legenere limosa</i> , <i>legenere</i>	None	None Rare Plant – 1B.1	Vernal pools. In beds of vernal pools. 1-1005 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.

<i>Lilaeopsis masonii</i> , Masons's lilaeopsis	None	None Rare Plant – 1B.1	Marshes and swamps, riparian scrub. Tidal zones in muddy or silty soil. 0 -10 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Puccinellia simplex</i> , California alkali grass	None	None Rare Plant – 1B.2	Meadows and seeps, chenopod scrub, valley and foothill grassland, vernal pools. 1-915 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Spergularia macrotheca</i> var. <i>longistylis</i> , long-styled sand-spurrey	None	None Rare Plant – 1B.2	Marshes and swamps, meadows and seeps. Alkaline. 0-220 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Symphyotrichum tentum</i> , Suisun Marsh aster	None	None Rare Plant – 1B.2	Marshes and swamps (brackish and freshwater) 0-15 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Trifolium hydrophilum</i> , saline clover	None	None Rare Plant – 1B.2	Marshes and swamps, valley and foothill grassland. Vernal pools. Mesic, Alkaline site. 1 – 335 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<b>Birds</b>				
<i>Accipiter cooperii</i> , Cooper's hawk	None	None	Nest sites mainly in riparian growths of deciduous trees as in canyon bottoms on river flood-plains; also live oaks.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Agelaius tricolor</i> , tricolored blackbird	None	T CDFW - SSC	Requires open water, protected nesting substrate and foraging area with insect prey within a few KM of colony.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Aquila chrysaetos</i> , golden eagle	None	None CDFW – fully protected	Cliff-walled canyons provide nesting habitat in most parts of range; also large trees in open areas.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Ardea Herodias</i> , great blue heron	None	None	Rookery sites in close proximity to foraging areas; marshes, lake margins, tide-flats, rivers and streams, wet meadows.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Ammodramus savannarum</i> , grasshopper sparrow	None	None CDFW - SSC	Dense native grasslands on rolling hills, lowland plains in valleys and on hillsides on lower mountain slopes.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Asio flammeus</i> , short- eared owl	None	None CDFW - SSC	Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Athene cunicularia</i> , burrowing owl	None	None CDFW -SSC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low- growing vegetation. Subterranean nester, dependent upon burrowing mammals, most	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. No suitable burrows observed onsite. None observed during Spring 2022 surveys. May forage onsite.

			notably the California ground squirrel.	
<i>Buteo regalis</i> , ferruginous hawk	None	None	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly logomorphs, ground squirrels and mice. Population trends may follow logomorph population cycles.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. No observed prey base such as ground squirrels or mice onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Buteo swainsoni</i> , Swainson's hawk	None	Threatened	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or line of trees. Requires adjacent suitable foraging areas such as grasslands or alfalfa or grain fields supporting rodent populations.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. No observed prey base such as ground squirrels or mice onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Circus hudsonius</i> , <u>northern harrier</u>	None	None CDFW – SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation usually at marsh edge; nest built of large mound of sticks in wet areas.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Coturnicops noveboracensis</i> , yellow tail	None	None CDFW – SSC	Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	<b>None:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys.
<i>Egretta thula</i> , snowy egret	None	None	Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes tidal-flats, streams, and borders of lakes.	<b>None:</b> There is no suitable nesting habitat onsite. No suitable foraging habitat onsite. None observed during Spring 2022 surveys.
<i>Elanus leucurus</i> , white-tailed kite	None	None CDFW- fully protected	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadow, or marshes for foraging close to isolated dense-topped trees for nesting and perching.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Falco peregrinus anatum</i> , American peregrine falcon	Delisted	Delisted CDFW- fully protected	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also human-made structures. Nest consists of a scrape or a depression on ledge in an open site.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Geothlypis trichas sinuosa</i> , saltmarsh	None	None CDFW – SSC	Resident of the San Francisco Bay region, in	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during

common yellowthroat			fresh or salt water marshes. Required thick continuous cover down to water surface for foraging; tall grasses, tule patches, willow for nesting.	Spring 2022 surveys. May forage onsite.
<i>Laterallus jamaicensis coturniculus</i> , California black rail	None	Threatened CDFW – fully protected	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about one inch that do not fluctuate during the year and dense vegetation for nesting habitat.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Melospiza melodia maxillaris</i> , Suisun song sparrow	None	None CDFW - SSC	Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and Salicornia; also known to frequent tangles bordering sloughs.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Melospiza melodia samuells</i> , San Pablo song sparrow	None	None CDFW - SSC	Resident of salt marshes along north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the Salicornia marshes; nests in Grindelia bordering slough channels.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Nycticorax nycticorax</i> , black-crowned night heron	None	None	Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas; lake margins, mud-bordered bays, marshy spots.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite.
<i>Pandion haliaetus</i> , osprey	None	None	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	<b>Absent:</b> There is no suitable nesting habitat onsite. There is no suitable foraging habitat onsite. None observed during Spring 2022 surveys.
<i>Rallus longirostris obsoletus</i> , California clapper rail	E	E	Salt-water brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	<b>Absent:</b> There is no suitable nesting habitat onsite. There is no suitable foraging habitat onsite. None observed during Spring 2022 surveys.
<i>Rallus obsoletus obsoletus</i> , California Ridgeway's rail	E	E	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mudbottomed sloughs.	<b>Absent:</b> There is no suitable nesting habitat onsite. There is no suitable foraging habitat onsite. None observed during Spring 2022 surveys.

<i>Sternula antillarum browni</i> , California least tern	E	E	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates; sand beaches, alkali flats, landfills or paved areas.	<b>Absent:</b> There is no suitable nesting habitat onsite. There is no suitable foraging habitat onsite. None observed during Spring 2022 surveys.
<b>Amphibians and Reptiles</b>				
<i>Ambystoma californiense</i> , California tiger salamander	T	T	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	<b>Absent:</b> There is no suitable habitat onsite.
<i>Emys marmorata</i> , Western pond turtle	None	None CDFW – SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches.	<b>Absent:</b> There is no suitable habitat onsite.
<i>Rana draytonii</i> , California red-legged frog.	T	None CDFW - SSC	Lowlands & foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	<b>Absent:</b> There is no suitable habitat onsite.
<i>Thamnophis gigas</i> , giant garter snake	T	T	Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	<b>Absent:</b> There is no suitable habitat onsite.
<b>Mammals</b>				
<i>Lasurus cinereus</i> , hoary bat	None	None	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosting in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	<b>Low Potential to Occur:</b> There is no suitable nesting habitat onsite. None observed during Spring 2022 surveys. May forage onsite
<i>Reithrodontomys raviventris</i> , salt-marsh harvest mouse.	E	E CDFW – fully protected	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests.	<b>Absent:</b> There is no suitable nesting habitat onsite. No suitable foraging habitat onsite. None observed during Spring 2022 surveys.



<i>Sorex ornatus sinuosus</i> , Suisun shrew	None	None CDFW - SSC	Tidal marshes of the northern shores of San Pablo and Suisun Bays. Require dense low-lying cover and driftwood and other litter above the mean hightide line for nesting and foraging.	<b>Absent:</b> There is no suitable nesting habitat onsite. No suitable foraging habitat onsite. None observed during Spring 2022 surveys.
<b>Invertebrates</b>				
<i>Branchinecta conservation</i> , Conservancy fairy shrimp	E	None	Endemic to the grasslands of the Northern two-thirds of the Central Valley; found in large, turbid pools. Inhabit astatic pools located in swales formed by old, braided alluvium; filled by winter/ spring rains, last until June.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Branchinecta lynchi</i> , Vernal pool fairy shrimp	T	None	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains, in astatic rain-filled pools. Inhabit small, clear water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Elaphrus viridis</i> , Delta green ground beetle	T	None	Restricted to the margins of vernal pools in the grassland area between Jepson Prairie and Travis AFB. Prefers the sandy mud substrate where it slopes gently into water, with low-growing vegetation, 25-100% cover.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Linderiella occidentalis</i> , California linderiella	None	None	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depression. Water in pools has very low alkalinity, conductivity.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Bombus occidentalis</i> , western bumble bee	None	None	Foraging habitat consisting of <i>Ceanothus</i> , <i>Centaurea</i> , <i>Chrysothamnus</i> , <i>Cirsium</i> , <i>Geranium</i> , <i>Grindellia</i> , <i>Lupinus</i> , <i>Melilotus</i> , <i>Monardella</i> , <i>Rubus</i> , <i>Solidago</i> , and <i>Trifolium</i> .	<b>Low Potential to Occur:</b> There is marginal foraging habitat onsite. None observed during Spring 2022 surveys.
<i>Danaus plexippus</i> pop. 1, monarch – California overwintering population	Candidate	None CDFW - SSC	Winter roosts sites extend along the coast from Northern Mendocino to Baja California, Mexico. Roost located in wind-protected tree groves (Eucalyptus, Monterey	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.

			Pine, cypress), with nectar and water sources nearby.	
<i>Desmocerus californicus dimorphus</i> , Valley elderberry longhorn beetle	T	None	Occurs only in the Central Valley of California, in association with blue elderberry ( <i>Sambucus mexicana</i> ). Prefers to lay eggs in elderberry 2-8 inches in diameter; some preference shown for "stressed" elderberries.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.
<i>Syncaris pacifica</i> , California freshwater shrimp	E	E	Endemic to Marin, Napa, & Sonoma Counties. Found in low elevation, low gradient streams where riparian cover is moderate shallow pools away from main stream flow. Winter: undercut banks w/exposed roots. Summer: leafy branches touching water.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2022 surveys.

CODE DESIGNATIONS	
<b>E</b> = State or Federally-listed Endangered <b>T</b> = State or Federally-listed Threatened <b>C</b> = Federal Candidate Species <b>SSC</b> = State Species of Special Concern	<b>CNPS 1B</b> = Rare or Endangered in California or elsewhere <b>CNPS 2</b> = Rare or Endangered in California, more common elsewhere <b>CNPS 3</b> = More information is needed <b>CNPS 4</b> = Plants with limited distribution <b>0.1</b> = Seriously Threatened <b>0.2</b> = Fairly Threatened <b>0.3</b> = Not very Threatened

#### 4.2.1. Special-Status Plants

Surveys for special-status plant species were conducted with the property and a buffer area approximately 300 feet wide around the property. A review of the various special-status species databases and literature indicated that 30 special-status plant species had the potential to occur within the property and buffer area (see Table 1). Botanical surveys conducted during 2022 were conducted within the blooming period of all plant species of concern. However, upon further analysis and after the 2022 onsite evaluations, all were considered to be absent from the property due to the lack of suitable habitat. No further discussion of these species is provided in this analysis.

#### 4.2.2. Invertebrates

Eight special status invertebrate species were evaluated as being absent from the site due to unsuitable habitat. One unlisted species of bumble bee has been observed within a close proximity to the property; however, there is a marginal amount of food plant genera (foraging habitat consisting of *Ceanothus*, *Centaurea*, *Chrysothamnus*, *Cirsium*, *Geranium*, *Grindellia*, *Lupinus*, *Melilotus*, *Monardella*, *Rubus*, *Solidago*, and *Trifolium* (Williams et al. 2014). within

the property to support this species.

#### **4.2.3. Reptiles & Amphibians**

Two special-status reptiles and two special status amphibian species were evaluated as being absent from the property due to unsuitable habitat. The property does not support vernal pools habitats.

#### **4.2.4. Protected Birds and Raptors**

Twenty-three special-status birds and raptors were evaluated as having no nesting or breeding habitat within or near the property. However, avian species could use the ruderal grasslands for foraging. No burrows or burrow surrogates were found within the property or within the 300 foot buffer around the property. The property or surrounding areas do not have debris piles, culverts or pipes suitable for nesting. No California ground squirrels or other small rodents were observed during intensive onsite surveys. Numerous bird species were observed overflying the property, and occasionally attempting to forage within the ruderal grassland habitat. Most, if not all, foraging attempts were unsuccessful due to the lack of available prey base.

#### **4.2.5. Soils**

According to the *Web Soil Survey* (Natural Resources Conservation Service [NRCS] 2021), one soil type dominates the property (*Natural Resources Conservation Service Soil Types*): Antioch-San Ysidro complex, 0 to 2 percent slopes. The Antioch-San Ysidro soil series consists of nearly level, moderately well-drained soils in alluvium derived from sedimentary rock. The vegetation is ruderal, non-native grasses and forbs. The mean average annual temperature is 57° to 61° F., the average rainfall is 16 to 18 inches, and the frost-free season is 250 to 270 days. Permeability is rapid. These soils are not classified as “hydric”. Due to past grading and disking of onsite soils, as well as possible disposal of offsite soils during the construction of the surrounding commercial and industrial business, the onsite soils contain a significant amount of “cut-and-fill” material. The disturbed soils do not exhibit small mammal burrows (California ground squirrel, mice, voles, etc.).

#### **4.2.6. Wetlands and Others Water Coordination Summary**

MHBA conducted a determination of Waters of the U.S. within the action area. Surveys were conducted during March 2022 by MHBA's Marcus H. Bole. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual* (1987); the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008); the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (2007); the *U.S. Army Corps of Engineers Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region* (2011); and the *U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (2008).

## Determination of Waters of the United States

The intent of this determination is to identify wetlands and “Other Waters of the United States” that are present within the action area that could fall under the regulatory jurisdiction of the U. S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Marcus H. Bole & Associates has employed the Routine On-Site Determination methodology for this study (as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, dated September 2008). The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

1) Vegetation. Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent), and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter. No wetland habitats were identified on or near the action area. Vegetation throughout the action area predominately consists of upland plants including slender wild oats, *Avena barbata*, ripgut brome, *Bromus diandrus*, yellow star thistle, *Centaurea solstitialis*, barnyard grass, *Echinochloa crus-galli*, Bermuda grass, *Cynodon dactylon*, and cut-leaved geranium, *Geranium dissectum*. Due to seasonal precipitation, a scattered number of season wetland grasses were observed within the property including *Eleocharis macrostachya* and *Rumex crispus*. There is only one tree within the property, a medium diameter willow (*Salix*, spp.).

2) Hydric Soils. Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Redoximorphic features (commonly referred to as mottles) are areas in the soils that have brighter (higher chroma) or grayer (lower chroma) colors than the soil matrix. Redoximorphic features are the result of the oxidation and reduction process that occurs under anaerobic conditions. Iron and manganese concretions form during the oxidation-reduction process, when iron and manganese in suspension are sometimes segregated as oxides into concretions or soft masses. These

accumulations are usually black or dark brown. Concretions 2 mm in diameter occurring within 7.5 cm of the surface are evidence that the soil is saturated for long periods near the surface. Soil pits were excavated throughout the action area within the following soil series:

Antioch-San Ysidro complex, 0 to 2 percent slopes. Antioch-San Ysidro loam soils are the dominate series throughout the property. Antioch-San Ysidro soils are not listed as a “hydric” soil of Sonoma County. Soil pits were excavated throughout this area and all the pits were characterized by moderately well drained soil soils. The Antioch-San Ysidro loam series consists of moderately well drained soils on low fan terraces. These soils are moderately deep to a hardpan. They formed in alluvium derived from sedimentary rock sources. Soils were evaluated using the Musell chroma tables. Generally, the soils were universally determined to be light brownish-gray (10YR 6/3) sandy loam that has few, fine, distinct mottles of brownish-yellow (10YR 6/6). No hydric soil indicators were observed within these soil pits.

3) Hydrology. Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for 5% of the growing season (approximately 12 days) (USDA, 1967). Indicators include visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogammic lichens, and algal mats. There are no natural hydrological features within the action area. However, where winter precipitation settled in a few shallow areas, alga-mat and scattered wetland seasonal grasses were observed. These areas are not vernal pools and represent only isolated, non-jurisdictional features.

#### Wetland Determination Results

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no evidence of state or federal jurisdictional wetland habitats within or near the property. There are no seasonal or perennial ponds, streams, creeks or tributaries within or near the property.

#### **4.2.7. Wildlife Movement/Corridors**

The property is surrounded on all sides by commercial/residential properties and major roadways. As such, wildlife use is expected to be relatively low. The property does not fall within an Essential Habitat Connectivity area mapped by the CDFW.

#### **4.2.8. Sensitive Natural Communities**

There are no sensitive natural communities within or near the property. Due to the built up nature of the surrounding properties and the disturbed, graded soil conditions, there is little evidence that the property would support sensitive natural communities.

### **5.0. Recommended Minimization and Avoidance Measures**

No sensitive animal or plant species were observed during the biological/botanical surveys and assessments. However, Marcus H. Bole & Associates recommends the implementation of the following minimization and avoidance measures for the protection of onsite biological resources

during project implementation in the remote case that a sensitive resource may be encountered:

1. A worker environmental awareness training should be conducted prior to project initiation for construction personnel, and should consist of a brief presentation in which persons knowledgeable in local sensitive habitats and wildlife, and regulatory protection should discuss environmental concerns.
2. A pre-construction biological species clearance survey should be conducted no less than 14 days or more than 30 days prior to the beginning of construction activities to ensure that none of the special status animal or plant species identified in Table 1 of the document is present.
3. In order to avoid or reduce potential impacts to nesting special-status avian species, Marcus H. Bole & Associates will conduct pre-construction nesting surveys for special-status avian species within the property and buffer area during the appropriate survey periods for each species. Surveys will follow CDFW and USFWS approved protocols where applicable. Where active special-status bird nest sites are identified or suspected to occur during pre-construction surveys, a qualified biologist will establish 300 foot buffer zones around the nest sites, and no disturbance activities will occur with these buffer zones until young birds have fledged. Nesting buffer zones shall be marked with stakes, and signs shall be placed on the stakes indicating that no construction activities are to be conducted in the buffer zones until the areas are cleared by a qualified biologist.

## **6.0. Conclusions**

Special-status species and their habitat have been documented in the general vicinity of the subject property. However, no special-status animal or plant species were observed during the biological survey and assessment of the subject property and buffer area. It is highly unlikely that the project will have impacts on listed or sensitive species or habitats.

The project would temporarily disturb common wildlife species. However, this impact is considered less-than-significant because common wildlife species associated with the vegetative communities present within the subject property and buffer area are locally and regionally common. With the implementation of the previously described minimization and avoidance measures prior to and during the construction phase of the project, potential impacts to common wildlife species will be avoided.

This concludes our biological resource assessment of the Tractor Supply Suisun City Project, a ±8.29-acre property located in the City of Suisun, Solano County, California. If you have any questions concerning our findings or recommendations please feel free to contact me directly at: Bole & Associates, Attn: Marcus H. Bole, 104 Brock Drive, Wheatland, CA 95692, phone 530-633-0117, fax 530-633-0119, email: [marcus@mhbole.com](mailto:marcus@mhbole.com).

## Enclosures

Enclosure A: Maps & Photos  
Enclosure B: Species Databases  
Enclosure C: Soil Data  
Enclosure D: Site Plans

## 7.0 References

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## ENCLOSURE A: MAPS & SITE PHOTOS

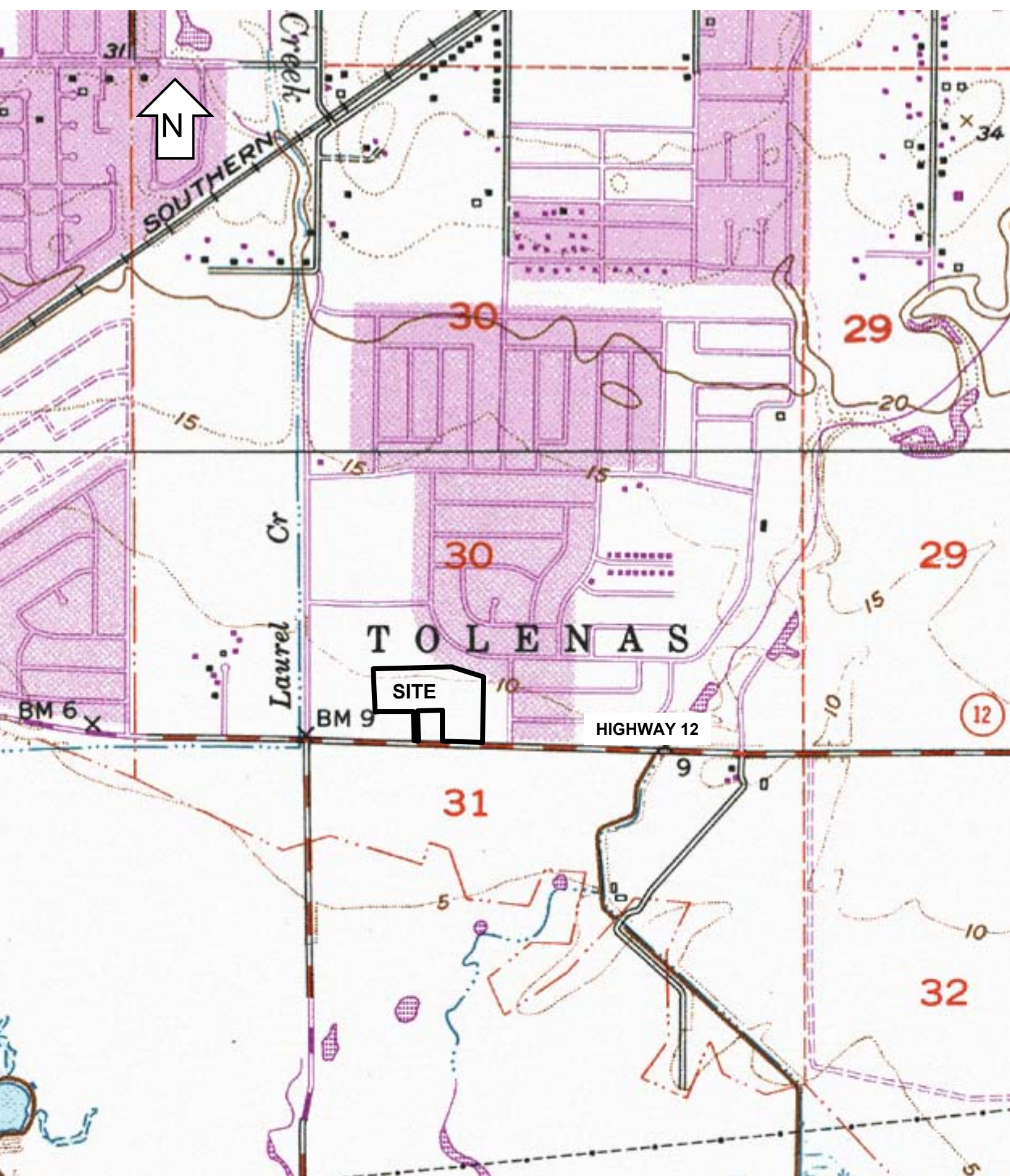


Figure 1, Vicinity Map: Tractor Supply Suisun City Project, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180.



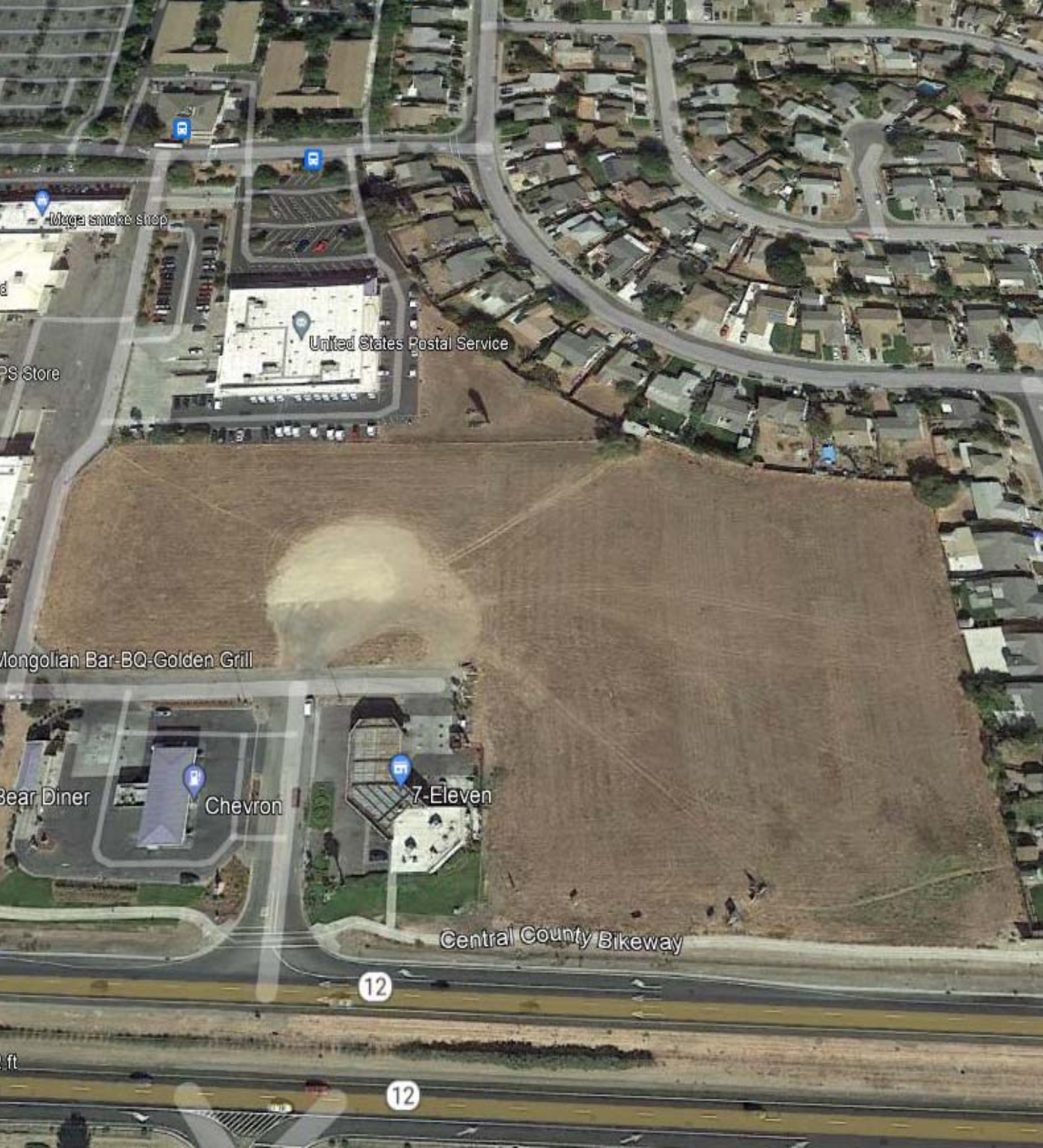


Figure 2: 2022 Aerial Site Map: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as graded and disked agricultural land with cut & fill material.





**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE:** Tractor Supply Suisun City Site  
**ITEM:** Non-native grassland habitat  
**DATE:** 12 February, 2022      **PLATE:** 1





**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE:** Tractor Supply Suisun City Site  
**ITEM:** Non-native grassland habitat  
**DATE:** 9 March, 2022      **PLATE:** 2

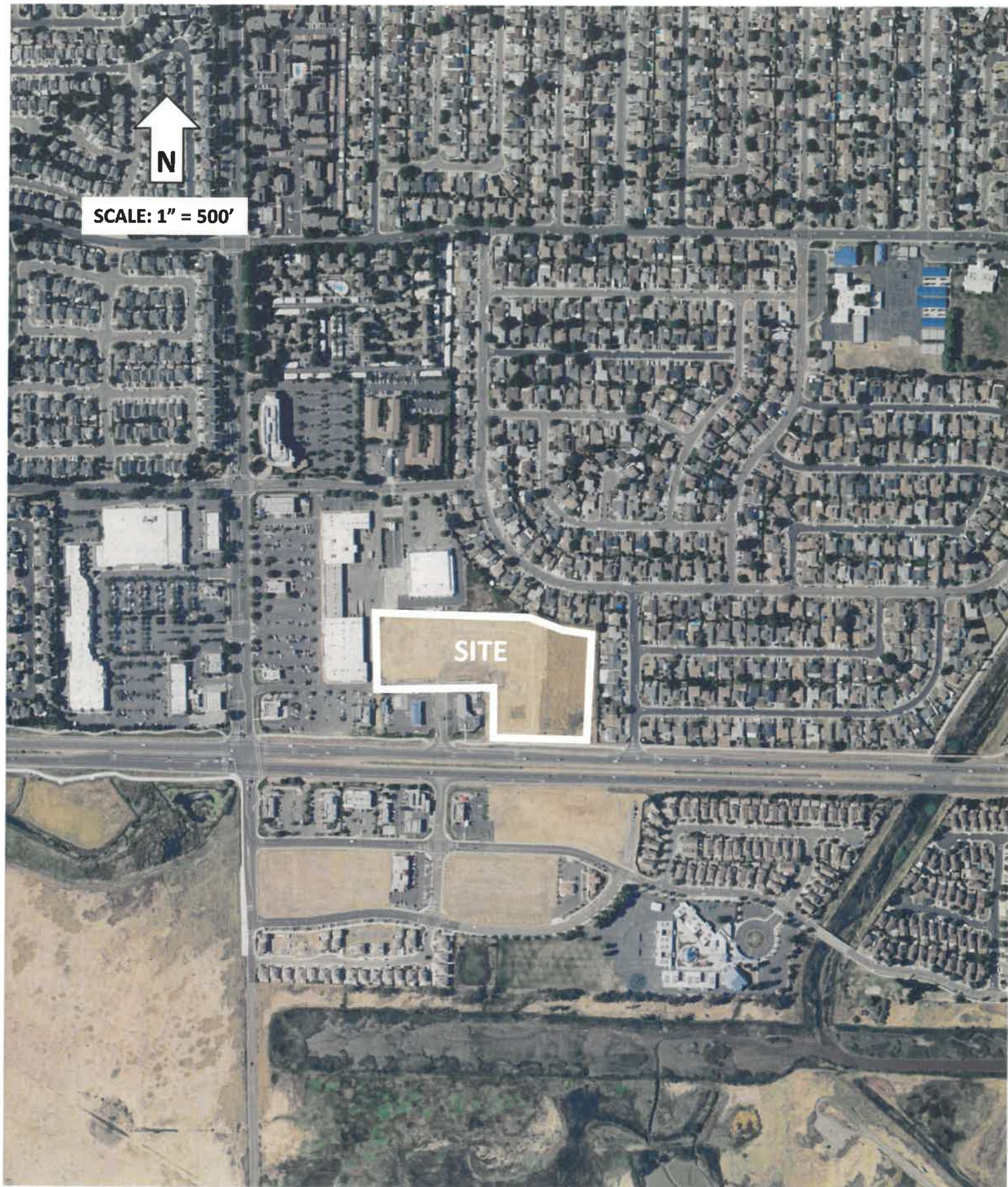




**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE:** Tractor Supply Suisun City Site  
**ITEM:** Graded & disturbed habitats  
**DATE:** 31 March, 2022      **PLATE:** 3





2016 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as graded and disked agricultural land.





2012 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as graded, disturbed (cut & fill) areas.





2009 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as graded with an event (possibly a circus tent?) in western area.





2006 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as undeveloped land.



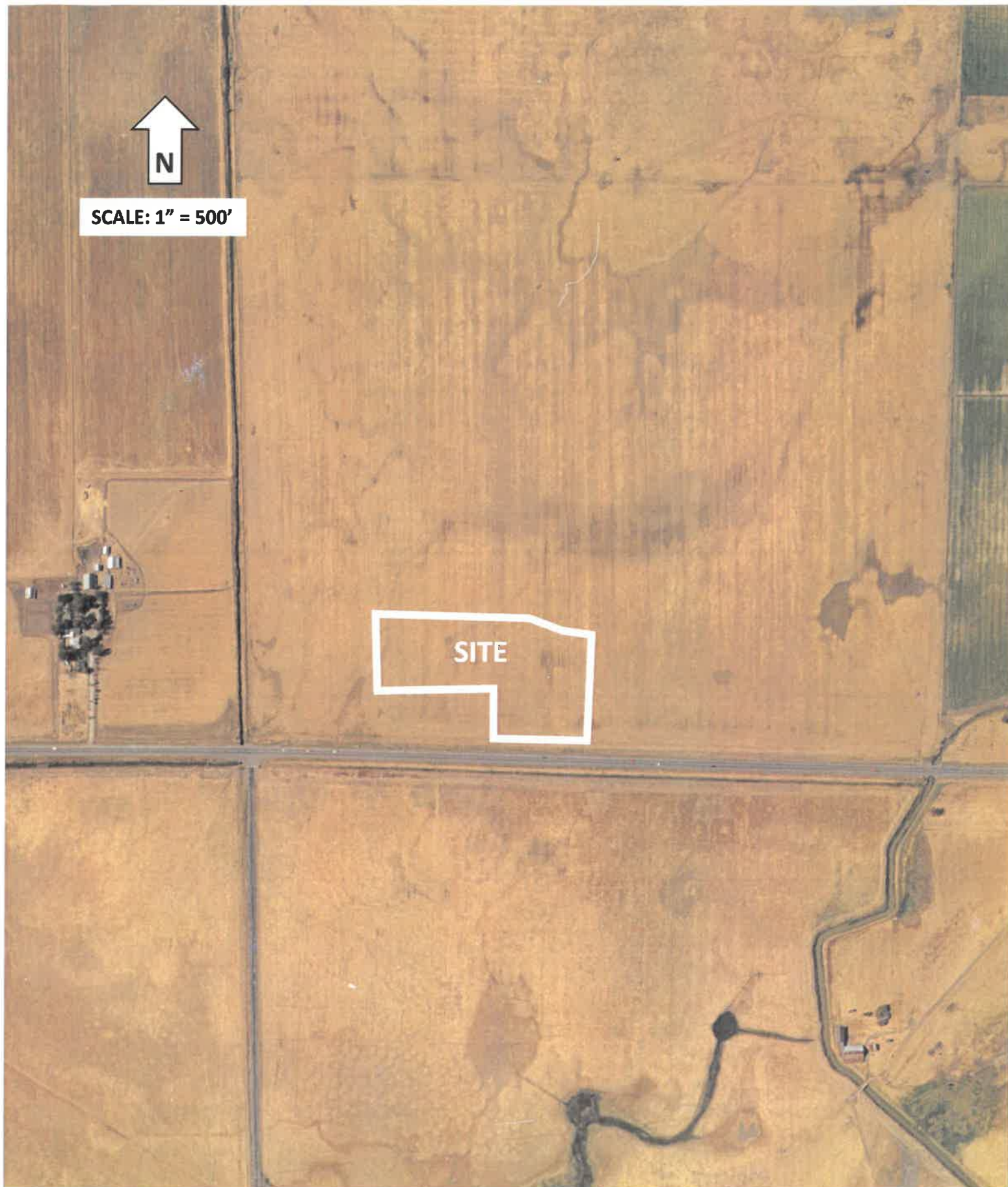


1993 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as undeveloped land.



1982 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as agricultural land.





1974 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as undeveloped/agricultural/grazing land.



1952 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown as undeveloped/agricultural/grazing land.



1937 Historical Aerial: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W, Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solano County APNs 0173-390-160 and 0173-390-180. Property shown undeveloped/agricultural/grazing land.

## ENCLOSURE B: CNDDB & IPAC DATABASES





## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

Project Code: 2022-0004000

Project Name: TCS Suisun City

February 07, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

[http://www.nwr.noaa.gov/protected\\_species/species\\_list/species\\_lists.html](http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html)

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan &

Attachment(s):

- Official Species List
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Sacramento Fish And Wildlife Office**

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

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## Project Summary

Project Code: 2022-0004000

Event Code: None

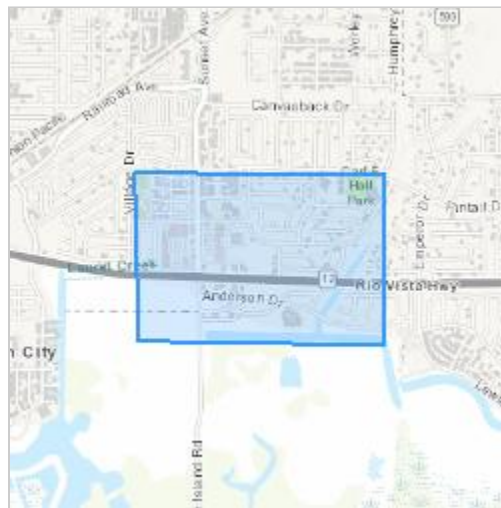
Project Name: TCS Suisun City

Project Type: Mixed-Use Construction

Project Description: Solano County APNS 0173-390-160 & 0173-390-180, an 8.29-acre project site, Suisun City, CA

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.243488799999994,-122.01610384186013,14z>



Counties: Solano County, California

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## Endangered Species Act Species

There is a total of 16 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/613">https://ecos.fws.gov/ecp/species/613</a>	Endangered

### Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>	Endangered

### Reptiles

NAME	STATUS
Giant Garter Snake <i>Thamnophis gigas</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4482">https://ecos.fws.gov/ecp/species/4482</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (Central CA DPS) There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Threatened

## Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a>	Threatened

## Insects

NAME	STATUS
Delta Green Ground Beetle <i>Elaphrus viridis</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2319">https://ecos.fws.gov/ecp/species/2319</a>	Threatened
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Crustaceans

NAME	STATUS
California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7903">https://ecos.fws.gov/ecp/species/7903</a>	Endangered
Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/8246">https://ecos.fws.gov/ecp/species/8246</a>	Endangered
Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/498">https://ecos.fws.gov/ecp/species/498</a>	Threatened

## Flowering Plants

NAME	STATUS
Contra Costa Goldfields <i>Lasthenia conjugens</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/7058">https://ecos.fws.gov/ecp/species/7058</a>	Endangered
Santa Cruz Tarplant <i>Holocarpha macradenia</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/6832">https://ecos.fws.gov/ecp/species/6832</a>	Threatened
Soft Bird's-beak <i>Cordylanthus mollis ssp. mollis</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/8541">https://ecos.fws.gov/ecp/species/8541</a>	Endangered
Suisun Thistle <i>Cirsium hydrophilum var. hydrophilum</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2369">https://ecos.fws.gov/ecp/species/2369</a>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad< IS </span>(Fairfield South (3812221)<span style="color:Red"> OR </span>Fairfield North (3812231)<span style="color:Red"> OR </span>Vine Hill (3812211)<span style="color:Red"> OR </span>Denverton (3812128)<span style="color:Red"> OR </span>Cordelia (3812222)<span style="color:Red"> OR </span>Mt. George (3812232)<span style="color:Red"> OR </span>Elmira (3812138)<span style="color:Red"> OR </span>Honker Bay (3812118)<span style="color:Red"> OR </span>Benicia (3812212))<br /><span style="color:Red"> AND </span>(Federal Listing Status<span style="color:Red"> IS </span>(Endangered<span style="color:Red"> OR </span>Threatened<span style="color:Red"> OR </span>Proposed Endangered<span style="color:Red"> OR </span>Proposed Threatened<span style="color:Red"> OR </span>Candidate<span style="color:Red"> OR </span>All CNDDDB element occurrences<span style="color:Red"> OR </span>Delisted)<span style="color:Red"> OR </span>State Listing Status<span style="color:Red"> IS </span>(Endangered<span style="color:Red"> OR </span>Threatened<span style="color:Red"> OR </span>Rare<span style="color:Red"> OR </span>All CNDDDB element occurrences<span style="color:Red"> OR </span>Delisted<span style="color:Red"> OR </span>Candidate Endangered<span style="color:Red"> OR </span>Candidate Threatened))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Accipiter cooperii</i></b> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<b><i>Agelaius tricolor</i></b> tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
<b><i>Agrostis hendersonii</i></b> Henderson's bent grass	PMPOA040K0	None	None	G2Q	S2	3.2
<b><i>Ambystoma californiense pop. 1</i></b> California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3	S3	WL
<b><i>Ammodramus savannarum</i></b> grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
<b><i>Aquila chrysaetos</i></b> golden eagle	ABNKC22010	None	None	G5	S3	FP
<b><i>Ardea herodias</i></b> great blue heron	ABNGA04010	None	None	G5	S4	
<b><i>Asio flammeus</i></b> short-eared owl	ABNSB13040	None	None	G5	S3	SSC
<b><i>Astragalus tener var. tener</i></b> alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
<b><i>Athene cunicularia</i></b> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<b><i>Atriplex cordulata var. cordulata</i></b> heartscale	PDCHE040B0	None	None	G3T2	S2	1B.2
<b><i>Atriplex depressa</i></b> brittlescale	PDCHE042L0	None	None	G2	S2	1B.2
<b><i>Atriplex persistens</i></b> vernal pool smallscale	PDCHE042P0	None	None	G2	S2	1B.2
<b><i>Balsamorhiza macrolepis</i></b> big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
<b><i>Blepharizonia plumosa</i></b> big tarplant	PDAST1C011	None	None	G1G2	S1S2	1B.1
<b><i>Bombus caliginosus</i></b> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<b><i>Bombus crotchii</i></b> Crotch bumble bee	IIHYM24480	None	None	G3G4	S1S2	





Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Bombus occidentalis</i></b> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<b><i>Branchinecta conservatio</i></b> Conservancy fairy shrimp	ICBRA03010	Endangered	None	G2	S2	
<b><i>Branchinecta lynchi</i></b> vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
<b><i>Branchinecta mesovallensis</i></b> midvalley fairy shrimp	ICBRA03150	None	None	G2	S2S3	
<b><i>Brodiaea leptandra</i></b> narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
<b><i>Buteo regalis</i></b> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<b><i>Buteo swainsoni</i></b> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<b><i>Calochortus pulchellus</i></b> Mt. Diablo fairy-lantern	PMLIL0D160	None	None	G2	S2	1B.2
<b><i>Carex lyngbyei</i></b> Lyngbye's sedge	PMCYP037Y0	None	None	G5	S3	2B.2
<b><i>Castilleja affinis</i> var. <i>neglecta</i></b> Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1T2	S1S2	1B.2
<b><i>Ceanothus purpureus</i></b> holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
<b><i>Centromadia parryi</i> ssp. <i>congdonii</i></b> Congdon's tarplant	PDAST4R0P1	None	None	G3T1T2	S1S2	1B.1
<b><i>Centromadia parryi</i> ssp. <i>parryi</i></b> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<b><i>Chloropyron molle</i> ssp. <i>hispidum</i></b> hispid salty bird's-beak	PDSCR0J0D1	None	None	G2T1	S1	1B.1
<b><i>Chloropyron molle</i> ssp. <i>molle</i></b> soft salty bird's-beak	PDSCR0J0D2	Endangered	Rare	G2T1	S1	1B.2
<b><i>Cicuta maculata</i> var. <i>bolanderi</i></b> Bolander's water-hemlock	PDAP10M051	None	None	G5T4T5	S2?	2B.1
<b><i>Circus hudsonius</i></b> northern harrier	ABNKC11011	None	None	G5	S3	SSC
<b><i>Cirsium hydrophilum</i> var. <i>hydrophilum</i></b> Suisun thistle	PDAST2E1G1	Endangered	None	G2T1	S1	1B.1
<b><i>Coastal Brackish Marsh</i></b> Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
<b><i>Corynorhinus townsendii</i></b> Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
<b><i>Coturnicops noveboracensis</i></b> yellow rail	ABNME01010	None	None	G4	S1S2	SSC



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Danaus plexippus pop. 1</i></b> monarch - California overwintering population	IILEPP2012	Candidate	None	G4T2T3	S2S3	
<b><i>Delphinium recurvatum</i></b> recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
<b><i>Desmocerus californicus dimorphus</i></b> valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S3	
<b><i>Dirca occidentalis</i></b> western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
<b><i>Downingia pusilla</i></b> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<b><i>Dumontia oregonensis</i></b> hairy water flea	ICBRA23010	None	None	G1G3	S1	
<b><i>Egretta thula</i></b> snowy egret	ABNGA06030	None	None	G5	S4	
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b><i>Elaphrus viridis</i></b> Delta green ground beetle	IICOL36010	Threatened	None	G1	S1	
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Erigeron greenei</i></b> Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
<b><i>Eriogonum truncatum</i></b> Mt. Diablo buckwheat	PDPGN085Z0	None	None	G1	S1	1B.1
<b><i>Eryngium jepsonii</i></b> Jepson's coyote-thistle	PDAP10Z130	None	None	G2	S2	1B.2
<b><i>Erysimum capitatum var. angustatum</i></b> Contra Costa wallflower	PDBRA16052	Endangered	Endangered	G5T1	S1	1B.1
<b><i>Extriplex joaquinana</i></b> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<b><i>Falco peregrinus anatum</i></b> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<b><i>Fritillaria pluriflora</i></b> adobe-lily	PMLIL0V0F0	None	None	G2G3	S2S3	1B.2
<b><i>Geothlypis trichas sinuosa</i></b> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
<b><i>Helianthella castanea</i></b> Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
<b><i>Helminthoglypta nickliniana bridgesi</i></b> Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
<b><i>Hesperolinon breweri</i></b> Brewer's western flax	PDLIN01030	None	None	G2	S2	1B.2



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Hydrochara rickseckeri</i></b> Ricksecker's water scavenger beetle	IICOL5V010	None	None	G2?	S2?	
<b><i>Isocoma arguta</i></b> Carquinez goldenbush	PDAST57050	None	None	G1	S1	1B.1
<b><i>Lasiurus blossevillii</i></b> western red bat	AMACC05060	None	None	G4	S3	SSC
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G3G4	S4	
<b><i>Lasthenia conjugens</i></b> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<b><i>Lasthenia glabrata ssp. coulteri</i></b> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b><i>Laterallus jamaicensis coturniculus</i></b> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<b><i>Lathyrus jepsonii var. jepsonii</i></b> Delta tule pea	PDFAB250D2	None	None	G5T2	S2	1B.2
<b><i>Legenere limosa</i></b> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<b><i>Lepidurus packardii</i></b> vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
<b><i>Leptosiphon jepsonii</i></b> Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
<b><i>Lilaeopsis masonii</i></b> Mason's lilaeopsis	PDAP119030	None	Rare	G2	S2	1B.1
<b><i>Limosella australis</i></b> Delta mudwort	PDSCR10030	None	None	G4G5	S2	2B.1
<b><i>Linderiella occidentalis</i></b> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<b><i>Masticophis lateralis euryxanthus</i></b> Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
<b><i>Melospiza melodia maxillaris</i></b> Suisun song sparrow	ABPBXA301K	None	None	G5T3	S3	SSC
<b><i>Melospiza melodia samuelis</i></b> San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
<b><i>Microseris paludosa</i></b> marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
<b><i>Navarretia leucocephala ssp. bakeri</i></b> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<b>Northern Claypan Vernal Pool</b> Northern Claypan Vernal Pool	CTT44120CA	None	None	G1	S1.1	
<b>Northern Coastal Salt Marsh</b> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Nycticorax nycticorax</i></b> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<b><i>Nyctinomops macrotis</i></b> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<b><i>Oenothera deltooides ssp. howellii</i></b> Antioch Dunes evening-primrose	PDONA0C0B4	Endangered	Endangered	G5T1	S1	1B.1
<b><i>Oncorhynchus mykiss irideus pop. 11</i></b> steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
<b><i>Orcuttia inaequalis</i></b> San Joaquin Valley Orcutt grass	PMPOA4G060	Threatened	Endangered	G1	S1	1B.1
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Perognathus inornatus</i></b> San Joaquin pocket mouse	AMAFD01060	None	None	G2G3	S2S3	
<b><i>Plagiobothrys hystriculus</i></b> bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1
<b><i>Pogonichthys macrolepidotus</i></b> Sacramento splittail	AFCJB34020	None	None	GNR	S3	SSC
<b><i>Polygonum marinense</i></b> Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
<b><i>Puccinellia simplex</i></b> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<b><i>Rallus obsoletus obsoletus</i></b> California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
<b><i>Rana boylei</i></b> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<b><i>Rana draytonii</i></b> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b><i>Reithrodontomys raviventris</i></b> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<b><i>Rhynchospora californica</i></b> California beaked-rush	PMCYP0N060	None	None	G1	S1	1B.1
<b><i>Saldula usingeri</i></b> Wilbur Springs shorebug	IIHEM07010	None	None	G1	S1	
<b><i>Senecio aphanactis</i></b> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<b><i>Serpentine Bunchgrass</i></b> Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
<b><i>Sidalcea hickmanii ssp. napensis</i></b> Napa checkerbloom	PDMAL110A6	None	None	G3T1	S1	1B.1
<b><i>Sidalcea keckii</i></b> Keck's checkerbloom	PDMAL110D0	Endangered	None	G2	S2	1B.1



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



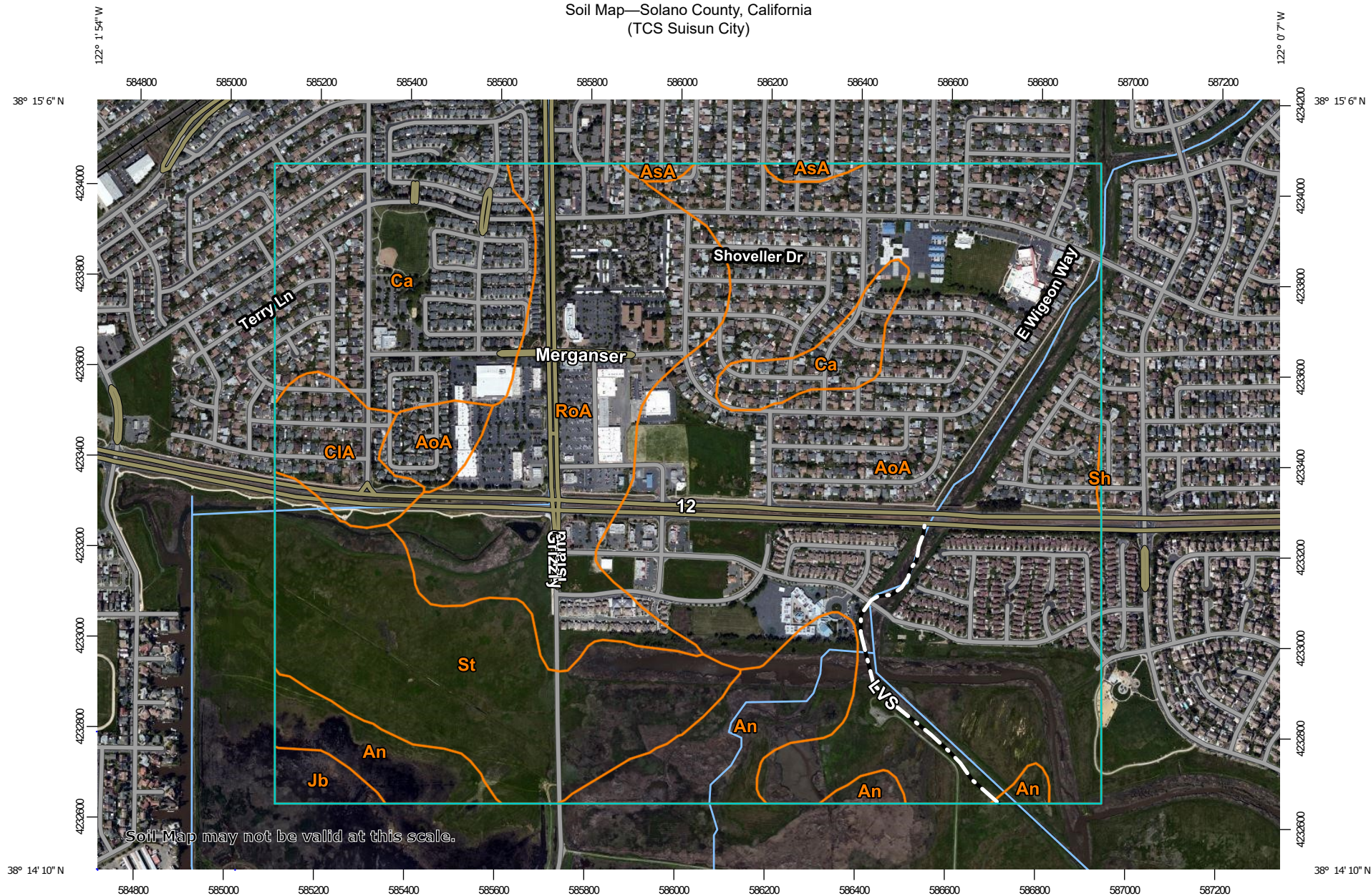
Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Sorex ornatus sinuosus</i></b> Suisun shrew	AMABA01103	None	None	G5T1T2Q	S1S2	SSC
<b><i>Spargularia macrotheca var. longistyla</i></b> long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
<b><i>Speyeria callippe callippe</i></b> callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
<b><i>Spirinchus thaleichthys</i></b> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<b><i>Sternula antillarum browni</i></b> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<b><i>Stuckenia filiformis ssp. alpina</i></b> northern slender pondweed	PMPOT03091	None	None	G5T5	S2S3	2B.2
<b><i>Symphyotrichum lentum</i></b> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<b><i>Taxidea taxus</i></b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b><i>Thamnophis gigas</i></b> giant gartersnake	ARADB36150	Threatened	Threatened	G2	S2	
<b><i>Trichostema ruygtii</i></b> Napa bluecurls	PDLAM220H0	None	None	G1G2	S1S2	1B.2
<b><i>Trifolium amoenum</i></b> two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
<b><i>Trifolium hydrophilum</i></b> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<b><i>Valley Needlegrass Grassland</i></b> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
<b><i>Viburnum ellipticum</i></b> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 115

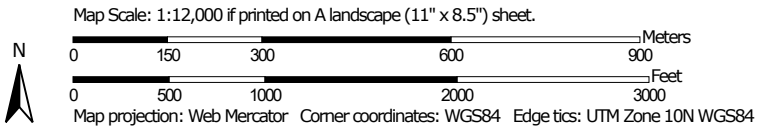
## ENCLOSURE C: SOIL DATA



Soil Map—Solano County, California  
(TCS Suisun City)




Soil Map may not be valid at this scale.




## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Solano County, California

Survey Area Data: Version 15, Sep 9, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 30, 2019—Apr 17, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

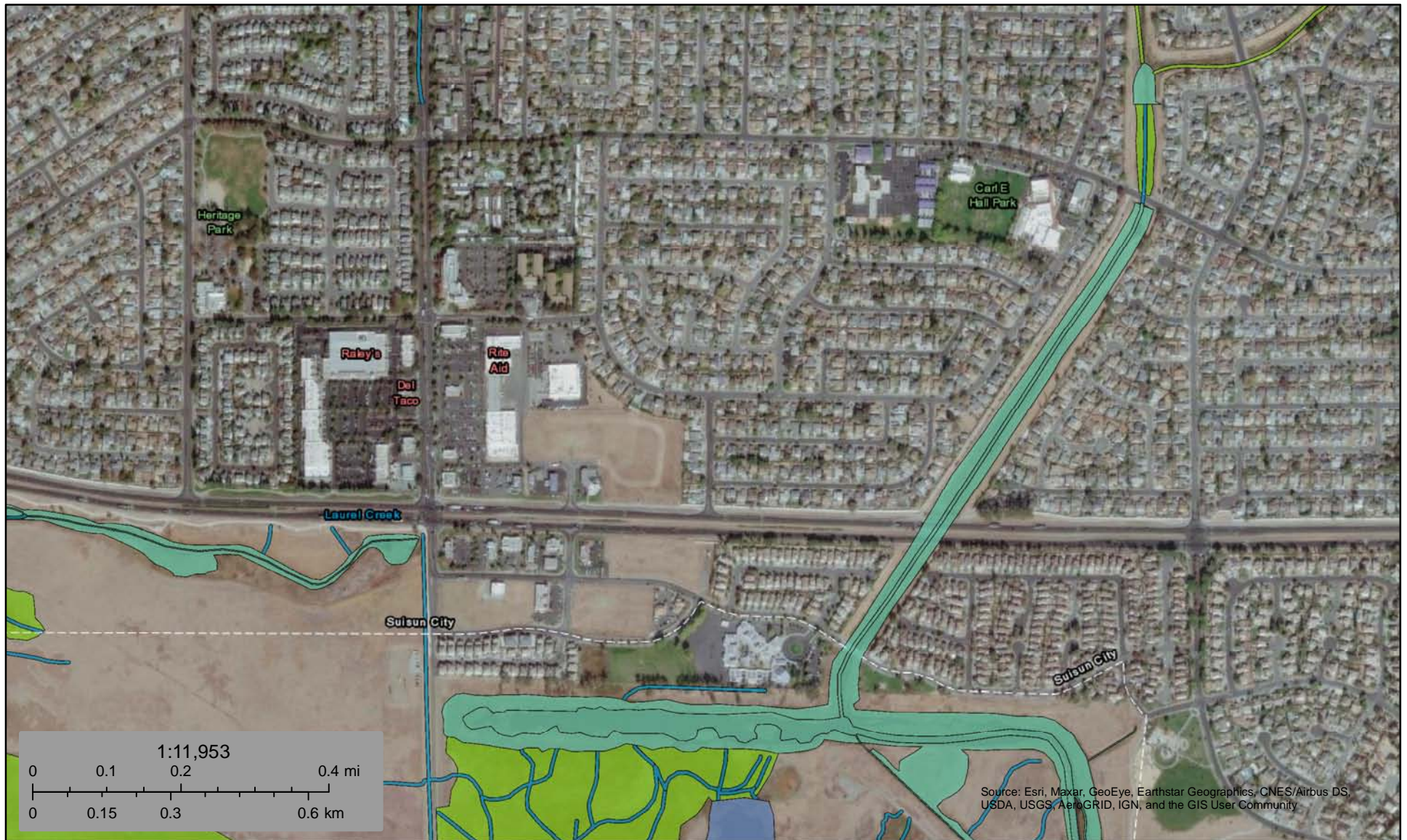
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
An	Alviso silty clay loam	47.0	7.3%
AoA	Antioch-San Ysidro complex, 0 to 2 percent slopes	301.4	46.8%
AsA	Antioch-San Ysidro complex, thick surface, 0 to 2 percent slopes	2.8	0.4%
Ca	Capay silty clay loam, 0 percent slopes, MLRA 17	83.4	13.0%
CIA	Clear Lake clay, saline, drained, 0 to 2 percent slopes, MLRA 14	17.3	2.7%
Jb	Joice muck, clayey subsoil, 0 to 2 percent slopes, MLRA 16	5.5	0.8%
RoA	Rincon clay loam, 0 to 2 percent slope	102.6	15.9%
Sh	Solano loam	0.3	0.0%
St	Sycamore silty clay loam, saline	83.5	13.0%
<b>Totals for Area of Interest</b>		<b>643.8</b>	<b>100.0%</b>



U.S. Fish and Wildlife Service

# National Wetlands Inventory

## TCS Suisun City, CA



February 11, 2022

### Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

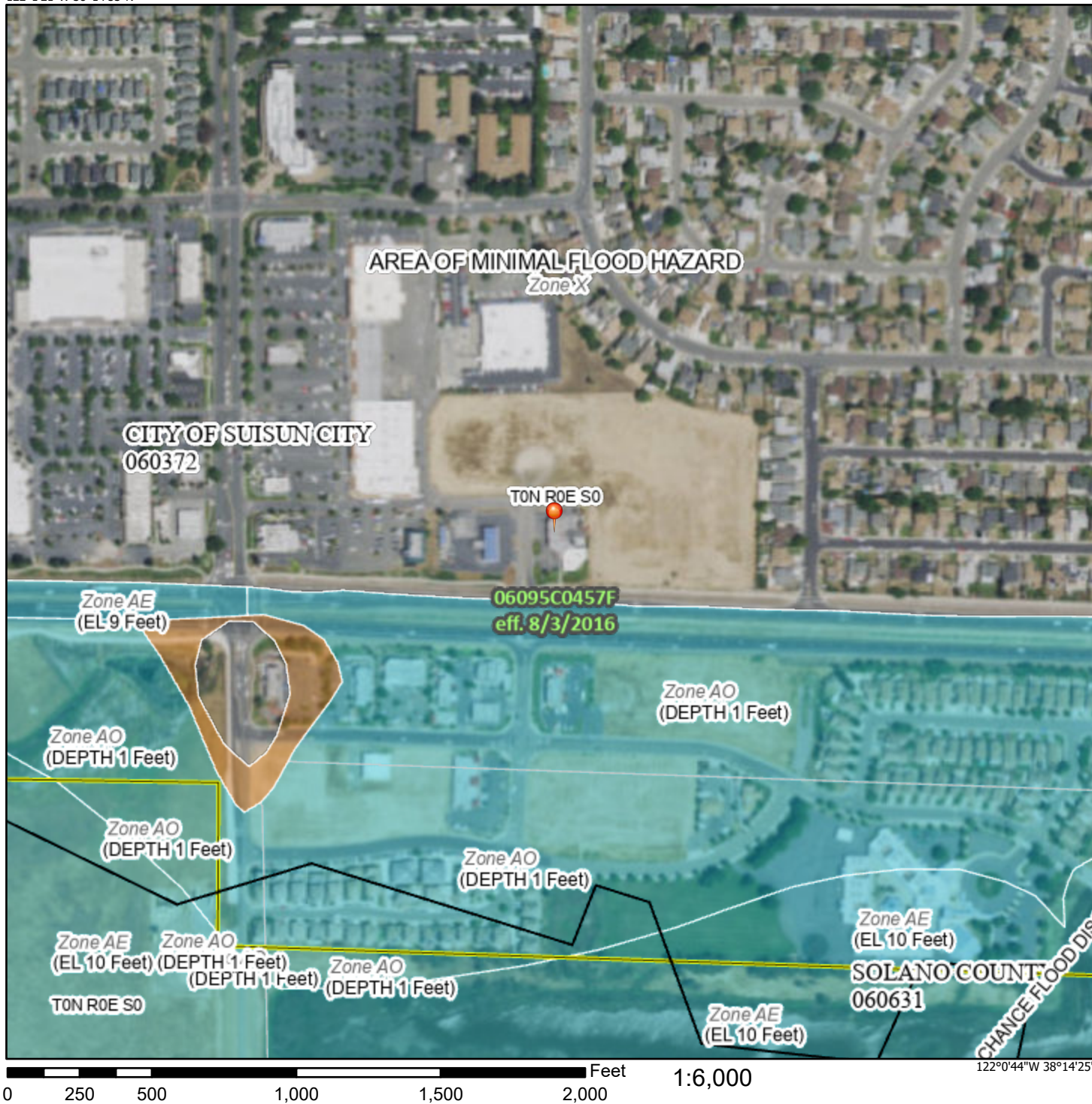
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



# National Flood Hazard Layer FIRMette



122°1'21"W 38°14'53"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D
		Channel, Culvert, or Storm Sewer
OTHER FEATURES		Levee, Dike, or Floodwall
		Cross Sections with 1% Annual Chance Water Surface Elevation
MAP PANELS		Coastal Transect
		Base Flood Elevation Line (BFE)
OTHER FEATURES		Limit of Study
		Jurisdiction Boundary
OTHER FEATURES		Coastal Transect Baseline
		Profile Baseline
OTHER FEATURES		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

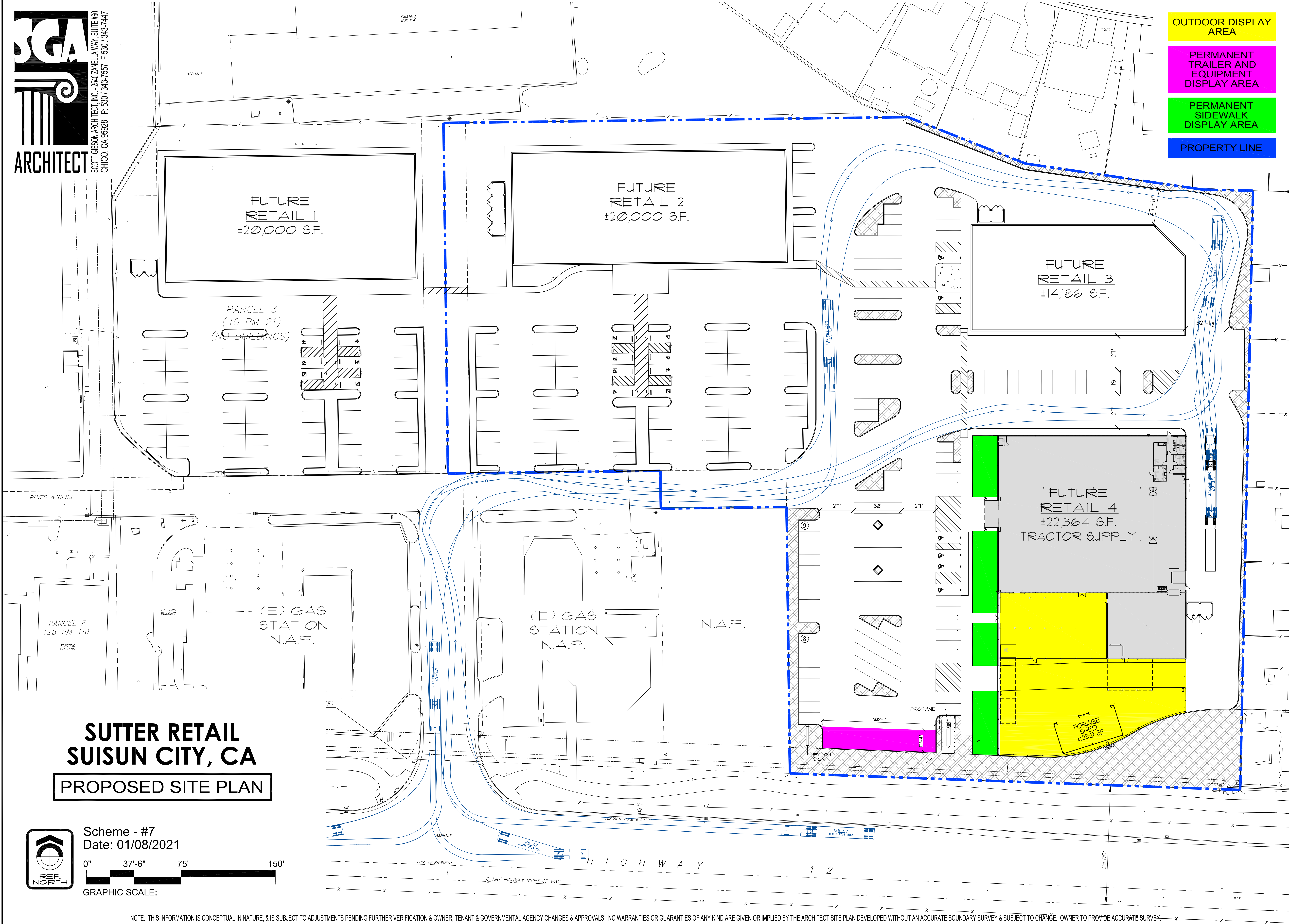
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **2/11/2022 at 4:30 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

## ENCLOSURE D: PROJECT SITE PLANS



- OUTDOOR DISPLAY AREA
- PERMANENT TRAILER AND EQUIPMENT DISPLAY AREA
- PERMANENT SIDEWALK DISPLAY AREA
- PROPERTY LINE





## Appendix C Cultural Resources Inventory Study

# **CULTURAL RESOURCES INVENTORY SURVEY**

**Suisun City Tractor Supply Development Project  
circa 8.29-Acres  
Suisun City, Solano County, California**

Prepared for

**Hilbers Incorporated**  
770 North Walton Avenue, Suite 100  
Yuba City, CA 95993

Author

**Sean Michael Jensen, M. A.**

**Keywords** *for Information Center Use:*

Cultural Resources Inventory Survey, 8.29-Acres, Solano County, CEQA, USGS Fairfield South, Ca. 7.5' Quadrangle, No Significant Historical Resources, No Unique Archaeological Resources

March 18, 2022

## **ABSTRACT**

This report details the results of a cultural resources inventory survey involving creation of a commercial development, involving approximately 8.29-acres of land located immediately adjacent to the north side of State Route 12, approximately 3-miles east of Interstate 80, within the southern portion of Suisun City, Solano County, California.

The proponent proposes to create a Tractor Supply commercial development, which will include grading and land recontouring, construction of a new commercial building and structures, creation of access roads and parking, placement of buried utilities, and general landscaping.

Existing records at the Northwest Information Center document that all of the present APE had been subjected to previous archaeological investigation, and that no cultural resources have been documented within the APE. As well, the present effort included an intensive-level pedestrian survey. No prehistoric or historic-era cultural resources were identified during the pedestrian survey.

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on February 5, 2022. The NAHC responded on March 17, 2022, indicating that a search of their Sacred Lands File was negative.

The probability of encountering buried archaeological sites within the APE is low. This conclusion is derived in part from the observed soil matrices which have been subjected to a high degree of disturbance associated with past impacts to the subject property. Evidence of ground disturbance assisted in determining whether or not subsurface resources were present within the APE. Overall, the soil types present and contemporary disturbance would warrant a finding of low probability for encountering buried archaeological sites.

Based on the absence of significant historical resources/unique archaeological resources within the APE, archaeological clearance is recommended for the project/undertaking as presently proposed.



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## **ATTACHMENTS**

APE Map.

Records Search from NWIC File No. 21-1261, dated February 15, 2022.

Information request letter to the Native American Heritage Commission (NAHC).

Response from the NAHC, dated March 17, 2022.

# 1. INTRODUCTION

## Project Background

This report details the results of a cultural resources inventory survey involving creation of a commercial development, involving approximately 8.29-acres of land located immediately adjacent to the north side of State Route 12, approximately 3-miles east of Interstate 80, within the southern portion of Suisun City, Solano County, California.

The proponent proposes to create a Tractor Supply commercial development, which will include grading and land recontouring, construction of a new commercial building and structures, creation of access roads and parking, placement of buried utilities, and general landscaping.

Since the project will involve physical disturbance to ground surface and sub-surface components in conjunction with commercial development, it has the potential to impact cultural resources that may be located within the area of potential effects (APE). In this case, the APE would consist of the circa 8.29-acre land area within which the commercial development work will be undertaken. Evaluation of the project's potential to impact cultural resources must be undertaken in conformity with the Suisun City and Solano County rules and regulations, and in compliance with requirements of the California Environmental Quality Act of 1970, Public Resources Code, Section 21000, et seq. (CEQA), and The California CEQA Environmental Quality Act Guidelines, California Administrative Code, Section 15000 et seq. (Guidelines as amended).

## Regulatory Context

The following section provides a summary of the applicable regulations, policies and guidelines relating to the proper management of cultural resources.

### **The California Register of Historical Resources**

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (Public Resources Code (PRC) Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were developed to be in accordance with previously established criteria developed for listing in the NRHP. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
- (2) Is associated with the lives of persons important in our past
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
- (4) Has yielded, or may be likely to yield, information important in prehistory or history

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)). The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

### **California Environmental Quality Act**

As described further, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) define "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource." It also defines the circumstances when a project would materially impair the significance of a historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.

### **California Health and Safety Code Section 7050.5**

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Section 7050.5b). PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If

the County Coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the California NAHC within 24 hours (Section 7050.5c). The NAHC will notify the Most Likely Descendant. With the permission of the landowner, the Most Likely Descendant may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the Most Likely Descendant by the NAHC. The Most Likely Descendant may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause “a substantial adverse change in the significance of an historical resource” (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a “historical resource” and is presumed to be historically or culturally significant for purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource, even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A “substantial adverse change in the significance of an historical resource” reflecting a significant effect under CEQA means “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following:

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

- (3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA [CEQA Guidelines Section 15064.5(b)(2)].

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any “historical resources,” then evaluates whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource’s historical significance is materially impaired.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information
- (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type
- (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC 21074(c); 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described in the following text, these procedures are detailed in PRC Section 5097.98.

### **Native American Historic Cultural Sites**

State law (PRC Section 5097 et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and established the Native American Heritage Commission (NAHC).

In the event that Native American human remains or related cultural material are encountered, Section 15064.5(e) of the CEQA Guidelines (as incorporated from PRC Section 5097.98) and California Health and Safety Code Section 7050.5 define the subsequent protocol. In the event of the accidental discovery or recognition of any human remains, excavation or other disturbances shall be suspended of the site or any nearby area reasonably suspected to overlie adjacent human remains or related material. Protocol requires that a county-approved coroner be contacted in order to determine if the remains are of Native American origin. Should the coroner determine the remains to be Native American, the coroner must contact the NAHC within 24 hours. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98 (14 CCR 15064.5(e)).

## **Scope of Work**

Compliance with CEQA (and County rules and regulations) requires completion of projects in conformity with the amended (October 1998) Guidelines, including in particular Section 15064.5. Based on these rules, regulations and Guidelines, the following specific tasks were considered an adequate and appropriate Scope of Work for the present archaeological survey:

- Conduct a records search at the Northwest Information Center of the California Historical Resources Information System and consult with the Native American Heritage Commission. The goals of the records search and consultation are to determine (a) the extent and distribution of previous archaeological surveys, (b) the locations of known archaeological sites and any previously recorded archaeological districts, and (c) the relationships between known sites and environmental variables. This step is designed to ensure that, during subsequent field survey work, all significant/eligible cultural resources are discovered, correctly identified, fully documented, and properly interpreted.
- Conduct a pedestrian survey of the APE in order to record and evaluate any previously unidentified cultural resources. Based on map review, a complete coverage, intensive survey was considered appropriate, given the presence of moderate archaeological sensitivity within the property. The purpose of the pedestrian survey is to ensure that any previously identified sites are re-located and evaluated in relation to the present project/undertaking. For any previously undocumented sites discovered, the field survey would include formally recording these resources on State of California DPR-523 Forms.
- Upon completion of the records search and pedestrian survey, prepare a Final Report that identifies project effects and recommends appropriate mitigation measures for sites that might be affected by the undertaking and that are considered significant or potentially significant per CEQA, and/or eligible or potentially eligible for inclusion on the National Register of Historic Places.

The remainder of the present document constitutes the Final Report for this project, detailing the results of the records search, consultation and pedestrian survey and providing recommendations for treatment of significant/eligible archaeological and historic sites. All

field survey work followed guidelines provided by the Office of Historic Preservation (Sacramento) and conforms to accepted professional standards.

## **2. Location, Environmental and Cultural Context**

### **Location**

The project area consists of approximately 8.29-acres of land located immediately adjacent to the north side of State Route 12, approximately 3-miles east of Interstate 80, within the southern portion of Suisun City, Solano County, California. Lands affected are located within a portion of Section 30 of Township 5 North, Range 1 West, as shown on the USGS Fairfield South, California, 7.5' Series quadrangle (see attached *APE Map*).

### **Environment**

Suisun City, within which the present APE is located, is situated at the nexus between the Sacramento Valley and the San Francisco Bay Area. Waters flowing from the mountain ranges and into the Sacramento River, then flow through the San Francisco Bay Area, and ultimately are disbursed into the Pacific Ocean.

Geologically, the Bay Area region has undergone intensive alteration over the past 12,000 years. It was during the Pleistocene that the Pacific shoreline extended approximately 15 miles further west than its present location, with subsequent, catastrophic melting of continent-spanning glaciers responsible for the present sea levels and shore line proximity. Concomitant with increases to sea level was the intrusion of salt water, easterly, which ultimately formed the Suisun Bay and the West Delta. The landscapes created by these climatic conditions ranged from saltmarsh and redwood forests to mixed evergreen woodlands and grasslands.

The project APE is located in within lands that, prior to 1970, were exclusively farmed and ranched, and over the following decades have been converted from a rural to an urban environment. The APE lands are located due north of a freshwater emergent wetland setting known as Suisun Slough, which in turn flows into Suisun Bay to the south. Current vegetation within the APE consists of ruderal grasses and weeds.

Soils consist of Antioch-San Ysidro complex, Antioch-San Ysidro complex (thick surface), and Clear Lake Clay soils associated with terraces, foot slopes, and basin floors. Soil deposition is alluvial. The closest natural source of water consists of McCoy Creek located approximately 0.2-miles east of the APE.

The landform age is modern, dating to within the last 40-50 years based on urban development which surrounds the APE. However, Meyer and Rosenthal (2007) have prepared a geoarchaeological overview of the Bay Area for Caltrans. They place the project area in the Holocene to Historic (11,800 to 150 years). This particular area is characterized by estuarine deposits. These estuarine deposits likely overlay alluvial fan deposits from the

surrounding hills, and the area would likely have been an open valley prior to the Holocene sea level rise. Meyer and Rosenthal (ibid.) ascribe a low potential for encountering buried resources within the project APE.

Elevation within the APE ranges from approximately 9-10 feet above mean sea level, descending from northeast to southwest. The region is characterized by a Mediterranean climate, with cool, rainy winters and warm, dry summers. The average annual temperature for the project area ranges from 40-83°F, with the hottest temperatures occurring in July. The average yearly rainfall totals for the area are approximately 23 inches, with the maximum annual precipitation occurring in January.

The region once supported a variety of flora and fauna taxa which have been subsequently replaced with domesticated plants and a slimmer variety of animals, including marsh birds, ducks, geese, raptors, reptiles, amphibians and small mammals.

In view of the substantial surface water sources throughout this area, prehistoric use and occupation was generally intensive, but the population was not randomly distributed. Clearly, the most intensively occupied land areas were at elevated locations where foothill and freshwater sources interface, as well as along the dry margins of marshlands.

## **Prehistory**

Organizing the archaeological record of the San Francisco Bay Area has typically fallen into one of two systems: The Early-Middle-Late Period nomenclature known as the Central California Taxonomic System, and the Archaic-Emergent temporal structure. Milliken, et al. (2007) established a hybrid system incorporating elements of both earlier systems. However, due to established nomenclature for the North Bay area, with concomitant terms fitting the Delta region as well, the terms Archaic-Emergent are used coequally with the Early, Middle and Late Period terms (ibid.:103).

Within the north bay region, Wickstrom (1986) introduced the concept of concurrent landscape use by both collectors and foragers during the Late Holocene in the Santa Rosa Locality. Data Recovery work undertaken by Jones and Hayes (1989) refined these observations, ultimately revealing a pattern suggesting that Paleo-Indians initially foraged the lacustrine zones of the region. This group was followed by evidence of Lower Archaic and Middle Archaic forager residential camps along marshes and on grasslands, which ultimately yielded to Upper Archaic (post-500BC) people establishing forager residential camps and semi-permanent collector villages. After approximately A.D. 1000, semi-permanent collector villages in oak woodlands and residential camps along marshes characterized the shift noted in the Emergent Period.

Fredrickson (1989) made similar observations, with slightly different date ranges for the Laguna de Santa Rosa area along the west side of the Santa Rosa Plain. This refinement ultimately resulted in Jones and Hayes (1993) recalibrating the period of forager-collector overlap to A.D. 500 to 1,000.



The Paleoindian period (12,000 BP to 6,000 BP) was characterized by small, highly mobile groups occupying broad geographic areas. Artifacts associated with this culture complex include fluted projectile points, indicating possible dart and atlatl technology, and chipped-stone crescentics. Milling stones are conspicuously absent from the assemblages (Moratto 2004:497).

The Archaic period is divided into three sub-periods: the Lower Archaic (8,000 BP to 5,000 BP), the Middle Archaic (5,000 BP to 1,500 BP) and the Upper Archaic (2,500 BP to 1,000 BP). Overall, Archaic occupants continued to practice relatively high geographic mobility, but with an increase in permanent/semi-permanent resource procurement bases. The range of resources increases during this period, as evidenced by the diversity of artifacts, including the addition of milling stone tools and obsidian and chert concave-based projectile points. The Middle Archaic witnesses the introduction of the bowl mortar, further supporting the intensification of acorns as a subsistence resource (Moratto 2004:499). The increase in geographical/resource diversity, along with an expanding population during the Upper Archaic, contributed to an increase in the number of permanent settlements, and additional complexities in the cultural manifestations.

During the Emergent period, the archeological record becomes more complex, as specialized adaptations to locally available resources were developed and populations expanded. Further, interactions with cultures from the Sacramento Valley, the Delta, and the San Francisco Bay regions resulted in numerous cultural changes for the region's inhabitants (Moratto 2004:500). Many sites dated to this time period contain mortars and pestles and/or are associated with bedrock mortars implying the intense exploitation of the acorn. The range of subsistence resources utilized along with regional exchange systems expanded significantly. Archeological evidence of social stratification and craft specialization is indicated by well-made artifacts such as charmstones and beads, often found as mortuary items. Ethnographic lifeways serve as good analogs for this period.

## **Ethnography**

The project area is located within territory which, at the time of Contact with European/American culture (*circa* AD 1850), was claimed by the Patwin (Johnson 1978). The Patwin occupied the southwest Sacramento Valley from the town of Princeton, north of Colusa, south to San Pablo and Suisun bays, and from the lower hills of the eastern North Coast Ranges to the Sacramento River.

The Patwin were Penutian speakers, for whom the basic social unit was the family, although the village may also have functioned as a social, political and economic unit. Villages were usually located near water sources, with major villages inhabited mainly in the winter as it was necessary to go out into the hills and higher elevation zones to establish temporary camps during food gathering seasons (i.e., spring, summer and fall). Villages typically consisted of a scattering of bark houses, numbering from four or five to several dozen in larger villages, each house containing a single family of from three to seven people.

As with all northern California Indian groups, economic life for these Penutian speaking groups revolved around hunting, fishing and the collecting of plant foods. Deer were an important meat source and were hunted by individuals by stalking or snaring, or by groups in community drives. Salmon runs, and other food resources available along the Sacramento River and some of its major tributaries, also contributed significantly to local economies. While much of the fish protein was consumed immediately, a significant percentage, particularly during the fall salmon run, was prepared for storage and consumed during winter months. Acorns represented one of the most important vegetal foods and were particularly abundant within the Oak-Savannah biosystem characterized in the foothill-delta interface.

Relations between Euro-Americans and Native Americans in the northern Sacramento Valley followed the course of interaction documented in most other parts of North America, but with particularly devastating consequences for the Sacramento Valley Indians. John Work's fur trapping expedition through the region in 1832-33 resulted in the introduction of several communicable diseases, the results of which were devastating to Native culture and society (Work 1945; Cook 1955).

**Resource Considerations, Native American Sites.** The discussion of regional prehistory and ethnography (above) provides insight into the *types* of Native American sites that have been documented within the region generally. These include:

- Large village sites located along the margins of streams, particularly at confluences, and at or near other natural surface water sources (springs, marshes and other wetlands) and on naturally elevated ground.
- Surface scatters of lithic artifacts without buried cultural deposits, resulting from short-term occupation and/or specialized economic activities.
- Petroglyphs, often in the form of cupped boulders, at or close to village sites or encampments.
- Bedrock food-processing (milling) stations, including mortar holes and metate slicks, most likely to be present within the western portion of the APE.
- Trails.
- Mortuary sites, often but not exclusively associated with large village complexes.
- Isolated finds of aboriginal artifacts and flakes.

Clearly, it is not expected that all of these site types would be documented during the present pedestrian survey, but rather that these would be the most likely *types* to be encountered based on the results of previous regional research.

## Historic Context

Interior California was initially visited by Anglo-American fur trappers, Russian scientists, and Spanish-Mexican expeditions during the early part of the 19<sup>th</sup> Century. These early explorations were followed by a rapid escalation of European-American activities, which culminated in the massive influx fostered by the discovery of gold at Coloma in 1848.

Early Spanish expeditions arrived from Bay Area missions as early as 1804, penetrating the northwestern San Joaquin Valley (Cook 1976). By the mid-1820s, hundreds of fur trappers were annually traversing the Valley on behalf of the Hudson's Bay Company (Maloney 1945). By the late 1830s and early 1840s, several small permanent European-American settlements had emerged in the Central Valley and adjacent foothill lands, including Ranchos in the interior Coast Range, and of course the settlement at New Helvetia (Sutter's Fort) at the confluence of the Sacramento and American Rivers (Sacramento).

With the discovery of gold in the Sierra Nevada, large numbers of European-Americans, Hispanics, and Chinese arrived in and traveled through the Valley. The Valley's east-side mining communities' demands for hard commodities led quickly to the expansion of ranching and agriculture throughout the Great Central Valley and the interior valleys of the Coast Range. Stable, larger populations arose and permanent communities slowly emerged in the Central Valley, particularly along major transportation corridors.

The present APE is located within Solano County, which is one of California's original counties. The County's first seat of government was established in Benicia, but moved to Fairfield in 1858. Early settlers into the county cultivated fruits and vegetables for local consumption and grains were grown on a larger scale for exportation. Dry farm crops such as wheat and oats, used for cattle fodder, proved profitable in the area despite limited irrigation. Initially, agricultural products were transported via the waterways but with the completion of California Pacific Railroad, connecting directly with the Transcontinental Railroad in 1869, goods were transported by rail (Rawls and Bean 1993).

Fruit and nut crops were particularly successful in the project vicinity and by 1910, Solano-Yolo Land and Water Company proposed dam and irrigation systems to support these crops. However, by 1930, government standards resulted in sales and abandonment of orchards with subsequent fruit workers strikes and riots resulting in the 1934-1935 closure of the peach and cherry shipping industry (RootsWeb 2006). The fruit and nut industry slowly turned around and was aided by the formation of the Solano Irrigation District in 1948. Solano County continued to grow over the years with the addition of Travis Air Force Base, new industrial parks, and a resurgence of fruit processing and packing warehouses.

**Resource Considerations, Historic Resources.** Historic overviews for the region document the presence of a wide range of historic site and feature types and complexes throughout the area generally. These include:

- Historic railroad alignments.
- Two-track historic trails/wagon roads, most of which are now paved over and represent fully contemporary features.
- Water distribution systems, including small and large ditch, canal and channel systems, and levees dating to historic time periods.
- Occupation sites and homesteads with associated features such as refuse disposal features, privy pits, barns, and sheds.
- Commercial undertakings and associated buildings and structures.
- Refuse disposal site(s) associated with historic Hughson.

- Ranch features, including structures, structural remnants, corrals, other feature types.

As with prehistoric sites, it was not expected that all of these would be encountered within the APE. Rather, these sites and features represented the most likely *types* to be encountered during the pedestrian archaeological survey.

### 3. RECORDS SEARCH and SOURCES CONSULTED

Several types of information were considered relevant to evaluating the types of archaeological sites and site distribution that might be encountered within the project area. The information evaluated prior to conducting the pedestrian survey includes data maintained by the Northwest Information Center, and available published and unpublished documents relevant to regional prehistory, ethnography, and early historic developments.

#### Northwest Information Center Records

The official Solano County archaeological records were examined on February 15, 2021 (NWIC File No. 21-1261). This search documented the following existing conditions for a 0.25-mile radius centered on the APE:

- According to the Information Center's records, no cultural resources have been documented within the present APE's boundary. One (1) resource (P-48-000981) has been documented within the 0.25-mile search radius.
- According to the Information Center, all of the present APE has been subjected to previous archaeological investigation as a result of one (1) investigation that involved pedestrian survey. Thirteen (13) "Other" studies (general overviews or studies with no field survey) have been documented within the APE. Ten (10) additional investigations have been conducted within the 0.25-mile search radius. These twenty-four (24) investigations are summarized below.

NWIC #	Date	Author(s)
S-000595	1974	King
S-000848	1976	Fredrickson
S-005093	1977	True
S-005167	1980	Chavez
S-006552	1984	Kenton, Johnson
S-006552a	1976	Unknown
S-007888	1973	Fredrickson
S-009139	1987	Dietz
S-009462	1977	Miller
S-009795	1986	Jackson
S-012752	1976	Holman, Gaumer, Chavez
S-016743	1992	Page
S-017835	1975	Suchey

<b>NWIC #</b>	<b>Date</b>	<b>Author(s)</b>
S-022857	2000	Jensen
S-023166	2000	Pastron, Brown
S-023248	2000	Wood
S-025890	2002	Holson
S-030204	2003	Gillette
S-032596	2006	Milliken, King, Mikkelsen
S-033032	1999	McLean
S-033600	2007	Meyer, Rosenthal
S-049780	2017	Byrd, Whitaker, Mikkelsen, Rosenthal
S-049780a	2016	Polanco
S-050984	2017	Nelson
S-050984a	2017	Polanco

## **Other Sources Consulted**

In addition to examining the archaeological site and survey records of Solano County maintained at the Northwest Information Center, the following sources were also included in the search conducted at the Information Center, or were evaluated separately:

- The National Register of Historic Places (1986, Supplements).
- The California Register of Historical Resources.
- The California Inventory of Historic Resources (State of California 1976).
- The California Historical Landmarks (State of California 1996).
- The California Points of Historical Interest (May 1992 and updates).
- The Historic Property Data File (OHP 2012).
- GLO Plat T5N, R1W (1907).
- Plat of the Rancho Tolenas (1861).
- USGS Carquinez Strait, CA 15' quadrangle (1898).
- USGS Carquinez Strait, CA 15' quadrangle (1901).
- USGS Carquinez Strait, CA 15' quadrangle (1940).
- Punnett Bros. 1914 Atlas.
- Thomas Bros. 1949 Atlas.
- Map of Napa & Solano Counties, Cal. (1914).
- NETR topographic maps (1898, 1901, 1906, 1911, 1926, 1933, 1942, 1943, 1950, 1954, 1959, 1963, 1965, 1967, 1969, 1980, 1985, 1993, 2012, 2015, 2018).
- NETR Aerials (1948, 1968, 1982, 1984, 1993, 2005, 2009, 2010, 2012, 2014, 2016, 2018).
- Existing published and unpublished documents relevant to prehistory, ethnography, and early historic developments in the vicinity. These sources, reviewed below, provided a general environmental and cultural context by means of which to assess likely site types and distribution patterns for the project area.

## **4. CULTURAL RESOURCES SURVEY and CULTURAL INVENTORY**

### **Survey Strategy and Field Work**

All of the APE was subjected to intensive pedestrian survey by means of walking parallel transects spaced at 20-meter intervals.

In searching for cultural resources, the surveyor considered the results of background research and was alert for any unusual contours, soil changes, distinctive vegetation patterns, exotic materials, artifacts, feature or feature remnants and other possible markers of cultural sites.

Fieldwork was undertaken on March 3, 2022 by Principal Investigator, Sean Michael Jensen, M.A. Mr. Jensen is a professional archaeologist, historian and architectural historian, with more than 35 years of experience in archaeology, architectural history and history, who meets the professional requirements of the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (Federal Register, Vol. 48, No. 190), as demonstrated in his listing on the California Historical Resources Information System list of qualified archaeologists, architectural historians and historians. No special problems were encountered and all survey objectives were satisfactorily achieved.

### **General Field Observations**

Fieldwork identified the following general conditions within the project area. All of the present APE has been impacted by past livestock pasture, and subsequent continuous and ongoing discing and ripping. As well, contemporary residential and commercial developments surround the APE, while State Route 12 runs east-west adjacent to the APE's southern boundary (see photo, right). All of these various activities have contributed to substantial disturbance of both the surface and subsurface soils within the APE, and consequently, reduce the probability of discovering intact subsurface cultural materials which may have once been present within the APE.



Examination of the USGS quadrangles, NETR topographic maps and historic aerials, confirmed that no buildings or structures have ever been documented within the APE.

## **Prehistoric Resources**

No evidence of prehistoric activity or occupation was observed during the present pedestrian survey. The absence of such resources may be explained, at least in part, by the historic through contemporary disturbances to the entire APE. Secondly, the absence of such resources may be partially explained by the more suitable habitation settings which can be found a short distance southeast of the present APE.

## **Historic Resources**

No historic-era sites were observed within the present APE. The absence of such resources is best explained by the degree of disturbance to which all of the APE has been subjected.

# **5. ELIGIBILITY RECOMMENDATIONS**

Sites identified within the project area were to be evaluated for significance in relation to CEQA significance criteria. Historical resources per CEQA are defined as buildings, sites, structures, objects, or districts, each of which may have historical, architectural, archaeological, cultural, or scientific significance. CEQA requires that, if a project results in an effect that may cause a substantial adverse change in the significance of a historical resource, alternative plans or mitigation measures must be considered; however, only significant historical resources need to be addressed. Therefore, before developing mitigation measures, the significance of cultural resources must be determined in relation to criteria presented in PRC 15064.5, which defines a historically significant resource (one eligible for listing in the California Register of Historical Resources, per PRC SS5024.1) as an archaeological site which possess one or more of the following attributes or qualities:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage
2. Is associated with the lives of persons important in our past
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values
4. Has yielded, or may be likely to yield, information important in prehistory or history

In addition, CEQA further distinguishes between archaeological sites that meet the definition of a significant historical resource as described above (for the purpose of determining effects), and "unique archaeological resources." An archaeological resource is considered "unique" (Section 21083.2(g)) when the resource not merely adds to the current body of knowledge, but when there is a high probability that the resource also:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

## **6. PROJECT EFFECTS**

A project may have a significant impact or adverse effect on significant historical resources/unique archaeological resources if the project will or could result in the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance or values of the historic resource would be materially impaired. Actions that would materially impair a cultural resource are actions that would alter or diminish those attributes of a site that qualify the site for inclusion in the California Register of Historical Resources.

Based on the specific findings detailed above under *Cultural Resources Survey and Cultural Inventory*, no significant historical resources/unique archaeological resources are present within the project area and no significant historical resources/unique archaeological resources will be affected by the undertaking, as presently proposed.

## **7. NATIVE AMERICAN CONSULTATION**

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on February 5, 2022. The NAHC responded on March 17, 2022, indicating that a search of their Sacred Lands File was negative.

## **8. PROJECT SUMMARY**

This report details the results of a cultural resources inventory survey involving creation of a commercial development, involving approximately 8.29-acres of land located immediately adjacent to the north side of State Route 12, approximately 3-miles east of Interstate 80, within the southern portion of Suisun City, Solano County, California.

The proponent proposes to create a Tractor Supply commercial development, which will include grading and land recontouring, construction of a new commercial building and structures, creation of access roads and parking, placement of buried utilities, and general landscaping.



Existing records at the Northwest Information Center document that all of the present APE had been subjected to previous archaeological investigation, and that no cultural resources have been documented within the APE. As well, the present effort included an intensive-level pedestrian survey. No prehistoric or historic-era cultural resources were identified during the pedestrian survey.

Consultation was undertaken with the Native American Heritage Commission (NAHC) re. sacred land listings for the property. An information request letter was delivered to the NAHC on February 5, 2022. The NAHC responded on March 17, 2022, indicating that a search of their Sacred Lands File was negative.

The probability of encountering buried archaeological sites within the APE is low. This conclusion is derived in part from the observed soil matrices which have been subjected to a high degree of disturbance associated with past impacts to the subject property. Evidence of ground disturbance assisted in determining whether or not subsurface resources were present within the APE. Overall, the soil types present and contemporary disturbance would warrant a finding of low probability for encountering buried archaeological sites.

Based on the absence of significant historical resources/unique archaeological resources within the APE, archaeological clearance is recommended for the project/undertaking as presently proposed, although the following general provisions are considered appropriate:

1. **Consultation in the event of inadvertent discovery of human remains:** In the event that human remains are inadvertently encountered during any project-associated ground-disturbing activity or at any time subsequently, State law shall be followed, which includes but is not limited to immediately contacting the County Coroner's office upon any discovery of human remains.
2. **Consultation in the event of inadvertent discovery of cultural material:** The present evaluation and recommendations are based on the findings of an inventory-level surface survey only. There is always the possibility that important unidentified cultural materials could be encountered on or below the surface during the course of future construction activities. This possibility is particularly relevant considering the constraints generally to archaeological field survey, and particularly where past ground disturbance activities (e.g., flooding, discing, adjacent road, commercial and residential development, utilities, etc.) have partially obscured historic ground surface visibility, as in the present case. In the event of an inadvertent discovery of previously unidentified cultural material, archaeological consultation should be sought immediately.

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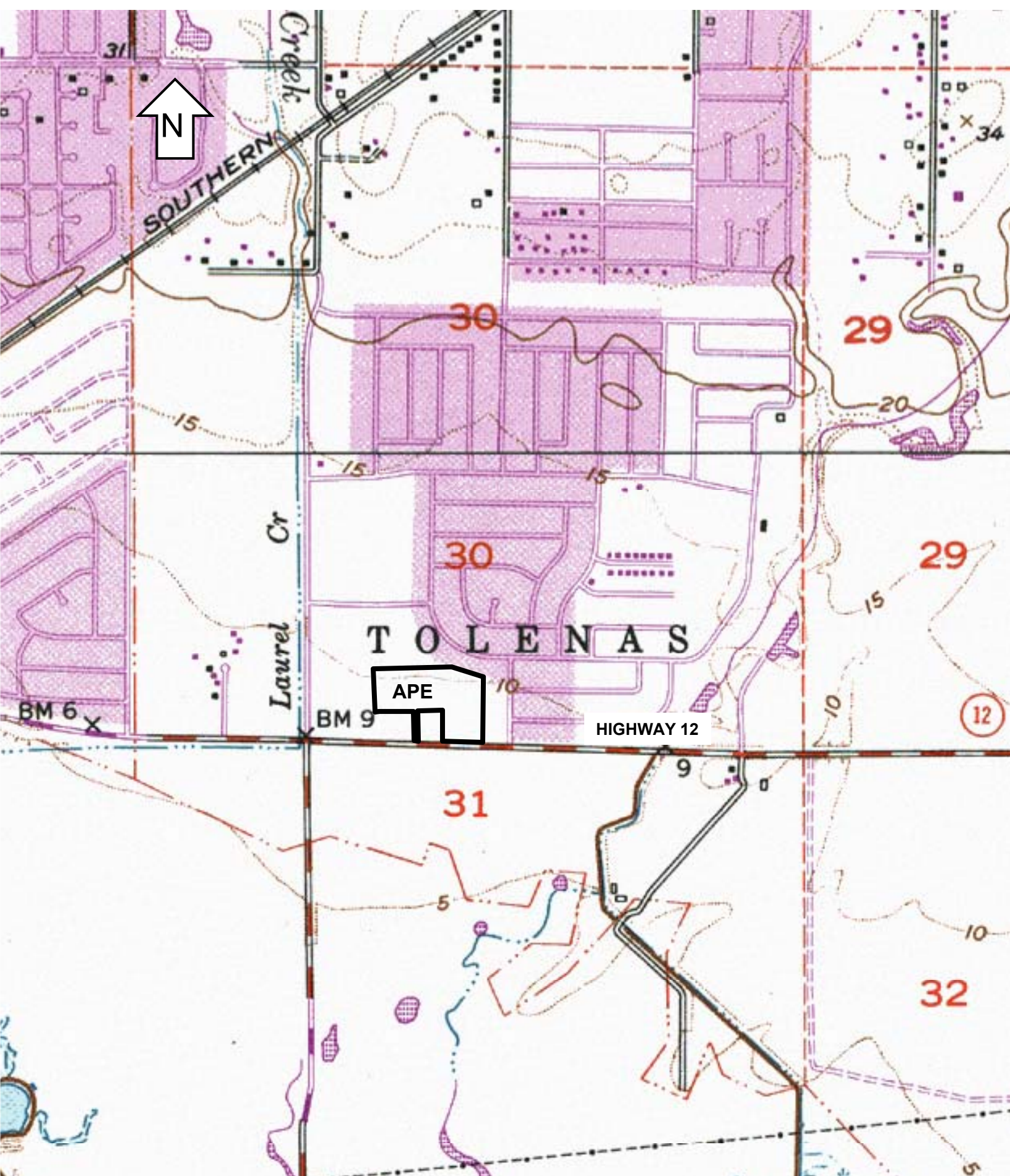


## **CULTURAL RESOURCES INVENTORY SURVEY**

**Suisun City Tractor Supply Development Project  
circa 8.29-Acres  
Suisun City, Solano County, California**

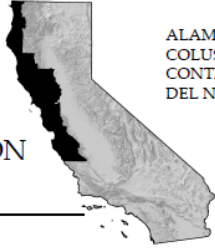
### **ATTACHMENTS**

- APE Map
- Records Search from Northwest Information Center (NWIC)
- Information request letter to the Native American Heritage Commission (NAHC)
- Response from the NAHC.



APE Map: TCS Suisun City, an 8.29-acre project site located in Section 30, Township 5 N, Range 1 W Fairfield South 7.5 minute USGS Quadrangle. 38.24469N, -122.016638W. Solono County APNs 0173-390-160 and 0173-390-180.

CALIFORNIA  
HISTORICAL  
RESOURCES  
INFORMATION  
SYSTEM



ALAMEDA  
COLUSA  
CONTRA COSTA  
DEL NORTE

HUMBOLDT  
LAKE  
MARIN  
MENDOCINO  
MONTEREY  
NAPA  
SAN BENITO

SAN FRANCISCO  
SAN MATEO  
SANTA CLARA  
SANTA CRUZ  
SOLANO  
SONOMA  
YOLO

**Northwest Information Center**  
Sonoma State University  
1400 Valley House Drive, Suite 210  
Rohnert Park, California 94928-3609  
Tel: 707.588.8455  
nwwic@sonoma.edu  
http://nwwic.sonoma.edu

2/15/2022

NWIC File No.: 21-1261

Sean Jensen  
Genesis Society  
123 E. Swift Creek Way  
Kalispell, MT 59901

Re: Suisun City Tractor Supply

The Northwest Information Center received your record search request for the project area referenced above, located on the Fairfield South USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a one-quarter mile radius:

Resources within project area:	None
Resources within 1/4-mile radius:	P-48-000981
Reports within project area:	S-12752; Other Reports S-00595, S-00848, S-07888, S-09462, S-09795, S-17835, S-30204, S-32596, S-33032, S-33600, S-49780, S-50984
Reports within 1/4-mile radius:	S-05093, S-05167, S-06552, S-09139, S-16743, S-22857, S-23166, S-23248, S-25890

**Resource Database Printout (list):**

**Resource Database Printout (details):**

**Resource Digital Database Records:**

**Report Database Printout (list):**

**Report Database Printout (details):**

**Report Digital Database Records:**

**Resource Record Copies:**

**Report Copies:**

**OHP Built Environment Resources Directory:**

**Archaeological Determinations of Eligibility:**

**CA Inventory of Historic Resources (1976):**

**Caltrans Bridge Survey:**

**Ethnographic Information:**

**Historical Literature:**

**Historical Maps:**

**Local Inventories:**

**GLO and/or Rancho Plat Maps:**

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**Shipwreck Inventory:**

☐ enclosed   ☐ not requested   ☒ nothing listed

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Jessika Akmenkalns, Ph.D.  
Researcher

# GENESIS SOCIETY

*a Corporation Sole*

*Historic Preservation Services*

February 5, 2022

## **Native American Heritage Commission**

1550 Harbor Boulevard,  
West Sacramento, California 95691

***Subject: Suisun City Tractor Supply Development Project, 8.29-acres, Solano County, California.***

Dear Commission:

We have been requested to conduct an archaeological survey, for the above-cited project, and are requesting any information you may have concerning archaeological sites or traditional use areas for this area. Any information you might supply will be used to supplement the archaeological and historical study being prepared for this project.

Project Name: Suisun City Tractor Supply Development Project  
County: Solano  
Map: USGS Fairfield South, 7.5'  
Location: Portion of T5N, R1W, Section 30

Thanks in advance for your assistance.

Regards,

*Sean Michael Jensen*

**Sean Michael Jensen, Administrator**

(530) 680-6170

**California**

2398 Azalea Street  
Kingsburg, CA 93631

**Montana**

123 E Swift Creek Way  
Kalispell, MT 59901

seanjensen@comcast.net





## NATIVE AMERICAN HERITAGE COMMISSION

March 17, 2022

Sean Michael Jensen  
Genesis Society

Via Email to: [seanjensen@comcast.net](mailto:seanjensen@comcast.net)

CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

PARLIAMENTARIAN  
**Russell Attebery**  
Karuk

SECRETARY  
**Sara Dutschke**  
Miwok

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Isaac Bojorquez**  
Ohlone-Costanoan

COMMISSIONER  
**Buffy McQuillen**  
Yokayo Pomo, Yuki,  
Nomlaki

COMMISSIONER  
**Wayne Nelson**  
Luiseño

COMMISSIONER  
**Stanley Rodriguez**  
Kumeyaay

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

### Re: Suisun City Tractor Supply Development Project, Solano County

Dear Mr. Jensen:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: [Pricilla.Torres-Fuentes@nahc.ca.gov](mailto:Pricilla.Torres-Fuentes@nahc.ca.gov).

Sincerely,

*Pricilla Torres-Fuentes*

Pricilla Torres-Fuentes  
Cultural Resources Analyst

Attachment

**Native American Heritage Commission  
Native American Contact List  
Solano County  
3/17/2022**

***Cachil Dehe Band of Wintun  
Indians of the Colusa Indian  
Community***

Clifford Mota, Tribal Preservation  
Liaison  
3730 Highway 45 Wintun  
Colusa, CA, 95932  
Phone: (530) 458 - 8231  
cmota@colusa-nsn.gov

***Yocha Dehe Wintun Nation***

Laverne Bill, Director of Cultural  
Resources  
P.O. Box 18 Patwin  
Brooks, CA, 95606  
Phone: (530) 796 - 3400  
thpo@yochadehe-nsn.gov

***Cachil Dehe Band of Wintun  
Indians of the Colusa Indian  
Community***

Daniel Gomez, Chairman  
3730 Highway 45 Wintun  
Colusa, CA, 95932  
Phone: (530) 458 - 8231  
dgomez@colusa-nsn.gov

***Cortina Rancheria - Kletsel  
Dehe Band of Wintun Indians***

Charlie Wright, Chairperson  
P.O. Box 1630 Wintun  
Williams, CA, 95987  
Phone: (530) 473 - 3274  
Fax: (530) 473-3301

***Guidiville Indian Rancheria***

Donald Duncan, Chairperson  
P.O. Box 339 Pomo  
Talmage, CA, 95481  
Phone: (707) 462 - 3682  
Fax: (707) 462-9183  
admin@guidiville.net

***Yocha Dehe Wintun Nation***

Anthony Roberts, Chairperson  
P.O. Box 18 Patwin  
Brooks, CA, 95606  
Phone: (530) 796 - 3400  
thpo@yochadehe-nsn.gov

***Yocha Dehe Wintun Nation***

Yvonne Perkins, THPO, Cultural  
Resources Chairman  
P.O. Box 18 Patwin  
Brooks, CA, 95606  
Phone: (530) 796 - 3400  
thpo@yochadehe-nsn.gov

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Suisun City Tractor Supply Development Project, Solano County.

## Appendix D Energy Assumptions and Calculations



## Tractor Supply Construction Assumptions

### Project Construction and Operations - Tractor Supply

#### Construction Phases

Phase Name	Start Date	End Date	Num Days Week	Num Days
Site Preparation	7/1/2022	7/7/2022	5	5
Grading	7/8/2022	7/19/2022	5	8
Building Construction	7/20/2022	1/9/2023	5	124
Paving	1/10/2023	2/2/2023	5	18
Architectural Coating	2/3/2023	2/28/2023	5	18

#### Off Road Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Rubber Tired Dozers	3	8	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8	97	0.37
Grading	Excavators	1	8	158	0.38
Grading	Graders	1	8	187	0.41
Grading	Rubber Tired Dozers	1	8	247	0.40
Grading	Tractors/Loaders/Backhoes	3	8	97	0.37
Building Construction	Cranes	1	7	231	0.29
Building Construction	Forklifts	3	8	89	0.20
Building Construction	Generator Sets	1	8	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7	97	0.37
Building Construction	Welders	1	8	46	0.45
Paving	Cement and Mortar Mixers	2	6	9	0.56
Paving	Pavers	1	8	130	0.42
Paving	Paving Equipment	2	6	132	0.36
Paving	Rollers	1	6	97	0.38
Paving	Tractors/Loaders/Backhoes	1	8	97	0.37
Architectural Coating	Air Compressor	1	6	78	0.48

\*load factors determined based on CalEEMod User's Guide, Appendix G.

#### Trips and VMT

Phase Name	Daily Worker Trip Number	Daily Vendor Trip Number	TOTAL Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Site Preparation	18	0	0	10.8	7.3	20
Grading	15	0	0	10.8	7.3	20
Building Construction	56	23	0	10.8	7.3	20
Paving	20	0	0	10.8	7.3	20
Architectural Coating	11	0	0	10.8	7.3	20

## **Tractor Supply—Energy Consumption Summary**

### **Summary of Energy Use During Construction**

(Annually)

Construction vehicle fuel	5,602 gallons (gasoline, diesel)
Construction equipment fuel	6,990 gallons (diesel)
Operational Vehicle Fuel	11,199 gallons (gasoline, diesel)

## Construction Vehicle Fuel Calculations (Page 1 of 2)

California Air Resource Board (CARB). 2021. EMFAC2017 Web Database. Website: <https://arb.ca.gov/emfac/emissions-inventory/9f3e59f57f9f95bb7a803e97257fda0e514ac11a>

VMT = Vehicle Miles Traveled

FE = Fuel Economy

on, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Given								Calculations		
Region	Calendar Year	Vehicle Class	Model Year	Speed	Fuel	Population	VMT (mi/day)	Fuel Consumption	FE	VMT*FE
								(1000 gallons/day)	(mi/gallon)	
Solano	2023	HHDT	Aggregate	Aggregate	Gasoline	0.81719723	15036.526	4.443085844	3.38425289	50887.41
Solano	2023	HHDT	Aggregate	Aggregate	Diesel	4491.34281	212946476	35749.77342	5.95658254	1.27E+09
Solano	2023	LDA	Aggregate	Aggregate	Gasoline	158865.599	2.287E+09	78891.39441	28.9944683	6.63E+10
Solano	2023	LDA	Aggregate	Aggregate	Diesel	558.162792	6428847	153.7940068	41.8016746	2.69E+08
Solano	2023	LDT1	Aggregate	Aggregate	Gasoline	15396.7038	181799999	7472.594807	24.3288982	4.42E+09
Solano	2023	LDT1	Aggregate	Aggregate	Diesel	5.784692	19685.85	0.808362345	24.3527553	479404.7
Solano	2023	LDT2	Aggregate	Aggregate	Gasoline	63879.7438	886682268	37999.37621	23.3341269	2.07E+10
Solano	2023	LDT2	Aggregate	Aggregate	Diesel	207.077673	3068180.3	97.37348242	31.5094031	96676530
Solano	2023	LHDT1	Aggregate	Aggregate	Gasoline	6149.04767	76343289	8179.594855	9.33338275	7.13E+08
Solano	2023	LHDT1	Aggregate	Aggregate	Diesel	5316.92292	65127165	4120.280287	15.8064889	1.03E+09
Solano	2023	LHDT2	Aggregate	Aggregate	Gasoline	746.408915	9352668	1109.274663	8.43133656	78855492
Solano	2023	LHDT2	Aggregate	Aggregate	Diesel	1985.74256	25827258	2000.141236	12.9127173	3.34E+08
Solano	2023	MDV	Aggregate	Aggregate	Gasoline	48563.057	619776733	32496.7529	19.0719588	1.18E+10
Solano	2023	MDV	Aggregate	Aggregate	Diesel	734.244216	10412294	438.2757219	23.7574061	2.47E+08
Solano	2023	MHDT	Aggregate	Aggregate	Gasoline	379.872635	7584099.8	1620.427974	4.68030665	35495913
Solano	2023	MHDT	Aggregate	Aggregate	Diesel	2666.19906	35185968	4177.412937	8.42290883	2.96E+08
Worker										
Sum of VMT*FE (Column BI)									1.04E+11	
Total VMT									4E+09	
Weighted Average Fuel Economy									25.99581	
Vendor										
Sum of VMT*FE (Column BI)									3.75E+09	
Total VMT									4.32E+08	
Weighted Average Fuel Economy									8.683704	
Haul										
Sum of VMT*FE (Column BI)									1.27E+09	
Total VMT									2.13E+08	
Weighted Average Fuel Economy									5.956401	

# **Construction Vehicle Fuel Calculations (Page 2 of 2)**

## **Construction Schedule**

Source: CalEEMod

CalEEMod Run	Phase Name	Start Date	End Date		Num Days
Site Preparation		7/1/2022	7/7/2022	5	5
Grading		7/8/2022	7/19/2022	5	8
Building Construction		7/20/2022	1/9/2023	5	124
Paving		1/10/2023	2/2/2023	5	18
Architectural Coating		2/3/2023	2/28/2023	5	18

## **Construction Trips and VMT**

Phase Name	Trips per Day		Total Trips	Construction Trip Length in Miles			Number of Days per Phase	Trips per Phase			VMT per Phase			Fuel Consumption (gallons)		
	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length		Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trips	Vendor Trips	Hauling Trips	Worker Trips	Vendor Trips	Hauling Trips
Site Preparation	18	0	0	11	7	20	5	90	0	0	972	0	0	37.39	0.00	0.00
Grading	15	0	0	11	7	20	8	120	0	0	1,296	0	0	49.85	0.00	0.00
Building Constructio	56	23	0	11	7	20	124	6,944	2,852	0	74,995	20,820	0	2,884.90	2,397.55	0.00
Paving	20	0	0	11	7	20	18	360	0	0	3,888	0	0	149.56	0.00	0.00
Architectural Coating	11	0	0	11	7	20	18	198	0	0	2,138	0	0	82.26	0.00	0.00
<b>Subtotal</b>											83,290	20,820	0	3,204	2,398	0

## Construction Equipment Fuel Calculation (Page 1 of 2)

Source: CalEEMod

### Construction Schedule

Construction Area	Phase Type	Start Date	End Date	Num Days Week	Num Days
	Site Preparation	7/1/2022	7/7/2022	5	5
	Grading	7/8/2022	7/19/2022	5	8
	Building Construction	7/20/2022	1/9/2023	5	124
	Paving	1/10/2023	2/2/2023	5	18
	Architectural Coating	2/3/2023	2/28/2023	5	18

Phase Name	Offroad Equipment Type	Usage Hours	Number	HP	Number of Days	Load Factor	HP Hours	Fuel (gallons/HP-hour)	Diesel Fuel Usage
Site Preparation	Rubber Tired Dozers	8	3	247	5	0.40	11856.00	0.020	242.84
Site Preparation	Tractors/Loaders/Backhoes	8	4	97	5	0.37	5742.40	0.019	109.84
Grading	Excavators	8	1	158	8	0.38	3842.56	0.020	75.93
Grading	Graders	8	1	187	8	0.41	4906.88	0.021	104.14
Grading	Rubber Tired Dozers	8	1	247	8	0.40	6323.20	0.020	129.51
Grading	Tractors/Loaders/Backhoes	8	3	97	8	0.37	6890.88	0.019	131.80
Building Construction	Cranes	7	1	231	124	0.29	58147.32	0.015	865.76
Building Construction	Forklifts	8	3	89	124	0.20	52972.80	0.021	1,102.59
Building Construction	Generator Sets	8	1	84	124	0.74	61662.72	0.022	1,325.79
Building Construction	Tractors/Loaders/Backhoes	7	3	97	124	0.37	93457.56	0.019	1,787.58
Building Construction	Welders	8	1	46	124	0.45	20534.40	0.024	492.81
Paving	Cement and Mortar Mixers	6	2	9	18	0.56	1088.64	0.000	0.00
Paving	Pavers	8	1	130	18	0.42	7862.40	0.022	169.26
Paving	Paving Equipment	6	2	132	18	0.36	10264.32	0.018	188.82
Paving	Rollers	6	1	97	18	0.38	3980.88	0.019	77.28
Paving	Tractors/Loaders/Backhoes	8	1	97	18	0.37	5168.16	0.019	98.85
Architectural Coating	Air Compressor	6	1	78	18	0.48	4043.52	0.022	86.94
TOTAL									6,989.75

Total Construction Equipment Fuel Consumption (gallons)

#### Notes:

Equipment assumptions are provided in the Roadway Construction output files.

Source of usage estimates: California Air Resource Board (CARB). 2022. OFFROAD2021 Emissions Inventory

Website: <https://arb.ca.gov/emfac/emissions-inventory/1858de04a6d6b82e26fb52258ce3499ee8e4f21b>

all emissions calculated conservatively using 2023 emission factors.

## **Construction Equipment Fuel Calculation (Page 2 of 2)**

Model Output: OFFROAD2021 (v1.0.3) Emissions Inventory

Region Type: County

Region: Solano

Calendar Year: 2023

Scenario: All Adopted Rules - Exhaust

Vehicle Classification: OFFROAD2021 Equipment Types

Units: tons/day for Emissions, gallons/year for Fuel, hours/year for Activity, Horsepower-hours/year for Horsepower-hours

Region	Calendar Year	Vehicle Category	Model Year	Horsepower r Bin	Fuel	Fuel Consumption	Horsepower_Hou rs_hhpy	Fuel (gallons/HP- hour)
Solano	2023	Construction and Mining - Cranes	Aggregate	175	Diesel	16434.51897	1101466.113	0.014920585
Solano	2023	Construction and Mining - Cranes	Aggregate	300	Diesel	28187.32686	1893149.655	0.014889117
Solano	2023	Construction and Mining - Excavators	Aggregate	100	Diesel	39466.32675	2007288.664	0.01966151
Solano	2023	Construction and Mining - Excavators	Aggregate	175	Diesel	84231.63755	4262421.171	0.019761453
Solano	2023	Construction and Mining - Graders	Aggregate	100	Diesel	4760.83916	228179.5192	0.020864446
Solano	2023	Construction and Mining - Graders	Aggregate	175	Diesel	51195.6554	2412197.913	0.021223655
Solano	2023	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	15	Diesel	10.29113358	0	0
Solano	2023	Construction and Mining - Misc - Cement And Mortar Mixers	Aggregate	25	Diesel	2.016728741	0	0
Solano	2023	Construction and Mining - Other	Aggregate	100	Diesel	20112.98823	935459.7304	0.021500646
Solano	2023	Construction and Mining - Other	Aggregate	175	Diesel	11739.70949	548550.335	0.021401335
Solano	2023	Construction and Mining - Other	Aggregate	25	Diesel	0	0	0
Solano	2023	Construction and Mining - Other	Aggregate	300	Diesel	15421.1177	716497.1115	0.021522931
Solano	2023	Construction and Mining - Other	Aggregate	50	Diesel	6894.60079	287285.5126	0.023999125
Solano	2023	Construction and Mining - Other	Aggregate	600	Diesel	60179.2068	2801427.466	0.021481622
Solano	2023	Construction and Mining - Other	Aggregate	75	Diesel	1461.754788	69135.65958	0.021143283
Solano	2023	Construction and Mining - Pavers	Aggregate	100	Diesel	7028.255281	328420.2721	0.021400187
Solano	2023	Construction and Mining - Pavers	Aggregate	175	Diesel	11132.17132	517098.1645	0.021528159
Solano	2023	Construction and Mining - Paving Equipment	Aggregate	100	Diesel	4369.22366	237506.7601	0.018396208
Solano	2023	Construction and Mining - Paving Equipment	Aggregate	175	Diesel	4710.65106	257070.4475	0.018324359
Solano	2023	Construction and Mining - Rollers	Aggregate	100	Diesel	26866.67236	1384042.895	0.019411734
Solano	2023	Construction and Mining - Rubber Tired Dozers	Aggregate	175	Diesel	3333.022975	162930.1516	0.02045676
Solano	2023	Construction and Mining - Rubber Tired Dozers	Aggregate	300	Diesel	3753.336048	183246.0851	0.02048249
Solano	2023	Construction and Mining - Tractors/Loaders/Backhoes	Aggregate	100	Diesel	413198.2942	21602695.39	0.019127164
Solano	2023	Construction and Mining - Rollers	Aggregate	100	Diesel	26866.67236	1384042.895	0.019411734
Solano	2023	Construction and Mining - Rough Terrain Forklifts	Aggregate	100	Diesel	69172.03563	3323295.104	0.020814292

California Air Resource Board (CARB). 2021. EMFAC2021Web Database. Website: <https://arb.ca.gov/emfac/emissions-inventory/0a50ed20a0489e6e0c536dc7f303dcf8eeef4948>. Accessed July 21, 2021.

VMT = Vehicle Miles Traveled

FE = Fuel Economy

Calendar Year: 2023

Season: Annual

Vehicle Classification: EMFAC2007 Categories

Units: miles/year for CVMT and EVMT, trips/year for Trips, kWh/year for Energy Consumption, tons/year for Emissions, 1000 gallons/year for Fuel Consumption

Given							Calculations			
Region	Calendar Year	Vehicle Class	Model Year	Speed	Fuel	Population	VMT	Fuel Consumption	FE	VMT*FE
Solano	2023	LDA	Aggregate	Aggregate	Gasoline	158865.5986	2287414034	78891.39441	28.99446829	6632353674
Solano	2023	LDA	Aggregate	Aggregate	Diesel	558.1627922	6428847.027	153.7940068	41.80167459	268736571.4
Sum of VMT*FE									66591090246	
Total VMT									2293842881	
Weighted Average Fuel Economy									29.03036246	
Solano	2023	LDT1	Aggregate	Aggregate	Gasoline	15396.70378	181799998.6	7472.594807	24.32889824	4422993666
Solano	2023	LDT1	Aggregate	Aggregate	Diesel	5.784692003	19685.85036	0.808362345	24.35275525	479404.6957
Solano	2023	LDT2	Aggregate	Aggregate	Gasoline	63879.74383	886682268.2	37999.37621	23.33412694	20689956599
Solano	2023	LDT2	Aggregate	Aggregate	Diesel	207.077673	3068180.31	97.37348242	31.50940312	96676530.27
Solano	2023	MDV	Aggregate	Aggregate	Gasoline	48563.05703	619776732.7	32496.7529	19.07195881	11820356316
Solano	2023	MDV	Aggregate	Aggregate	Diesel	734.2442158	10412294.32	438.2757219	23.75740613	247369105
Sum of VMT*FE									37277831621	
Total VMT									1701759160	
Weighted Average Fuel Economy									21.90546847	
Solano	2023	LHDT1	Aggregate	Aggregate	Gasoline	6149.047669	76343289.49	8179.594855	9.333382745	712541140.8
Solano	2023	LHDT1	Aggregate	Aggregate	Diesel	5316.922919	65127164.78	4120.280287	15.80648894	1029431810
Solano	2023	LHDT2	Aggregate	Aggregate	Gasoline	746.4089153	9352668.015	1109.274663	8.431336557	7885491.74
Solano	2023	LHDT2	Aggregate	Aggregate	Diesel	1985.742562	25827258.34	2000.141236	12.9127173	333500085.6
Solano	2023	MHDT	Aggregate	Aggregate	Gasoline	379.8726346	7584099.819	1620.427974	4.680306649	35495912.81
Solano	2023	MHDT	Aggregate	Aggregate	Diesel	2666.199061	35185968.3	4177.412937	8.422908828	296368203
Solano	2023	HHDT	Aggregate	Aggregate	Gasoline	0.817197225	15036.52609	4.443085844	3.384252886	50887.40683
Solano	2023	HHDT	Aggregate	Aggregate	Diesel	4491.342808	212946476.1	35749.77342	5.956582539	1268433261
Sum of VMT*FE									3754676792	
Total VMT									432381961.4	
Weighted Average Fuel Economy									8.683703595	
Solano	2023	MCY	Aggregate	Aggregate	Gasoline	9589.182397	18953776.52	470.8596697	40.25355693	762956922
Weighted Average Fuel Economy									40.25355693	
Solano	2023	MH	Aggregate	Aggregate	Gasoline	1284.327061	3919578.648	887.799864	4.414934947	17304684.75
Solano	2023	MH	Aggregate	Aggregate	Diesel	469.2213657	1508167.283	160.5467188	9.393946476	14167642.74
Solano	2023	OBUS	Aggregate	Aggregate	Gasoline	179.1659132	3813144.25	803.6809899	4.744599284	18091841.48
Solano	2023	OBUS	Aggregate	Aggregate	Diesel	134.5833164	3487115.236	551.0936326	6.327627521	22065166.34
Solano	2023	SBUS	Aggregate	Aggregate	Gasoline	30.98541172	591890.114	60.00228639	9.864459333	5838675.96
Solano	2023	SBUS	Aggregate	Aggregate	Diesel	314.318597	2300272.393	285.4170767	8.059336953	18538670.3
Solano	2023	UBUS	Aggregate	Aggregate	Gasoline	38.61505158	606549.3691	87.85395167	6.90406473	4187656.107
Solano	2023	UBUS	Aggregate	Aggregate	Diesel	67.48285431	2351735.012	260.1840038	9.038737887	21256716.36
Sum of VMT*FE									121451054	
Total VMT									18578452.31	
Weighted Average Fuel Economy									6.537199764	

Operational Fuel Calculation—Project-generated Operational Trips (Page 2 of 2)

Total Operational VMT

Tractor Supply

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hardware/Paint Store	180.26	180.26	180.26	262,240	262,240
Parking Lot	0.00	0.00	0.00		
Total	180.26	180.26	180.26	262,240	262,240

Annual VMT  
(miles)  
Total VMT 262,240

By Vehicle Type (Average Fleet Mix for the 2026 Operation Year for All Project Components)

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.552821	0.058334	0.189005	0.121481	0.023262	0.005577	0.010166	0.007476	0.001000	0.000579	0.026545	0.000826	0.002920

	Fraction of 1	Percent of Vehicle Trips	Annual VMT	Daily VMT	Average Fuel Economy (miles/gallon)	Total Daily Fuel Consumption (gallons)	Total Annual Fuel Consumption (gallons)
Passenger Cars (LDA)	0.5528	55.3	144,972	397	29.03	13.7	4,994
Light Trucks and Medium Vehicles (	0.3688	36.9	96,719	265	21.91	12.1	4,415
Light-Heavy to Heavy-Heavy Diesel	0.0465	4.6	12,189	33	8.68	3.8	1,404
Motorcycles	0.0265	2.7	6,961	19	40.25	0.5	173
Other	0.0053	0.5	1,396	4	6.54	0.6	214
Total	—	99.9992	262,240	718			11,199



## Appendix E Geotechnical Investigation Report

# GEOTECHNICAL REPORT

## Tractor Supply Co. Suisun City, California APN 0173-390-170 & -180

March, 21 2022  
Project No. 5028



Prepared for  
Hilbers, Inc.  
by  
Gularte & Associates, Inc.

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*Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)*

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## **GEOTECHNICAL REPORT**

*Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)*

*Job Number: 5028*

*March 21, 2022*

### **1 INTRODUCTION**

Hilbers, Inc. has retained Gularte & Associates, Inc. to perform a geotechnical report for the proposed Tractor Supply Company project located on CA Highway 12 in Suisun City, California (APN: 0173-390-170 & -180). To conduct our geotechnical report, we performed the following services:

- Reviewed the site geology and groundwater conditions.
- Performed 4 exploratory soil borings to a maximum depth of approximately 50 feet below ground surface (bgs) to classify the soil and obtain samples for laboratory testing.
- Performed 1 expansion index analysis on a bulk sample to determine the expansion potential of the native soil.
- Performed 6 sieve analyses on disturbed samples obtained during our exploratory borings.
- Performed 6 moisture-density analyses on tube samples obtained from our exploratory borings.
- Performed an R-Value test to aid in asphalt pavement design.
- Performed engineering analyses and used engineering judgment for earthwork and foundation recommendations in this report.
- Prepared this report with our findings, conclusions, and recommendations.

Civil and structural engineering plans were not available at the time of this report. We recommend that we be retained to review the project grading and structural plans at the 50 to 90 percent stage for compliance with our report. Additionally, we recommend that we be retained to observe the over-excavation effort and perform soil compaction testing services for the proposed building pads, pavement areas, and utility trench backfill.

## **GEOTECHNICAL REPORT**

*Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)*

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## **2 LOCATION, DESCRIPTION, AND PHYSICAL SETTINGS**

### **2.1 SITE LOCATION**

Figure 1 shows the vicinity map of the proposed Tractor Supply Company project area located just east of 115 Sunset Avenue in Suisun City, California. The site is bordered by existing residence on the north and east, an existing gas station and convenience store on the west, and CA Highway 12 on the south.

### **2.2 SITE DESCRIPTION AND SITE IMPROVEMENTS**

The approximately 2-acre site is vacant, unimproved land. The site is rectangular in shape with the east-west axis approximately 350 feet in length and the north-south axis approximately 175 feet in length. A project topographic map was not provided at the time of this report. Site topography is relatively flat. The site is covered with green winter grasses.

Proposed improvements consist of a 23,000 SF Tractor Supply Company retail store with associated display and parking areas.

### **2.3 PHYSICAL SETTINGS**

#### **2.3.1 Regional Geology**

The site is located in the western portion of the Great Valley Province. The Great Valley is an asymmetrical synclinal trough with a gently dipping eastern limb and is filled with a thick (up to 40,000 feet thick) sequence of sedimentary units, which are Late Jurassic through Cretaceous in age [between 150 to 65 million years old, (Ma)]. The deepest part of the basin is near the western edge, west of the present axis. The thin eastern valley deposits overlap the metamorphic terrains of the Sierra Nevada foothills that have been intruded by Late Mesozoic granitic plutons. The older units of the Great Valley Province that form the eastern part of the Coast Ranges have become uplifted and deformed by a series of thrust faults underlying the western edge of the basin. Cenozoic sedimentary fill covers most of the California central valley.

#### **2.3.2 Local Geology**

The California Division of Mines and Geology 1981 Geologic Map of the Sacramento Quadrangle was reviewed prior to the March 4, 2022 geotechnical subsurface exploration. This source indicates that surface deposits at the site are composed of older Quaternary alluvial lake, playa, and terrace deposits, which agrees with the observed subsoil. Based on the exploratory borings, very dense sand and very stiff silt of the Tehama Formation underlay the relatively thin surficial Quaternary alluvium at the site.

#### **2.3.3 Faults and Seismicity**

Based on the 2010 Fault Activity Map of California prepared by the California Geological Survey (CGS), the nearest active faults within a 50-mile radius of the

## GEOTECHNICAL REPORT

Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)

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subject property with surface displacements of Holocene age or younger (i.e., younger than 11,700 years before present) are presented in Table 1 below.

Fault Name	Approximate Distance (miles)
Cordelia Fault Zone	8.9 W-SW
Green Valley Fault	10.6 W-SW
West Napa Fault	16.9 W-SW
Concord Fault	17.1 S-SW
Clayton Fault	21.5 S-SE
Rodgers Creek Fault Zone	25.4 W-SW
Hayward Fault Zone	28.8 W-SW
Calaveras Fault	30.1 S-SW
Marsh Creek Fault	31.8 S-SE
Pleasanton Fault	32.8 S-SW
Unnamed Fault SW of Dunnigan Hills Flt	33.0 N
Hunting Creek Fault	38.6 N-NW
Greenville Fault	43.0 S-SE
Alexander-Redwood Hill Fault Zone	44.1 W-NW
Las Positas Fault	44.3 S-SE
Maacama Fault Zone	44.5 W-NW
San Andreas Fault Zone	46.5 W-SW
San Gregorio-Hosgri Fault Zone	47.1 W-SW
Verona Fault	47.1 S-SE
Corral Hollow-Carnegie Fault Zone	47.2 S-SE
Serra Fault Zone	49.8 S-SW
<b>Table 1 – Regional Fault Summary</b>	

The site is not located within a currently established Alquist-Priolo (AP) Earthquake Fault Zone.

According to the 2008 Ground Motion Interpolator prepared by CGS, the earthquake peak ground acceleration that has 2 percent probability of being exceeded in 50 years for the property is 0.728g, and the earthquake peak ground acceleration that has 10 percent probability of being exceeded in 50 years for the property is 0.446g. This is a relatively high level of ground shaking for California.

## **GEOTECHNICAL REPORT**

*Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)*

*Job Number: 5028*

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### **2.3.4 Geologic Hazards**

Risk of lateral spreading from landslides and liquefaction is considered low, as liquefiable soil conditions were not observed during the subsurface exploration. Risk from landsliding is not considered likely, given the relatively flat site topography.

### **2.3.5 Groundwater**

Groundwater was observed at approximately 15 and 8 feet bgs in exploratory borings B-1 and B-2, respectively. Groundwater was not observed in boring B-3. This concurs well with data obtained from the California Department of Water Resources.



## **GEOTECHNICAL REPORT**

Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)

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### **3 FINDINGS AND CONCLUSIONS**

#### **3.1 SUBSURFACE CONDITIONS**

Four exploratory soil borings (B-1 through B-4) were advanced within the proposed building pad and parking area to a maximum depth of 50 feet below ground surface (bgs) to record SPT N-Value, classify the soil profile and obtain samples for geotechnical laboratory analysis. Boring locations are shown in the Site Plan, Figure 2, and boring logs are shown in detail in Appendix A. Each boring was cemented to surface after total depth was reached.

The findings were fairly consistent across the majority of the site. The soil profiles consisted of thin alluvial sediments in the upper 1 to 3 feet bgs that are underlain with predominately medium dense clayey sand and low plasticity sandy clay.

#### **3.2 LABORATORY ANALYSES**

An Expansion Index (EI) analysis was performed to evaluate the expansion potential of the onsite soil. The Expansion Index analysis resulted in an EI of 42 for soil obtained from approximately 2 feet in boring B-1. This indicates a low expansion potential.

Six sieve wash analyses were performed to further classify the native soil observed in our subsurface exploration. The results of these analyses confirmed our field classifications.

Six moisture-density tests were performed on 2.5-inch diameter stainless steel tube samples obtained during the subsurface exploration. The results of these tests are shown in Table 2.

<b>Boring</b>	<b>Depth (feet)</b>	<b>Water Content (%)</b>	<b>Dry Soil Density (pcf)</b>
B-2	2.5	17.3	107.2
B-2	10	18.6	109.0
B-3	2.5	17.7	109.7
B-3	20	16.5	111.8
B-1	30	28.4	94.1
B-1	40	19.1	108.2
B-1	50	23.0	103.1
<b>Table 2 – Moisture-Density Tests on Tube Samples</b>			

#### **3.3 EXISTING FILL**

We did not observe significant existing fill during our subsurface exploration.

## ***GEOTECHNICAL REPORT***

*Tractor Supply Co. – Suisun City, CA (APN: 0173-390-170 & -180)*

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### **3.4 EXCAVATION EFFORT**

Based upon our exploratory borings, conventional grading equipment should be able to excavate the on-site soils with reasonable expectations.

### **3.5 SUITABILITY FOR CONSTRUCTION AND SITE CONCERNS**

From an earthwork, pavement, and foundations viewpoint, the soils at this site are considered suitable for support of the anticipated loads provided our recommendations are followed properly.

The primary concern at the site is the relatively shallow groundwater. Deeper utility excavations may require dewatering to facilitate ease of pipeline installation and worker safety.

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### **4 EARTHWORK RECOMMENDATIONS**

#### **4.1 NATIVE AND IMPORT FILL MATERIAL**

On-site soil is considered suitable to be used as fill material, provided our recommendations are followed properly. Imported fill materials should have a plasticity index less than 12 and a maximum particle size of 3 inches.

#### **4.2 CLEARING AND GRUBBING**

All vegetation will need to be cleared and grubbed and either placed in landscape areas prior to construction or hauled off location.

#### **4.3 FILL COMPACTION/BUILDING PAD PREPARATION**

After clearing and grubbing the site, original grade should be scarified to a depth of 12 inches and recompact to at least 90% relative compaction per ASTM D1557. After original grade has been adequately prepared, fill placement may commence.

Fill should be moisture conditioned to within 0 to +4 percent of optimum water content. Compact soil fills for structural areas such as pavements and building pads to at least 90 percent relative compaction per ASTM D1557.

Compact the upper 6 inches of pavement subgrade and aggregate baserock to at least 95 percent relative compaction per ASTM D1557.

We strongly recommend that you retain our firm to provide observation and testing services during mass grading to test fill placement every 12 to 18 inches and to check that the soil has been compacted adequately during the grading operation.

#### **4.4 WET WEATHER BUILDING PAD CONSTRUCTION CONSIDERATIONS**

Should the proposed construction commence during the rainy season, consider lime or cement treating the upper 15 to 18 inches of the building pad surfaces to reduce the deleterious effects of heavy precipitation.

#### **4.5 TRENCH BACKFILL**

The contractor is responsible for conducting all trenching and shoring in accordance with CALOSHA requirements. Place and compact trench backfill as follows:

- Trench backfill should have a maximum particle size of 2 inches.
- Moisture condition trench backfill to within 0 to +4 percent of optimum water content; moisture condition backfill outside the trench.
- Place fill in loose lifts not exceeding 12 inches for backhoes and 18 inches for large excavators.
- Compact fill to 90 percent relative compaction per ASTM D1557.

## **GEOTECHNICAL REPORT**

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- Jetting of trench backfill is not acceptable except in joint utility trenches where damage to conduits makes mechanical compaction methods impractical.

### **4.6 SLOPES**

Construct final slope gradients to 2:1 (horizontal:vertical) or flatter. Slope faces should be compacted and vegetated to reduce the effects of rutting from rainfall and overland water flow. Construct a keyway at the toe of the fill slope and at least 24 inches deep on the downhill side of the key. The keyway should be a minimum of 10 feet wide and sloped back into the slope at a minimum 5 percent slope. In order to remove loose soil/rock, excavate benches into competent material after engineered fill has been placed in the keyway per our recommendations. Benches should be cut into the existing slope as filling proceeds every 2 to 4 feet vertically and 4 to 8 feet wide into the slope, to remove loose soil/rock. We recommend that buildings have a minimum setback of 5 feet from ascending slopes and 10 feet from descending slopes, or as outlined in the 2019 California Building Code. The setback is measured from the outermost footing line closest to the toe/hinge point of slope. Gularte & Associates, Inc. should be retained to check footing dimensions, and their orientation to nearby slopes for conformance with the recommendations contained in this report.

### **4.7 SITE DRAINAGE**

Surface drainage design should include the following:

- 1) Slope concrete pavement areas at least ½ percent and asphalt concrete pavements at least ½ and preferably 1 percent to extend pavement life. Do not allow water to pond on pavement areas.
- 2) If soil surrounds the building, discharge roof down spouts to storm drain system. Where soil surrounds the building, provide a 5 percent slope away from building exteriors for a distance of at least 5 feet.
- 3) Direct sprinklers away from buildings. Use drip irrigation near the structure and pavements. Excess watering increases to risk of premature pavement failure and shrink/swell underneath the structure.

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## 5 FOUNDATION RECOMMENDATIONS

### 5.1 FOUNDATIONS

The proposed commercial retail structure can be supported on continuous or isolated spread footings bearing in native soil or structural fill per our recommendations in Section 4. Continuous footings should be a maximum 12 inches wide and 18 inches deep below finished subgrade. Spread footings should be at least 24 inches wide and 18 inches deep below finished pad grade.

Table 4 below provides maximum allowable bearing capacity for dead plus live loads. These bearing capacities may be increased by one-third for the short-term effects of wind or seismic loading.

Minimum Footing Dimensions	Allowable Bearing Capacity (PSF)
Strip Footings 12" W x 18" Deep	2,300
Spread Footing 24" W x 18" Deep	2,500
Spread Footing 36" W x 18" Deep	2,900

**Table 3 – Building Footing Parameters**

Provide minimum steel reinforcing in strip footings of two No. 4 bars top and two No. 4 bars bottom.

Lateral loads may be resisted by friction along the base of footings and by passive pressure along the face of footings. The passive pressure is based on an equivalent fluid pressure in pounds per cubic foot (pcf). We recommend a passive lateral pressure of 340 pcf and a coefficient of friction equal to 0.34 for design. If passive resistance and friction are combined to resist lateral loads, we recommend that the passive pressure be reduced by 33 percent.

Utility excavations parallel to footing lines should be clear of a 1:1 (horizontal:vertical) plane projected downward from the base of footings. Where utility lines cross footings, they should be sleeved and footings deepened as appropriate. We should review these conditions and provide specific recommendations.

### 5.2 SLAB ON GRADE

We recommend the following for slabs-on-grade:

- 1) Place 4 inches of clean crushed rock on the building pad. Crushed rock should have 100 percent passing the ¾-inch sieve and less than 5 percent passing the No. 4 sieve.
- 2) Vapor barrier membrane consisting of 10-mil brand polyethylene "plastic" sheeting, properly sealed at penetrations and edges, then place,

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- 3) 1-inch of clean 3/8" pea gravel.
- 4) Reinforce slabs with No. 4 reinforcing bars at 24-inches on center each way. Slab reinforcement should be supported on dobies with a maximum spacing of 6 feet. Hooking and pulling of reinforcing is not acceptable.
- 5) Provide a minimum concrete thickness of 5 inches. Use 3,000 psi minimum unconfined concrete compressive strength at 28 days and a water to cement ratio of 0.48 or less for the slab.

Slab thickness and reinforcing steel requirements above are provided for purposes of resisting soil expansion potential. The structural engineer may increase these parameters based on building loads or anticipated building use. The structural engineer should provide final design thickness and additional reinforcement, if necessary, for the intended structural loads.

**Exterior Flatwork:** Exterior flatwork includes items such as concrete sidewalks, steps, and outdoor courtyards exposed to foot traffic only. Provide a minimum concrete flatwork thickness of 4 inches over 4 inches of aggregate base. Exterior flatwork subgrade should be moisture conditioned to within 0 to +4 percent of optimum water content and compacted to at least 90 percent relative compaction per ASTM D1557.

### **5.3 RETAINING WALL PARAMETERS**

Provided that adequate drainage is included, we recommend that walls subjected to active soil pressure be designed to resist an equivalent fluid pressure of 45 pounds per cubic foot (pcf). For at-rest conditions, we recommend an at-rest fluid pressure of 66 pcf with level backfill conditions. Retaining wall backfill should be predominantly granular, non-expansive backfill. Generally, we expect horizontal movements for retaining walls under active pressure conditions to rotate laterally an amount equal to 1 percent of the height of the wall.

The above lateral earth pressures assume sufficient drainage behind the walls to prevent any build-up of hydrostatic pressures (i.e. sump) from surface water infiltration and/or a rise in the ground water level. Drainage of the walls may be accomplished by one of the following methods:

1. Clean drain rock wrapped in Mirafi 140N non-woven filter fabric or equivalent as approved by our office. Drain rock should be ¾ to 1-1/2 inch in size and should have less than 5 percent passing the No. 200 sieve. Rock can be crushed or rounded. Drain rock should be 12 inches wide and extend to within 12 inches of subgrade.
2. Caltrans Class II Permeable material placed 12 inches wide and extended to within 12 inches of subgrade. The Caltrans Class II Permeable is self filtering; and as such a geotextile filter fabric is not necessary.
3. Geocomposite drainage can be used in lieu of crushed rock. We commonly recommend Amerdrain C96 geocomposite drainage board. The product should be installed per the manufacturer's directions. We recommend the

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wider drainage board be placed in the lower 2 feet of the wall. It is important that the proper transition pieces are used to transition from the geocomposite to 4-inch tight pipe for outletting purposes.

In either of the above cases, we recommend waterproofing of the walls with a product such as Masterseal 5000-R or equivalent as reviewed and approved by our office in writing. Waterproofing should be applied per the manufacturer's instructions.

Water collected at the bottom of the drain system should be transmitted away from the wall by a perforated pipe or weep holes. The pipe should be at least four inches in diameter with the perforations placed down (lettering typically on top). The pipe should daylight to a lower grade or connect to a sump, storm drain, or other suitable disposal facility. If adequate drainage is not provided, we recommend that an additional equivalent fluid pressure of 40 pcf be added to the values recommended above.

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### 5.4 2019 CBC SEISMIC PARAMETERS

We provide the 2019 California Building Code parameters in the table below. See also, Figure 4 for the peak ground acceleration as a function of probability of exceedance in 50 years. Based on the 2008 ground motion interpolator by the California Geological Survey, the site has a peak ground acceleration of 0.446g and 0.728g for 10 percent and 2 percent probability of exceedance in 50 years, respectively.

Categorization	Design Value
Site Latitude	38.24391006
Site Longitude	-122.01561059
Site Class	D
Risk Category	II
MCE <sub>R</sub> Ground Motion 0.2 second period ( $S_s$ )	1.57
MCE <sub>R</sub> Ground Motion 1.0 second period ( $S_1$ )	0.549
Site Amplification Factor at 0.2 second ( $F_a$ )	1.2
Site Amplification Factor at 1.0 second ( $F_v$ )	1.75
Site Modified Spectral Acceleration ( $S_{MS}$ )	1.884
Site Modified Spectral Acceleration ( $S_{M1}$ )	0.961
Numeric Seismic Design Value ( $S_{DS}$ )	1.256
Numeric Seismic Design Value ( $S_{D1}$ )	0.641
Seismic Design Category	D
<b>Table 4 – 2019 CBC Seismic Parameters</b>	



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### **5.5 PAVEMENT DESIGN**

#### **5.5.1 Asphalt Concrete Pavement**

We prepared several different asphalt pavement sections as shown in the table below. We performed an R-Value test from soil obtained from a bulk sample in boring B-4, which resulted in an R-Value of 52. Our subgrade pavement design was based on an R-value of 28 using Procedure 608 of the Caltrans Highway Design Manual. Contact our office for an alternative pavement design, if so desired.

	Traffic Index				
	4.5	5	6	7	8
Asphalt Concrete (in)	2.5	2.5	3	3.5	4.5
Aggregate Base (in)	6	7	9	11	12
<b>Table 5 – Pavement Sections</b>					

### **5.6 SPECIAL INSPECTIONS**

We recommend the following minimum special inspections as part of the grading and foundation portions of the project. The project architect, governing agency, or structural engineer may require other inspections.

- Observation and testing during mass/finish grading and trench backfill.
- Observation of footing excavations.
- Observation of reinforcing steel for foundations and slabs.
- Observation, sampling, and testing of concrete.

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### **6 LIMITATIONS**

The scope of this evaluation was limited to an evaluation of the load-carrying capabilities and stability of the subsoils. Oil, hazardous waste, radioactivity, irritants, pollutants, molds, or other dangerous substance and conditions were not the subject of this study. Their presence and/or absence is not implied or suggested by this report and should not be inferred.

The accompanying report summarizes the findings and opinions of Gularte & Associates, Inc. Our findings and opinions are based on information obtained on given dates by borings, laboratory testing, engineering judgment, and analyses.

The analyses, conclusions, and recommendations contained in our report are based on site conditions as they existed at the time of our study, and further assume that probes such as exploratory borings are representative of the subsurface conditions throughout the site; i.e., the subsurface conditions everywhere are not significantly different from those disclosed by the probes.

If during construction different subsurface conditions from those encountered during our exploration or different from those assumed in design are observed or appear to be present, or where variations from our design recommendations are made, we must be advised promptly so that we can review these conditions and modify the applicable recommendations if necessary. We cannot be held responsible for differing site conditions, changes in design, or modified geotechnical recommendations not brought to our attention.

Soil conditions cannot be fully determined by borings and, therefore, unanticipated soil conditions are commonly encountered. Such unexpected soil conditions often require that additional expenditures be made to attain a properly constructed project. Therefore, some contingency funding is recommended to accommodate potential extra costs.

Foundation dimensions, minimum slab thickness, and reinforcing details recommended herein are based upon geotechnical and construction considerations and are not offered in lieu of foundation design by an engineer. A determination of flooding potential, the existence of wetlands, or corrosive soil was beyond the scope of this report.

This geotechnical study did not include an investigation regarding the existence, location, or type of possible hazardous materials. If an investigation is necessary, we should be advised. In addition, if any hazardous materials are encountered during construction of the project, the proper regulatory officials should be notified immediately.

This report was prepared for the specific use of our client and applies only to the subject property. We are not responsible for interpretations by others of data presented in this report. This report is not a legal opinion. No warranty is expressed or implied. We base our conclusions in this report on judgment and experience. We performed this work in accordance with generally accepted standards of practice existing in northern California at the time of the report.

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Gularte & Associates, Inc. is not an expert on mold prevention. If particular recommendations are desired to prevent mold, we recommend that you contact an expert in that field.

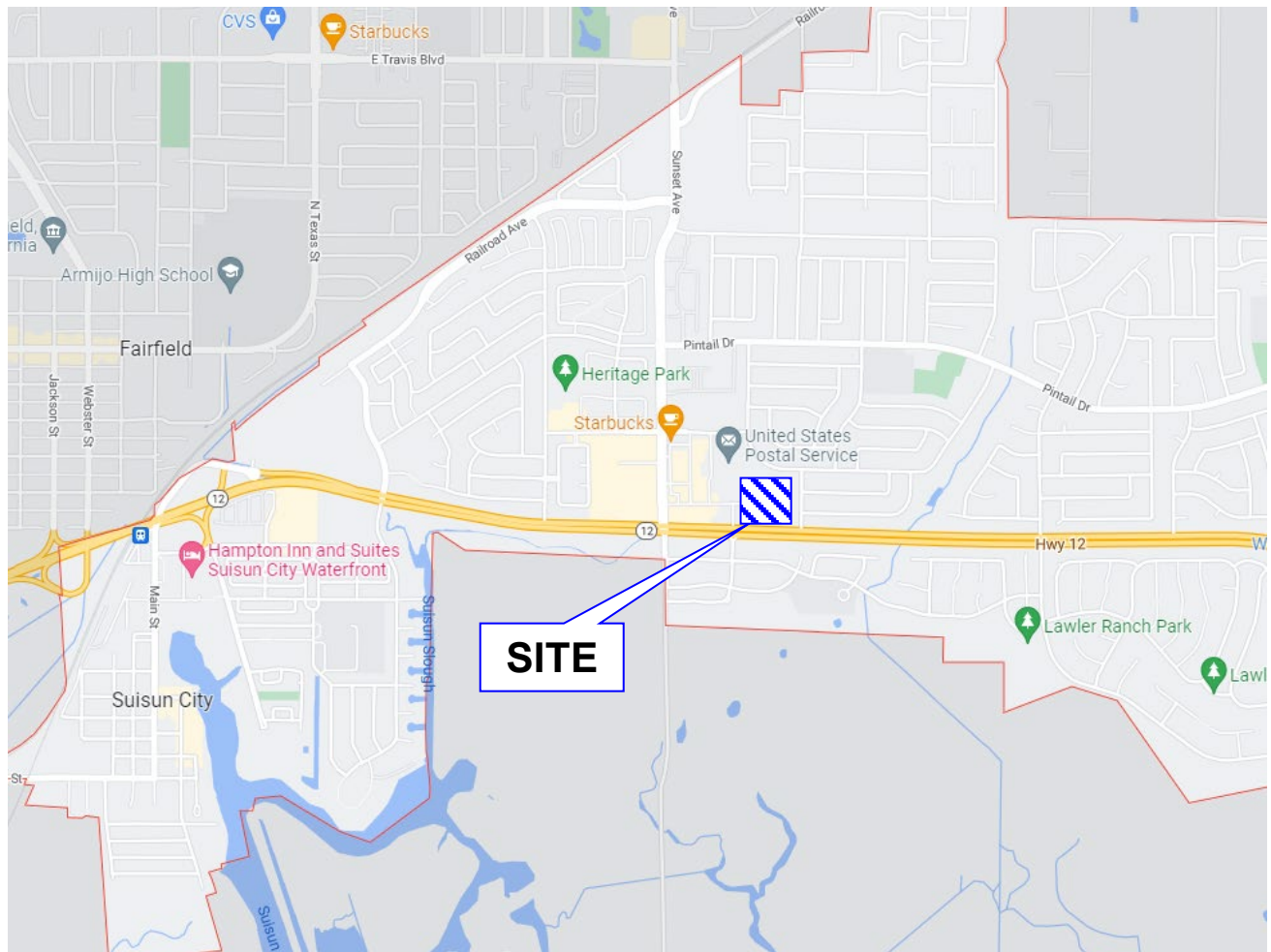
## **FIGURES**

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Figure 3 – Geologic Map

Figure 4 – Seismic Hazard Accelerations



## Vicinity Map

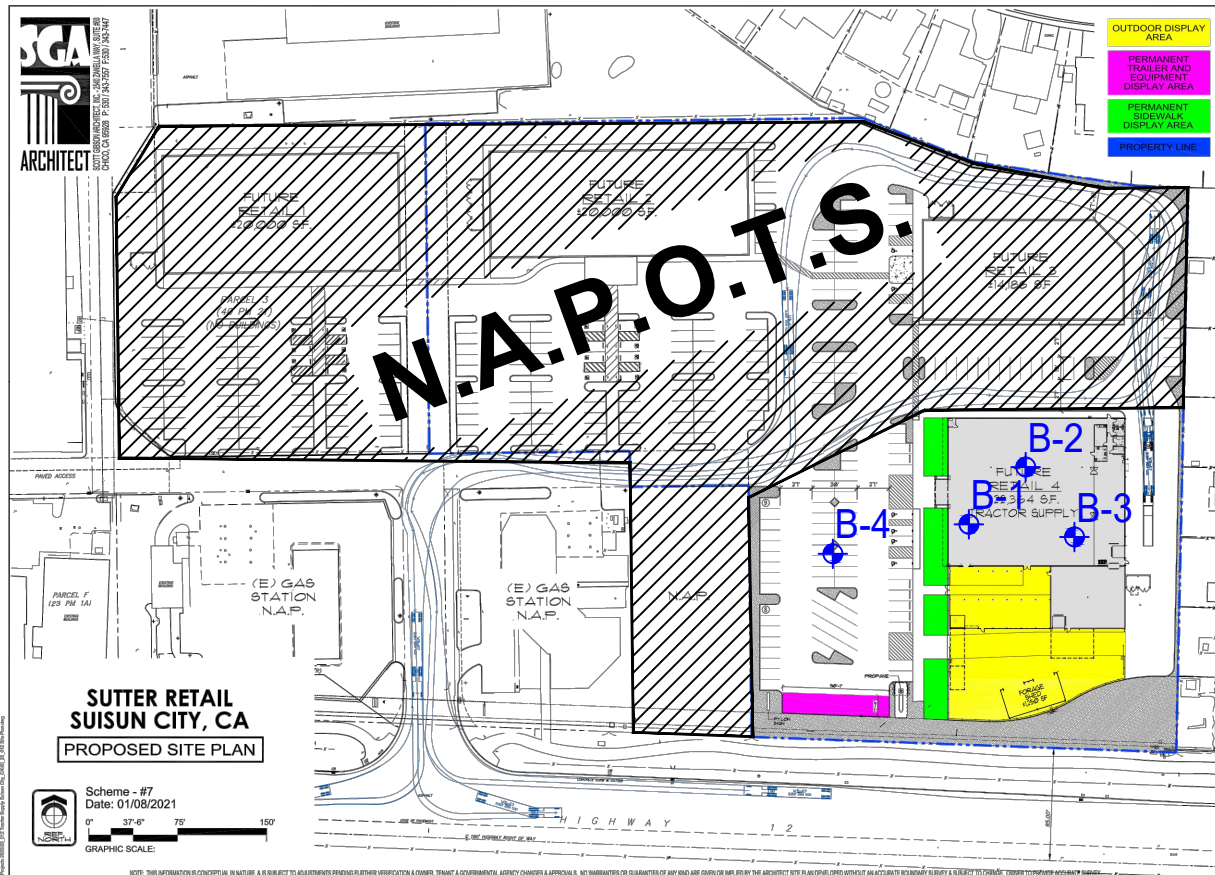
### Tractor Supply Co. – Suisun City



March 2022

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Figure 1



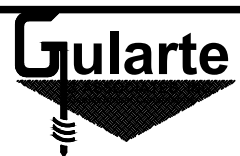
## LEGEND:

**B-1** BORING  
LOCATION

REFERENCE:

## SITEPLAN

TRACTOR SUPPLY CO. - SUISUN CITY



SCALE : NTS

FILE NO: 5028

REV. DATE: MARCH 16, 2022

Figure 2





▼ Ground Motion Interpolator (2008)

Longitude:

Latitude:

Site Condition (VS30):  (180-1050 m/sec)

Return Period:  
☐ 2% in 50 years ☒ 10% in 50 years

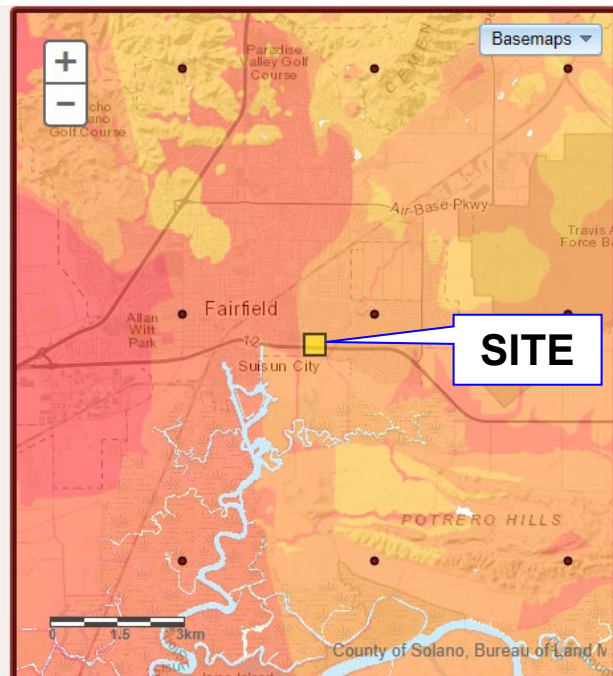
Spectral Acceleration:  
☒ PGA ☐ 0.2 second SA ☐ 1.0 second SA

Inputs:                      Result:

-122.01561059,  
 38.24391006  
 vs30: 270 m/sec  
 10% in 50 years  
 PGA

**0.446 g**

► Information and Disclaimer



▼ Ground Motion Interpolator (2008)

Longitude:

Latitude:

Site Condition (VS30):  (180-1050 m/sec)

Return Period:  
☒ 2% in 50 years ☐ 10% in 50 years

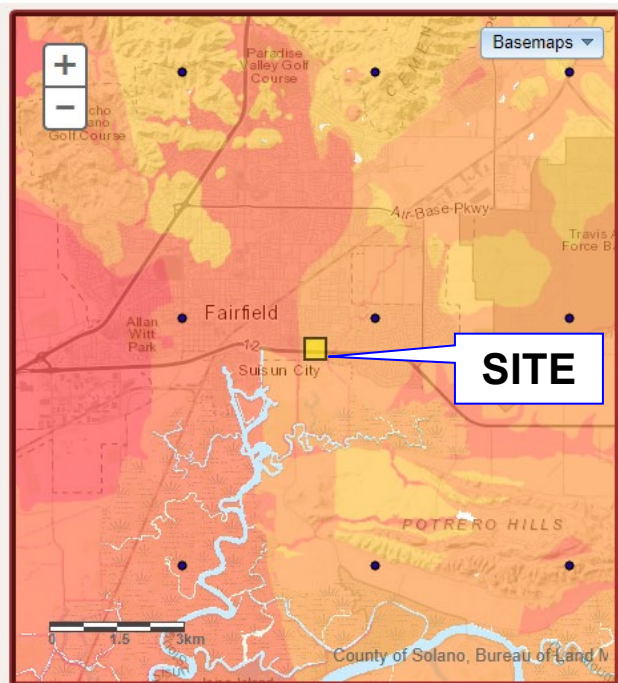
Spectral Acceleration:  
☐ PGA ☒ 0.2 second SA ☐ 1.0 second SA

Inputs:                      Result:

-122.01561059,  
 38.24391006  
 vs30: 270 m/sec  
 2% in 50 years  
 PGA

**0.728 g**

► Information and Disclaimer



## Seismic Hazard Map

### Tractor Supply Co. – Suisun City



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Figure 4



## **APPENDIX A**

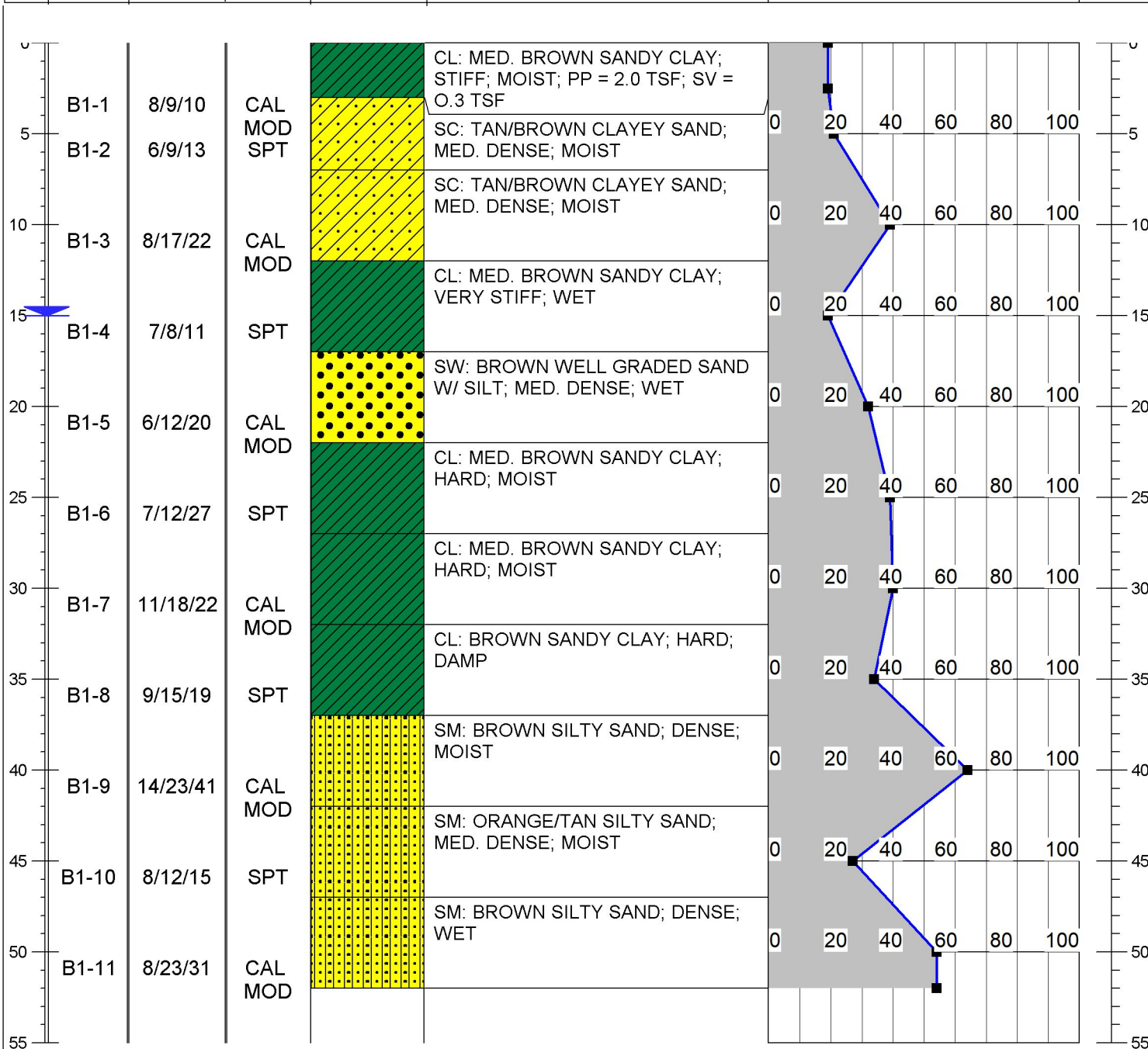
### Boring Logs

<b>Auger</b>	Solid Stem Auger	<b>Project No.</b>	5028
<b>Size</b>	4"	<b>Project Name</b>	TSC Suisun
<b>Drill</b>	CME 45B	<b>Elevation</b>	
<b>Logged By</b>	Brayden Hungrige	<b>Date</b>	March 4, 2022



# Boring # B1

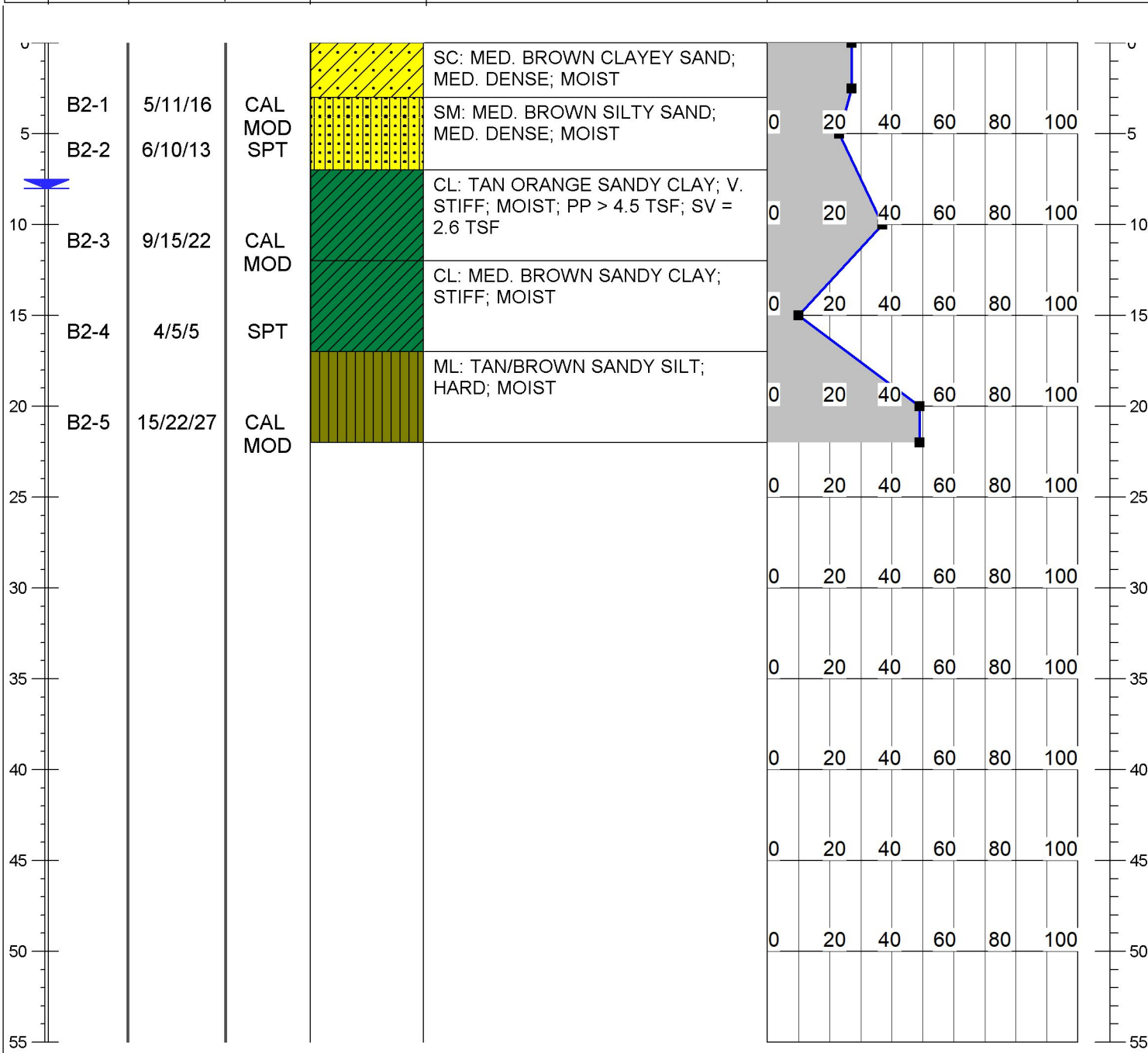
Depth (feet)	Sample No.	SPT/Cal Mod N-Value	Sample Type	Lithology	LITHOLOGIC DESCRIPTION	SPT or Cal Mod "N" Value (Uncorrected)	Depth (feet)
--------------	------------	------------------------	-------------	-----------	------------------------	---	--------------



Auger	Solid Stem Auger		Project No.	5028
Size	4"		Project Name	TSC Suisun
Drill	CME 45B		Elevation	
Logged By	Brayden Hungrige		Date	March 4, 2022

# Boring # B2

Depth (feet)	Sample No.	SPT/Cal Mod N-Value	Sample Type	Lithology	LITHOLOGIC DESCRIPTION	SPT or Cal Mod "N" Value (Uncorrected)	Depth (feet)
--------------	------------	---------------------	-------------	-----------	------------------------	--	--------------

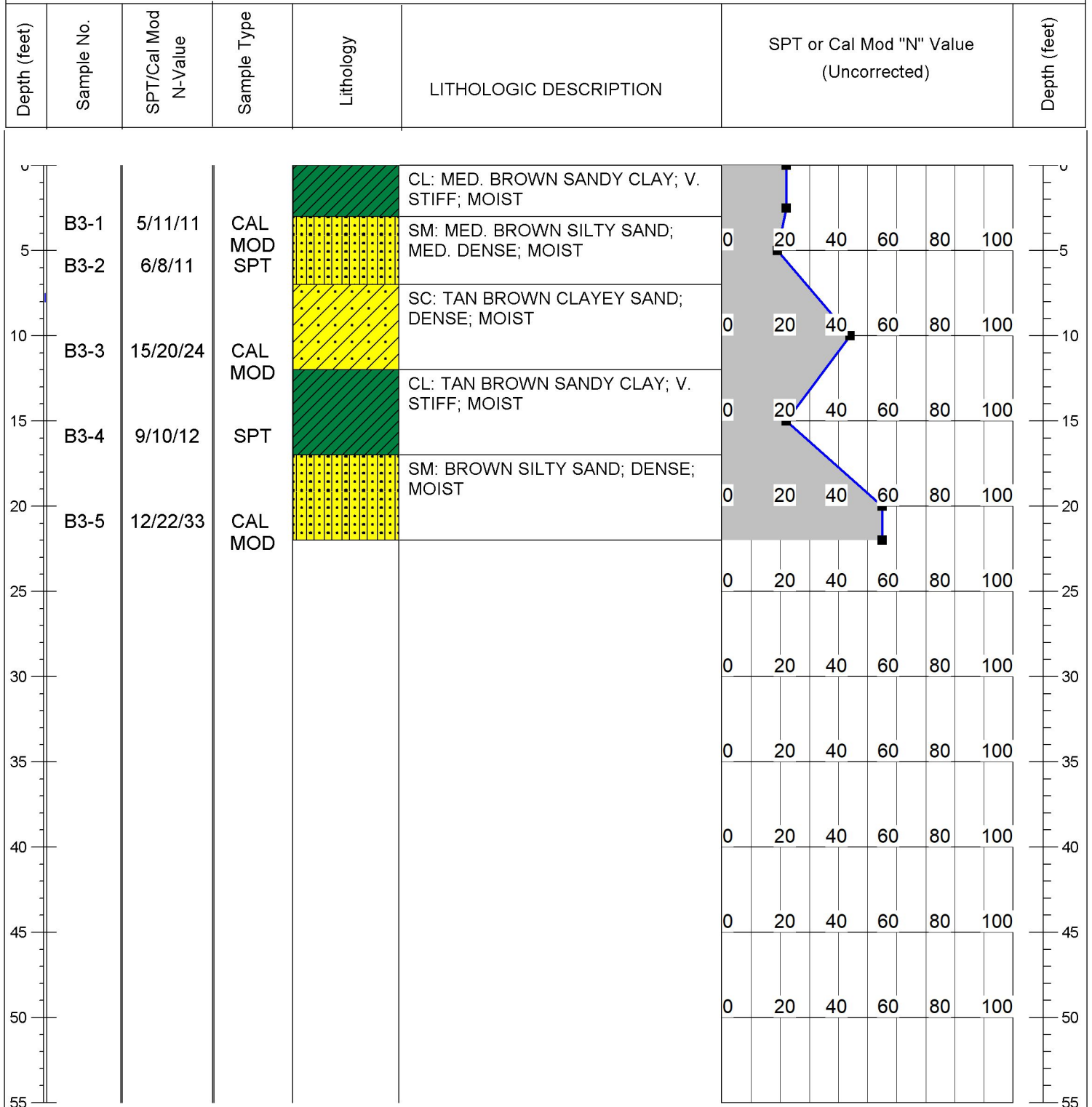


**Auger** Solid Stem Auger  
**Size** 4"  
**Drill** CME 45B  
**Logged By** Brayden Hungrige



**Project No.** 5028  
**Project Name** TSC Suisun  
**Elevation**  
**Date** March 4, 2022

## Boring # B3



**Client**  
 Hilbers

**Project**  
 TSC Suisun

**Sheet**  
 1 of 1



## **APPENDIX B**

### Laboratory Analysis Results

# Expansion Index Test; ASTM D4829



**Project No.:** 5028  
**Project Name:** Tractor Supply Suisun City  
**Date:** 3/10/2022  
**Sampling Location:** B1 @ 0-2' bgs  
**Sample Description** See Boring Log

Water Content	No. 1	
Mass of pan	258.6	grams
Mass of wet soil+pan	387.0	grams
Mass of dry soil+pan	372.4	grams
<b>Water Content (%)</b>	<b>12.8</b>	percent

Dry Soil Density		
Weight of Ring	368.2	grams
Weight of Ring + Soil	715.4	grams
Height of Ring	1	inches
Ring Diameter	4	inches
Volume of Ring	12.6	in <sup>3</sup>
Wet Soil Density	105.0	pcf
<b>Dry Soil Density</b>	<b>93.1</b>	pcf

## Saturation and Expansion Index

Percent Saturation	42.8
Uncorrected EI	46.4
<b>Corrected EI</b>	<b>41.9</b>

Dial Readings	
Time (hrs)	Reading (in)
13:00	0.0000
16:00	0.0261
8:00	0.0461
10:00	0.0464
13:00	0.0464

Delta	0.0464
-------	--------

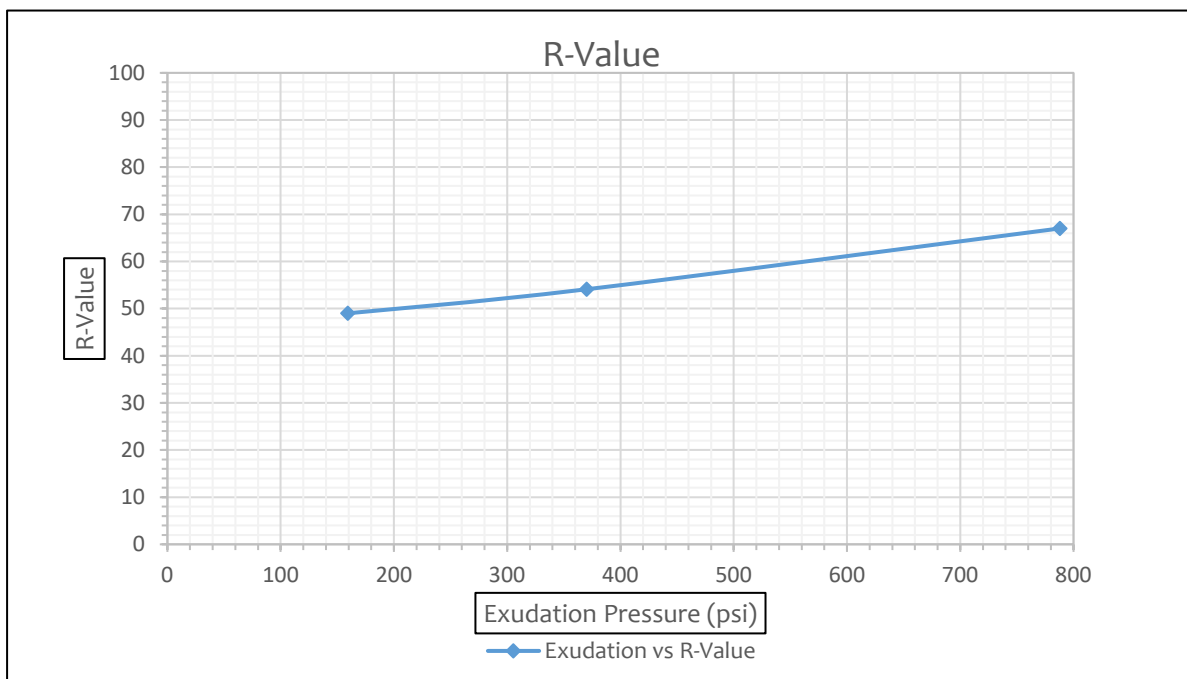
EI	Classification
0-20	Very Low
21-50	Low
51-90	Medium
91-130	High
> 130	Very High

## Notes:

Project Name:	Gularte & Associates	MPE No.:	03748-04
Sample ID:	5028: Tractor Supply Co.	Lab No.:	455635
Sample Description:	ark Brown Lean Clay W/ Some Orgaincs & Trace Grav	Date:	3/8/2022
Sample Location:	Suisun City	Tested By:	JS

## Test Results

Specimen	R1	R2	R3	
Exudation Pressure (psi)	788	159	370	0
Expansion Pressure (psf)	277	39	97	
Resistance Value (Corr.)	67	49	54	
% Moisture at Test	14.6%	16.9%	15.6%	
Dry Density at Test (pcf)	117.2	110.0	114.2	

**"R" Value (at Exudation Pressure of 300 psi):****52****Comments:**

Reviewed By:

*August Smarkel*

August Smarkel, Lab Engineer



## ASTM D2216/2922 Moisture/Density Test

**Project No.:** 5028  
**Project Name:** Tractor Supply - Suisun City  
**Sampling Locations:** See Below  
**Soil Description:** See Boring Logs



<b>Boring Location</b>	B2	B2	B3	B3	B1	B1	B1
<b>Sample Depth</b>	2.5'	10'	2.5'	20'	30'	40'	50'

### Water Content Calculations

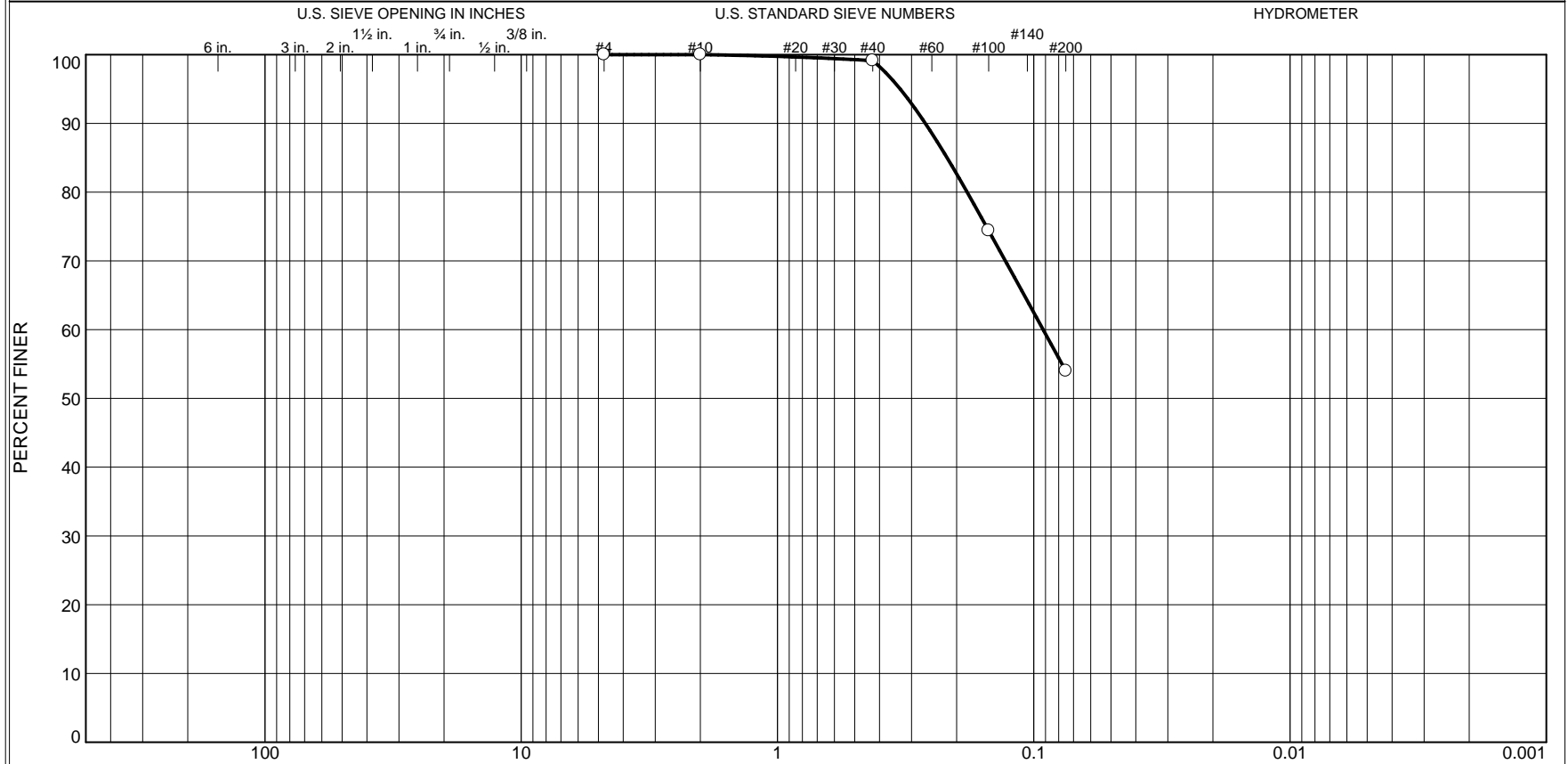
	<b>No. 1</b>	<b>No. 2</b>	<b>No. 3</b>	<b>No. 4</b>	<b>No. 5</b>	<b>No. 6</b>	<b>No. 7</b>
Obtain Mass of Container	188.6	199.2	188.4	188.2	188.6	190.8	192.0
Obtain Mass of Wet Specimen+Container	701.4	577.8	584.6	554.6	535.4	518.0	520.8
Obtain Mass of Dry Specimen+Container	625.6	518.4	525.0	502.6	458.6	465.6	459.4
<b>Water Content (%)</b>	<b>17.3</b>	<b>18.6</b>	<b>17.7</b>	<b>16.5</b>	<b>28.4</b>	<b>19.1</b>	<b>23.0</b>

### Soil Density Calculations

	<b>No. 1</b>	<b>No. 2</b>	<b>No. 3</b>	<b>No. 4</b>	<b>No. 5</b>	<b>No. 6</b>	<b>No. 7</b>
Obtain Mass of Mold:	277.6	270.6	252.0	241.4	251.6	277.6	252.2
Obtain Mass of Soil and Mold:	1190.6	1208.4	1189.0	1186.6	1128.4	1212.8	1171.8
Total Mass of Soil	913.0	937.8	937.0	945.2	876.8	935.2	919.6
Length of sample	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Wet Soil Density	125.8	129.2	129.1	130.3	120.8	128.9	126.7
<b>Dry Soil Density</b>	<b>107.2</b>	<b>109.0</b>	<b>109.7</b>	<b>111.8</b>	<b>94.1</b>	<b>108.2</b>	<b>103.1</b>

Notes

# Particle Size Distribution Report



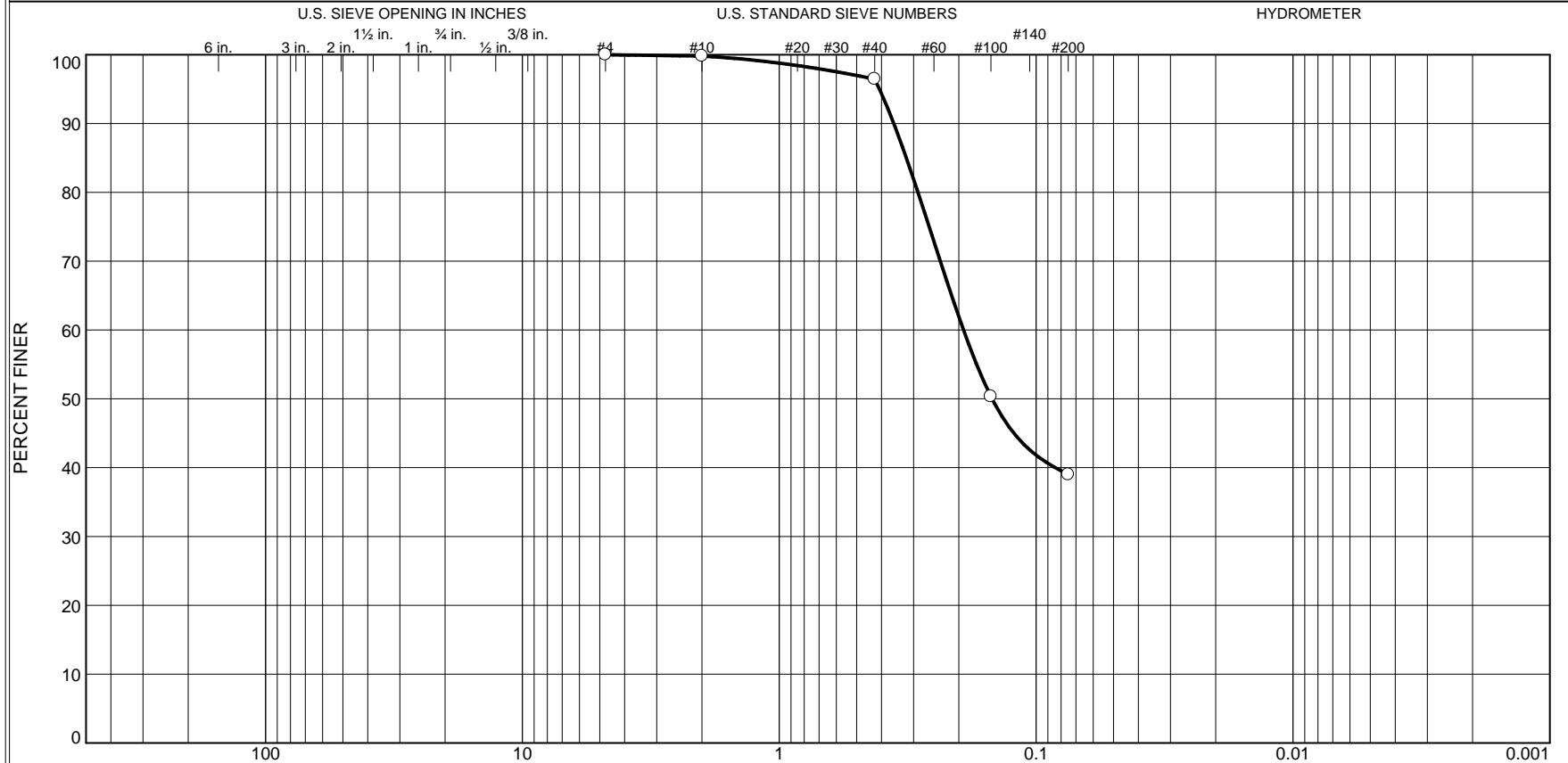
% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	0.0	0.0	0.0	0.9	45.1	54.0

Identification				Date Sampled	Date Received	Date Tested
Location: B2	Depth: 15	Sample Number: 4		3/4/22	3/4/22	3/7/22

Client Hilbers, INC.		<b>GULARTE &amp; ASSOCIATES, INC. Rocklin, CA</b>	
Project Tractor Supply Co.			
Project No. 5028	Figure		

Tested By: BH

# Particle Size Distribution Report



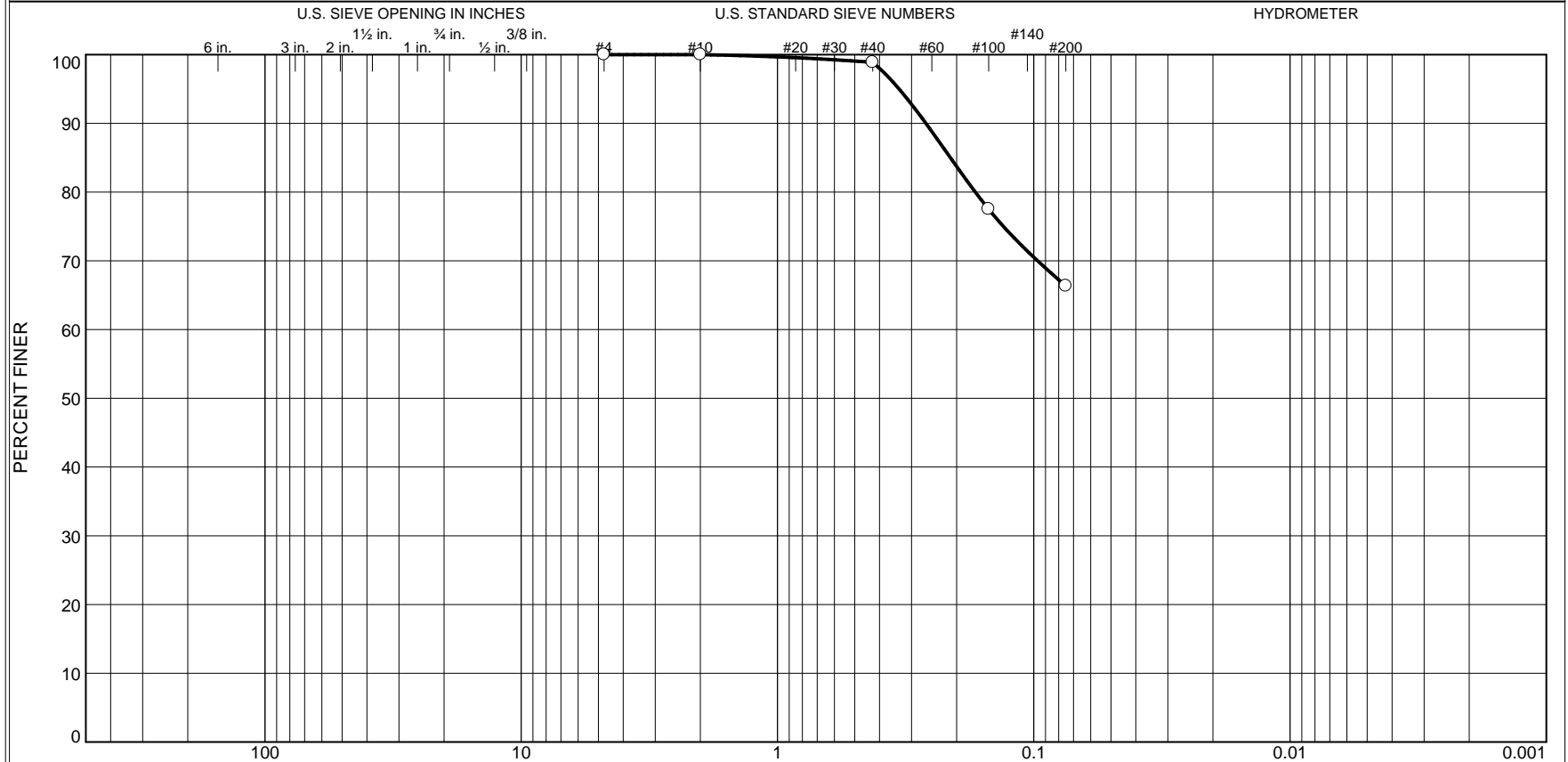
% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	0.0	0.0	0.2	3.4	57.4	39.0

Identification				Date Sampled	Date Received	Date Tested
Location: B3	Depth: 5	Sample Number: 2		3/4/22	3/4/22	3/7/22

Client Hilbers, INC.		<b>GULARTE &amp; ASSOCIATES, INC. Rocklin, CA</b>	
Project Tractor Supply Co.			
Project No. 5028	Figure		

Tested By: BH

# Particle Size Distribution Report



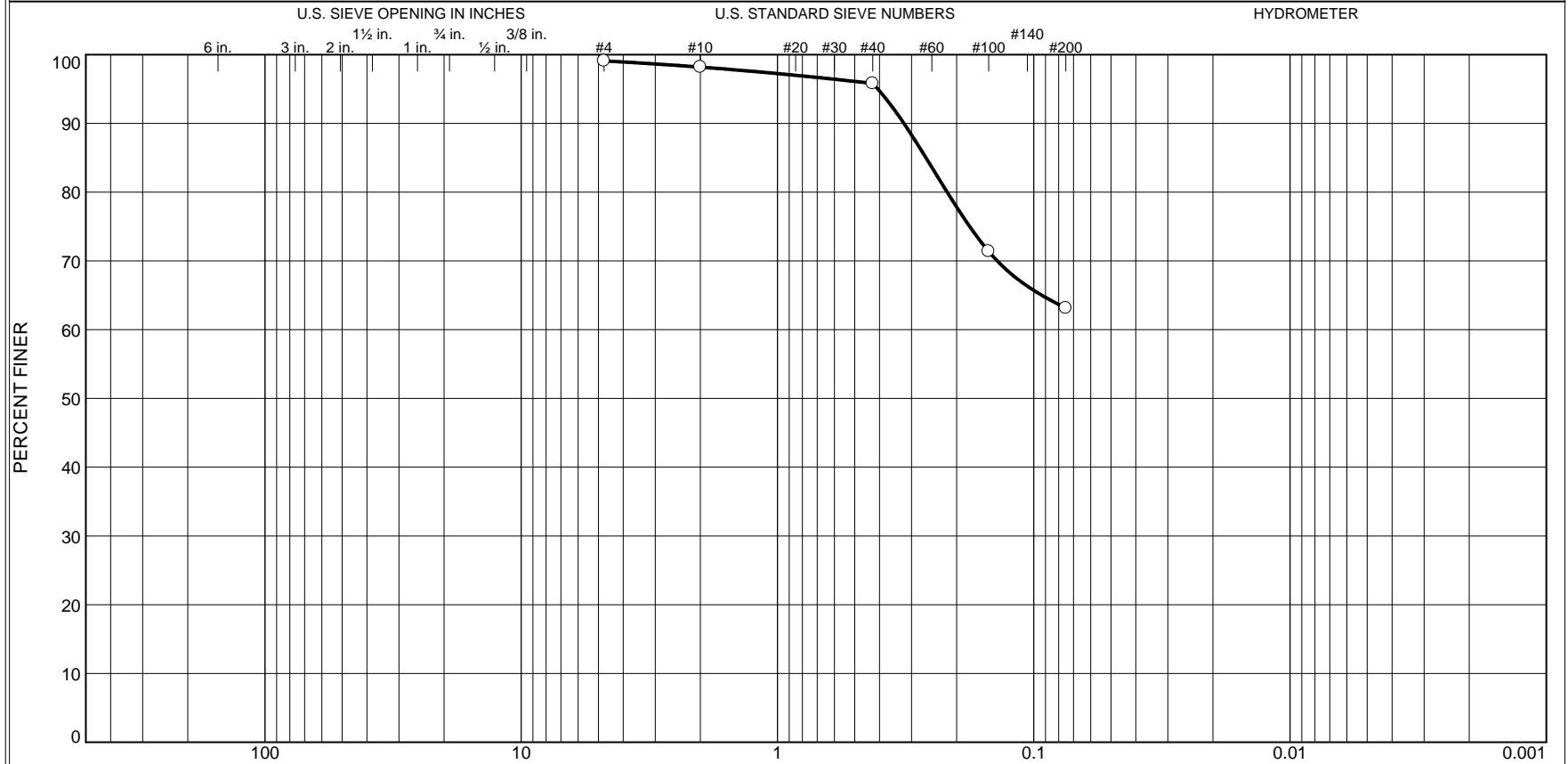
% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0						100.0

Identification				Date Sampled	Date Received	Date Tested
Location: B3	Depth: 15	Sample Number: 4		3/4/22	3/4/22	3/7/22

Client Hilbers, INC.		<b>GULARTE &amp; ASSOCIATES, INC. Rocklin, CA</b>	
Project Tractor Supply Co.			
Project No. 5028	Figure		

Tested By: BH

# Particle Size Distribution Report



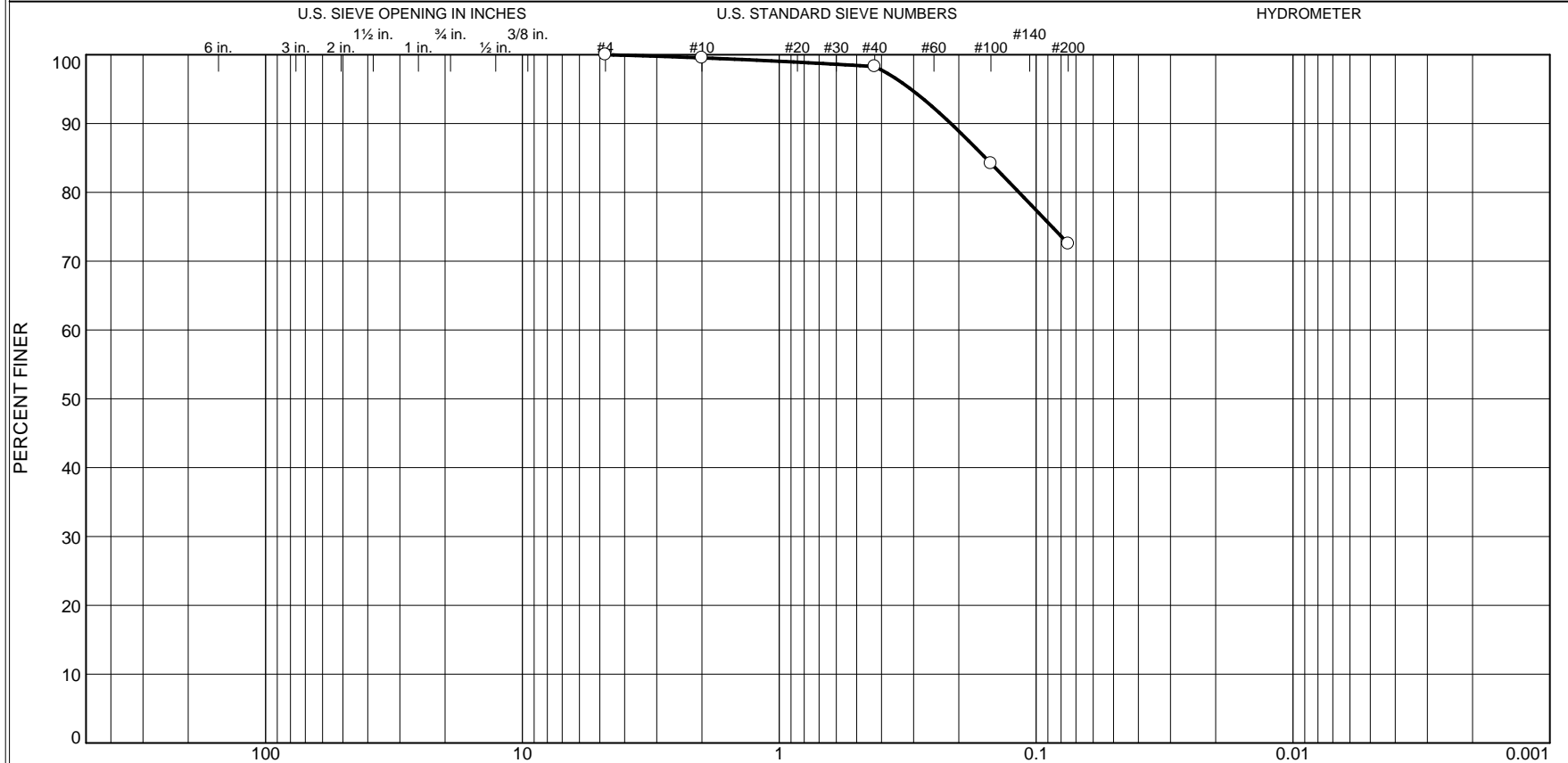
% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0			0.9	2.4	32.7	63.1

Identification				Date Sampled	Date Received	Date Tested
Location: B1	Depth: 25	Sample Number: 6		3/4/22	3/4/22	3/7/22

Client Hilbers, INC.		<b>GULARTE &amp; ASSOCIATES, INC. Rocklin, CA</b>	
Project Tractor Supply Co.			
Project No. 5028	Figure		

Tested By: BH

# Particle Size Distribution Report



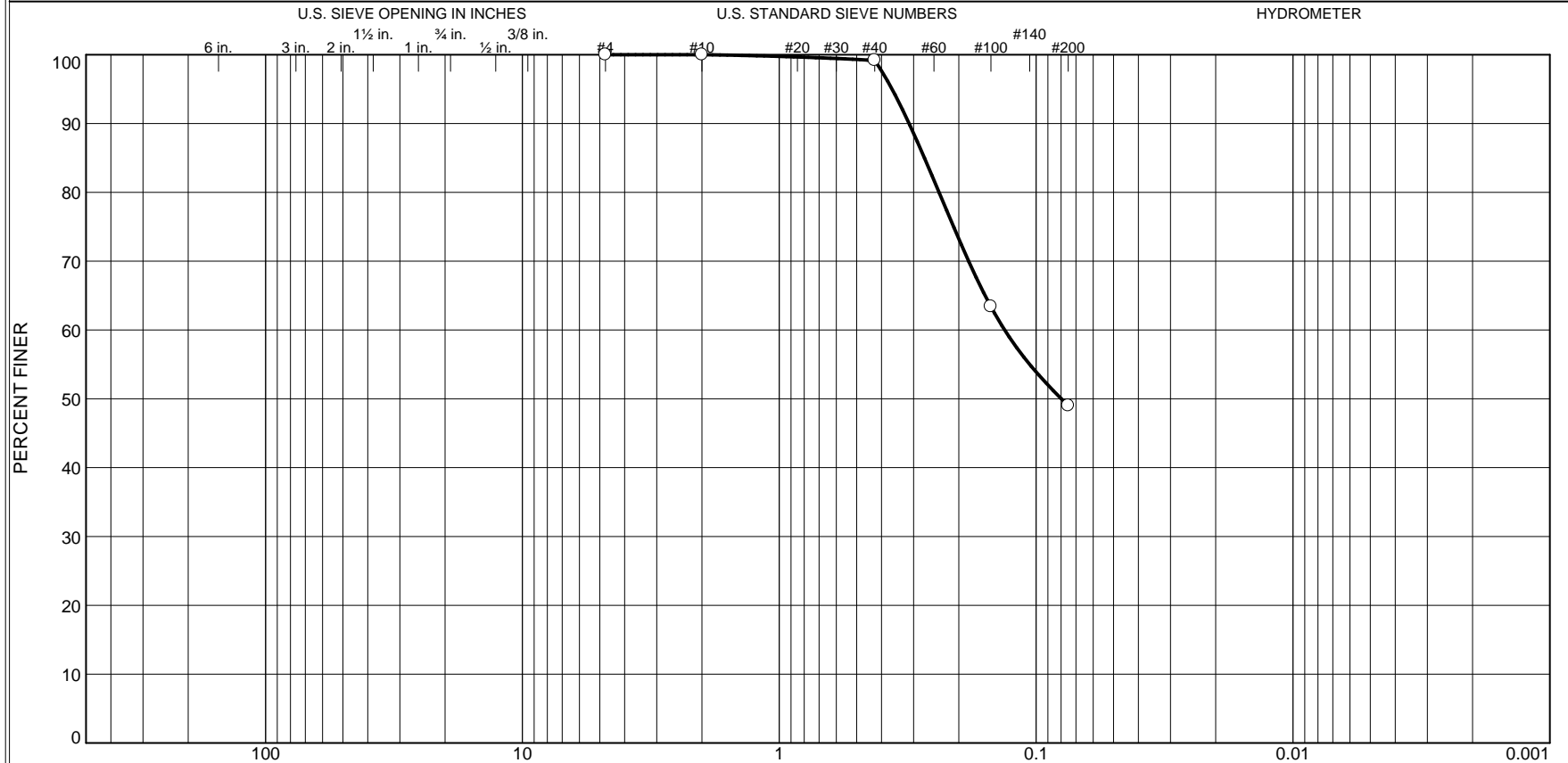
% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	0.0	0.0	0.5	1.2	25.8	72.5

Identification				Date Sampled	Date Received	Date Tested
Location: B1	Depth: 35	Sample Number: 8		3/4/22	3/4/22	3/7/22

Client Hilbers, INC.		<b>GULARTE &amp; ASSOCIATES, INC. Rocklin, CA</b>	
Project Tractor Supply Co.			
Project No. 5028	Figure		

Tested By: BH

# Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines
	Coarse	Fine	Coarse	Medium	Fine	
0.0	0.0	0.0	0.0	0.8	50.2	49.0

Identification				Date Sampled	Date Received	Date Tested
Location: B1	Depth: 45	Sample Number: 10		3/4/22	3/4/22	3/7/22

Client Hilbers, INC.		<b>GULARTE &amp; ASSOCIATES, INC. Rocklin, CA</b>	
Project Tractor Supply Co.			
Project No. 5028	Figure		

Tested By: BH

## **APPENDIX C**

### Geotechnical Terms/Definitions



## Referenced Geotechnical Terms

**ASTM:** American Society for Testing and Materials is one of the largest voluntary standards development systems in the world. Soils and materials tests are described in detail in their annual books of standards.

**Bench:** A relatively level step, excavated into acceptable material of a slope face, against which fill is to be placed. Its purpose is to provide a firm and stable contact between the existing material and the new fill to be placed.

**Buttress:** An engineered fill designed and built to support or retain a weak or unstable Slope.

**Compaction:** The densification of soil through mechanical manipulation (tamping, rolling, vibrating, etc.). The addition of optimum amounts of water can be crucial to obtaining adequate densification of the material.

**Cut:** The depth to which a material is to be removed/excavated to reach final grade elevation.

**Consolidation:** The gradual reduction in volume of a soil mass due to an increase in compressive stress (load).

**Daylight Line:** The surface contact of *cut* and *fill* soil.

**Density Test:** A field test used to determine compaction of a fill or native soil. The test is typically performed by the nuclear gauge method.

**Expansive Soil:** A soil (usually clayey) that increases in volume when water is added (expands), and shrinks when water content is reduced.

**Geotechnical:** Pertaining to the practical applications of soil science and civil Engineering.

**Geotextile Fabric:** A permeable fabric used during grading to stabilize, allow for drainage, filtration, or add reinforcement beneath a pavement or structure.

**Maximum Density Test: (“curve”, “max”, or “proctor”)** A laboratory test used to determine the optimum moisture and maximum dry density of a soil type (typically ASTM standard test method D 1557).

**Native Soil (Natural Ground, NG):** (1) Soil deposited by the forces of nature through weathering, erosion, etc.; soil that has not been moved by man. (2) The undisturbed surface prior to the commencement of grading, sometimes referred to as Original Ground (OG).

**Nesting:** Oversized material (typically >6” size) that has been placed in a manner that leaves voids between the piled boulder or rock fragments, and these voids are not infilled with solid material (soil, fine gravel/sand, etc). The absence of nesting rock is required in a *rock fill*.

**NICET:** National Institute for Certification in Engineering Technologies. Engineering technicians that are tested by NICET may be certified at various levels of expertise (Levels I through IV) in different fields of construction.

**Optimum Moisture:** The moisture content at which the maximum density of a soil can be achieved during the compaction process. Each soil type (or blend of soil types) has its own specific optimum moisture content that is used as a guide for moisture conditioning during the grading process.

**Over-excavation:** The removal of the upper portion of soil on site. Usually performed under roadways or building pads and combined with replacement of structural fill

**Pass:** One trip or movement across a designated area by a piece of compaction equipment or machinery.

**Percent Compaction:** The ratio (expressed as a percentage) of the dry density of a soil (as determined by the nuclear gauge) to the maximum density of a soil (as determined by the maximum density test).

**Pre-Saturation:** The moisture conditioning (above optimum) of a pad subgrade or footing excavation prior to placing/pouring a foundation. Pre-saturation is usually performed on expansive soils to help limit future swelling that may be caused by seasonal rains or heavy landscape watering.

**Pumping:** May be observed as a rolling motion in soils compacted in an over-optimum condition (too wet). These pumping soils may, during the rolling process, become rutted or indented by rubber-tired equipment, usually leaving a bulging path in the soil parallel to the tire print.

**Relative Compaction:** A means of comparing the dry soil density in the field to the laboratory compaction curve. It equals the field dry density divided by the lab max dry density, and then is multiplied by 100 and expressed as a percentage.

**Rock Fill:** "Oversized material" (typically 6" or larger diameter) mixed/compacted during placement with a soil matrix in such a manner as to limit voids and nesting, allowing for a homogeneous, well-compacted fill.

**Scarify (Rip):** The act of loosening the exposed surface material (usually the upper 8-12 inches by ripper teeth on a dozer or blade) to mix, blend, moisten, or prepare for fill placement.

**Structural Fill:** Fill that is supporting manmade structures, including buildings, roadways, levees, and slopes. Structural Fill is typically compacted to 90 percent relative compaction.

**Subdrain:** A drainage system placed beneath the surface to drain surface water, or relieve hydrostatic pressure (such as water buildup behind a fill slope). It typically consists of filter material (rock and/or fabric) and a perforated drainpipe.

**Toe:** The contact point of the bottom of a fill or cut slope with a relatively level or pre-existing ground surface.

**Transition Lot:** A lot which a portion is to be cut (excavated) and a portion is to be filled (raised) to reach pad grade.

**Unified Soil Classification System (USCS):** A system used by soil engineers to classify soil for engineering purposes. A kind of a shorthand for describing soil types.

## Appendix F Acoustical Analysis for the Tractor Supply Company Retail Store

## **ACOUSTICAL ANALYSIS**

### **TRACTOR SUPPLY COMPANY RETAIL STORE SUISUN CITY, CALIFORNIA**

**WJVA Project No. 22-20**

**PREPARED FOR**

**HILBERS INCORPORATED  
770 N. WALTON AVENUE, SUITE 100  
YUBA CITY, CALIFORNIA, 95993**

**PREPARED BY**

**WJV ACOUSTICS, INC.  
VISALIA, CALIFORNIA**



**MARCH 17, 2022**

## INTRODUCTION

The project is a proposed 22,364 square-foot Tractor Supply Company (TSC) retail store, in Suisun City. The project site is located north of (and adjacent to) State Route 12 (SR 12), approximately ¼ mile east of Sunset Avenue. According the project applicant, the store would operate daily between the hours of 8:00 a.m. to 8:00 p.m., with the exception of Sundays, on which it will operate between the hours of 9:00 a.m. to 7:00 p.m.

This report, prepared by WJV Acoustics, Inc. (WJVA), is based upon the project site plan prepared by SGA Architect (dated 01/08/21) ambient noise level measurements obtained by WJVA at the project site, reference noise measurements obtained at existing similar facilities and information provided to WJVA by the project applicant concerning the proposed hours of operation and truck delivery information. Revisions to the site plan or other project-related information available to WJVA at the time the analysis was prepared may require a reevaluation of the findings and/or recommendations of the report. The project site plan is provided as Figure 1.

Appendix A provides definitions of the acoustical terminology used in this report. Unless otherwise stated, all sound levels reported in this analysis are A-weighted sound pressure levels in decibels (dB). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards utilize A-weighted sound levels, as they correlate well with public reaction to noise. Appendix B provides typical A-weighted sound levels for common noise sources.

## CRITERIA FOR ACCEPTABLE NOISE EXPOSURE

The Public Health and Element of the Suisun City General Plan (currently in Draft) establishes noise level standards for both transportation and non-transportation (stationary) noise sources. Table I provides the transportation noise sources maximum interior and exterior noise level standards for various land use categories, in terms of the  $L_{dn}$  and  $L_{eq}$ . The  $L_{dn}$  represents the time-weighted energy average noise level for a 24-hour day, with a 10 dB penalty added to noise levels occurring during the nighttime hours (10:00 p.m.-7:00 a.m.). The  $L_{dn}$  represents cumulative exposure to noise over an extended period of time and are therefore calculated based upon *annual average* conditions. The  $L_{eq}$  represents the energy average noise levels over a given period of time, in this case one hour. Table I provides the General Plan noise level standards for transportation noise sources.

Outdoor activity areas include backyards of single-family residences, individual patios or decks of multi-family developments and common outdoor recreation areas of multi-family developments. The intent of the exterior noise level requirement is to provide an acceptable noise environment for outdoor activities and recreation.

<p style="text-align: center;"><b>TABLE I</b></p> <p style="text-align: center;"><b>MAXIMUM ALLOWABLE NOISE EXPOSURE, dBA – TRANSPORTATION NOISE SOURCES</b></p> <p style="text-align: center;"><b>SUISUN CITY GENERAL PLAN</b></p>			
Noise-Sensitive Land Use	Outdoor Activity Areas	Interior Spaces	
	$L_{dn}$ /CNEL, dB	$L_{dn}$ /CNEL, dB	$L_{eq}$ dB <sup>2</sup>
Residential	60	45	---
Residential (in Downtown Waterfront Specific Plan Area or other Mixed-Use Designations)	70	45	---
Transient Lodging	60	45	---
Hospitals, Nursing Homes	60	45	--
Theaters, Auditoriums, Music Halls	---	---	35
Churches, Meeting Halls	60	---	40
Office Buildings	---	---	45
Schools, Libraries, Museums	60	---	45
Playgrounds, Neighborhoods	70	---	---
<p>Notes: Noise-sensitive land uses include schools, hospitals, rest homes, long-term care, mental care facilities, residences, and other similar land uses. Outdoor activity areas are considered to be the portion of a noise-sensitive property where outdoor activities would normally be expected (i.e., patios of residences and outdoor instructional areas of schools). Outdoor activity areas for the purposes of this element do not include gathering spaces alongside transportation corridors or associated public rights-of-way. Where development projects or roadway improvement projects could potentially create noise impacts, an acoustical analysis shall be required as part of the environmental review process so that noise mitigation may be included in the project design. Such analysis shall be the financial responsibility of the applicant and be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics. Mitigation strategies shall include site planning and design over other types of mitigation.</p> <p>Source: Suisun City General Plan</p>			

Table II provides noise level performance standards for non-transportation (stationary) noise sources, as provided in the County of Suisun City General Plan Noise Element. The non-transportation noise level standards are provided in terms of the energy average noise level ( $L_{eq}$ ) and maximum allowable noise level ( $L_{max}$ ), and become more restrictive during the nighttime hours (10:00 p.m. to 7:00 a.m.). The noise level standards provided in Table II are applicable to new noise-sensitive land uses proposed in the vicinity of existing stationary noise sources.

TABLE II			
NON-TRANSPORTATION NOISE LEVEL STANDARDS, dBA			
NEW NOISE-SENSITIVE LAND USES			
SUISUN CITY GENERAL PLAN			
Daytime (7 a.m.-10 p.m.)		Nighttime (10 p.m.-7 a.m.)	
$L_{eq}$	$L_{max}$	$L_{eq}$	$L_{max}$
60	75	45	60
Notes: Each of the noise levels specified shall be lowered by five dBA for simple tone noises, noises consisting primarily of speech, or music, or for recurring impulsive noises. These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).			
Source: Suisun City General Plan			

Table III provides noise level performance standards for non-transportation (stationary) noise sources, as provided in the County of Suisun City General Plan Noise Element. The non-transportation noise level standards are provided in terms of the energy average noise level ( $L_{eq}$ ) and maximum allowable noise level ( $L_{max}$ ), and become more restrictive during the nighttime hours (10:00 p.m. to 7:00 a.m.). **The noise level standards provided in Table III are applicable to new noise-producing land uses proposed in the vicinity of existing noise-sensitive land uses.** It should be noted, truck and vehicle movements off public roadways are considered to be stationary noise sources.

The General provides the following exemption to the noise standards provided in Table III:

- *If the ambient noise level exceeds the standard in Table 9-3 (Table III), the standard becomes the ambient level plus 5 dBA.*

<p><b>TABLE III</b></p> <p><b>NON-TRANSPORTATION NOISE LEVEL STANDARDS<sup>2</sup></b></p> <p><b>NEW NOISE-PRODUCING LAND USES</b></p> <p><b>SUISUN CITY GENERAL PLAN</b></p>			
Category	Cumulative Duration of a Noise Event <sup>1</sup> (Minutes)	Daytime <sup>3,5</sup>	Nighttime <sup>4,5</sup>
1	30 (L <sub>50</sub> )	50	45
2	15 (L <sub>25</sub> )	55	50
3	5 (L <sub>8.3</sub> )	60	55
4	1 (L <sub>1.7</sub> )	65	60
5	0 (L <sub>max</sub> )	70	65

Notes:

1 Cumulative duration refers to time within any one-hour period.

2 Noise level standards measured in dBA.

3 Daytime = Hours between 7:00 a.m. and 10:00 p.m.

4 Nighttime = Hours between 10:00 p.m. and 7:00 a.m. 5 Each of the noise level standards specified may be reduced by

5 dBA for tonal noise (i.e., a signal which has a particular and unusual pitch) or for noises consisting primarily of speech or for recurring impulsive noises (i.e., sounds of short duration, usually less than one second, with an abrupt onset and rapid decay such as the discharge of firearms).

Source: Suisun City General Plan



## PROJECT SITE NOISE EXPOSURE

The project site is currently an undeveloped lot, located north of (and adjacent to) State Route 12 (SR 12). The project site is generally bound by existing residential land uses to the north and east, SR 12 to the south and existing commercial/retail land uses to the west.

Existing noise levels in the project vicinity are dominated by traffic noise associated with vehicles on SR 12. Other sources of noise observed during a site visit included noise associated with landscaping activities, occasional aircraft overflights, birds, barking dogs and human voices.

Measurements of existing ambient noise levels in the project vicinity were conducted on February 16, 2022. Long-term (24-hour) ambient noise level measurements were conducted at one (1) location (site LT-1). Site LT-1 was located within the project, in the vicinity of existing residential land uses. The site was selected as it is representative of existing ambient noise levels in the project vicinity and nearby residential land uses, and it provided a secure location to leave the noise monitoring equipment unattended for a 24-hour period. The location of the 24-hour noise measurement site is provided as Figure 2.

Noise monitoring equipment consisted of a Larson-Davis Laboratories Model LDL-820 sound level analyzer equipped with a B&K Type 4176 1/2" microphone. The equipment complies with the specifications of the American National Standards Institute (ANSI) for Type I (Precision) sound level meters. The meter was calibrated with a B&K Type 4230 acoustic calibrator to ensure the accuracy of the measurements.

Measured hourly energy average noise levels ( $L_{eq}$ ) at site LT-1 ranged from a low of 53.7 dB between 1:00 a.m. and 2:00 a.m. to a high of 64.2 dBA between 6:00 a.m. and 7:00 a.m. Hourly maximum ( $L_{max}$ ) noise levels at site LT-1 ranged from 69.9 to 85.1 dBA. Residual noise levels at the monitoring site, as defined by the  $L_{90}$ , ranged from 39.8 to 57.7 dBA. The  $L_{90}$  is a statistical descriptor that defines the noise level exceeded 90% of the time during each hour of the sample period. The  $L_{90}$  is generally considered to represent the residual (or background) noise level in the absence of identifiable single noise events from traffic, aircraft and other local noise sources. The measured  $L_{dn}$  value at site LT-1 during the 24-hour noise monitoring period was 66.5 dB  $L_{dn}$ . Figure 3 graphically depicts hourly variations in ambient noise levels at site LT-1 and provides a site photograph.

Table IV provides the measured hourly ambient noise levels at the 24-hour measurement site (LT-1). Noise levels are provided in Table IV in terms of the applicable Suisun City noise performance standards, as provided above in Table III. Table IV also provides the average noise levels for each of the statistical performance standard for both daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) hours.

**TABLE IV**  
**SUMMARY OF 24-HOUR NOISE LEVEL MEASUREMENTS**  
**SUISUN CITY TRACTOR SUPPLY COMPANY RETAIL STORE**  
**FEBRUARY 16, 2022**

Time	A-Weighted Decibels, dB, $L_{eq}$ (one-hour average)				
	LT-1				
	$L_{max}$	$L_2$	$L_8$	$L_{25}$	$L_{50}$
12:00 a.m.	82.6	64.0	56.5	50.5	45.7
1:00 a.m.	73.3	63.9	57.1	51.2	46.6
2:00 a.m.	72.8	65.6	58.9	53.7	48.0
3:00 a.m.	74.3	65.9	61.6	56.6	50.1
4:00 a.m.	75.2	68.7	65.3	62.3	59.0
5:00 a.m.	78.8	69.7	67.6	65.1	62.7
6:00 a.m.	73.4	69.5	67.7	65.4	63.2
7:00 a.m.	76.7	68.2	66.4	64.1	61.8
8:00 a.m.	78.6	70.0	66.7	63.9	61.2
9:00 a.m.	72.5	69.6	66.9	63.8	60.8
10:00 a.m.	81.4	68.4	66.2	62.9	61.0
11:00 a.m.	77.7	67.9	66.0	62.2	60.1
12:00 p.m.	76.2	68.1	66.2	61.8	60.4
1:00 p.m.	79.5	67.4	65.1	61.6	60.2
2:00 p.m.	83.0	67.2	64.3	61.2	59.4
3:00 p.m.	81.5	66.9	63.9	60.7	57.7
4:00 p.m.	79.1	67.0	63.7	60.9	58.4
5:00 p.m.	80.6	66.3	63.6	61.1	58.4
6:00 p.m.	85.1	66.4	63.9	61.7	59.0
7:00 p.m.	81.9	66.7	62.9	60.1	57.2
8:00 p.m.	71.4	65.0	61.4	57.7	54.2
9:00 p.m.	69.9	63.6	60.2	56.5	52.8
10:00 p.m.	83.4	65.3	60.5	56.3	52.7
11:00 p.m.	83.2	62.5	58.1	53.4	49.1
Average Daytime	78.3	67.2	64.5	61.3	58.8
Average Nighttime	77.4	66.1	61.5	57.2	53.0

Source: WJV Acoustics, Inc.

## **PROJECT RELATED NOISE LEVELS**

The project is a proposed 22,364 square-foot Tractor Supply Company (TSC) retail store, in Suisun City. There are existing residential land uses to the north and south of the project site, in the vicinity of proposed loading dock and truck access points. Suisun City has requested a noise study to verify that noise levels associated with project operation will not exceed the City's applicable stationary noise level standards at the nearby residential land uses. Sources of noise associated with project operations would include activities associated with the loading dock and truck movements at the rear of the Tractor Supply Company store, as well as noise associated with mechanical sources (HVAC).

### **SLOWLY MOVING TRUCKS-**

Large trucks would access the project site (and loading docks) via an ingress/egress point west of the proposed store location, via SR 12. Trucks would access the loading dock at the rear of the TSC store via a designated truck route (as shown on Site Plan/Figure 1). Truck movements would generally occur as close as forty (40) feet from existing residential land uses.

The frequency and times of truck deliveries to the TSC store were not known at the time this analysis was prepared. The applicant has stated that it is anticipated that truck deliveries would likely occur approximately twice per week. WJVA previously prepared a noise study for a TSC store in San Luis Obispo County, for which WJVA was informed that the store would typically receive up to five (5) truck deliveries per week. Therefore, it can be reasonably assumed that there would be between zero (0) and one (1) truck delivery per day, to the proposed TSC store.

WJVA has conducted measurements of the noise levels produced by slowly moving trucks for a number of studies. Such truck movements would be expected to produce noise levels in the range of 69-73 dBA at a distance of 40 feet. This range assumes all trucks would be non-refrigerated. The applicable daytime noise level standard is 70 dB. While noise levels associated with truck movements could at times exceed 70 dB at nearby residential land uses, based upon measured ambient noise levels at noise monitoring site LT-1, it is expected that exterior noise levels near the truck access route already experience periodic noise levels exceeding 70 dB. While it can be reasonably assumed that noise levels at the residential land uses located along the northern portion of the truck access route would generally be lower than those measured at the monitoring site (due to increased setback from SR 12), due to the infrequent nature of truck deliveries (maximum of one per day) and existing ambient noise levels in the project vicinity, noise levels associated with truck movements on the project site would not be considered a significant impact during daytime hours.

In order to minimize potential nighttime annoyance and sleep disturbance, WJVA recommends that all truck deliveries be limited to the daytime hours of 7:00 a.m. to 10:00 p.m. The applicable Suisun City noise level standard becomes 5 dB more restrictive during the nighttime hours of 10:00 p.m. to 7:00 a.m., and the risk of annoyance or sleep disturbance is increased within these hours.

## **LOADING DOCKS-**

The loading dock behind the TSC store would be located approximately 50 feet from the closest existing outdoor activity area (backyard) of existing residential land uses. Noise sources typically associated with loading dock activities include truck engines, fork lifts, the banging of hand carts and roll-up doors, noise from P.A. systems, and the voices of truck drivers and store employees. Truck engines are typically turned off while trucks are in loading dock areas to reduce noise and save energy.

WJVA has conducted numerous noise level measurements of loading dock operation at retail stores. Based upon these noise level measurements conducted by WJVA for other studies, loading dock noise levels would be expected to be in the range of 64-82 dBA at a distance of 50 feet.

Based upon the findings of the ambient noise survey (see Table IV above), average daytime hourly maximum noise levels were determined to be approximately 78 dB. Such levels already exceed the daytime maximum noise level standard of 70 dB. The General Plan states that if existing ambient noise levels already exceed the applicable noise level standard, the applicable standard becomes the ambient noise level, plus 5 dB. Therefore, based upon measured ambient noise levels and the provisions of the General Plan, the applicable standard would be 83 dB (78 dB plus 5 dB).

As stated above, loading dock activities (corresponding to truck delivery frequency) would occur no more than one time per day. Noise levels associated with loading dock activities vary widely, but were calculated to be in the range of approximately 64-82 dB, at the location of the closest nearby residential land uses. The upper limits of this range of noise levels are below 83 dB (the average existing ambient hourly average of 78 dB, plus 5 dB, per the provisions of the General Plan). Therefore, noise levels associated with loading dock activities would not be considered a significant noise impact.

In order to minimize potential nighttime annoyance and sleep disturbance, WJVA recommends that all loading dock activities be limited to the daytime hours of 7:00 a.m. to 10:00 p.m. The applicable Suisun City noise level standard becomes 5 dB more restrictive during the nighttime hours of 10:00 p.m. to 7:00 a.m., and the risk of annoyance or sleep disturbance is increased within these hours.

## **MECHANICAL EQUIPMENT**

It is assumed that the project would include roof-mounted HVAC units on the proposed building. The heating, ventilating, and air conditioning (HVAC) requirements for the buildings would likely require the use of multiple packaged roof-top units. For the purpose of noise and aesthetics, roof-mounted HVAC units are typically shielded by means of a roof parapet. WJVA has conducted reference noise level measurements at numerous commercial and retail buildings with roof-mounted HVAC units, and associated noise levels typically range between approximately 45-50 dB at a distance of 50 feet from the building façade.

For this project, the closest residential land uses to any potential roof-mounted HVAC equipment would be located at a minimum setback distance of approximately 100 feet, or greater. Taking into account the standard rate of noise attenuation with increased distance from a point source (-6 dB/doubling of distance), noise levels associated with the operation of roof-mounted HVAC units would be approximately 39-44 dB at the closest sensitive receptor property line. Such levels do not exceed any Suisun City noise level standard or exceed existing (without project) ambient noise levels.

## CONCLUSIONS AND RECOMMENDATIONS

The proposed Suisun City Tractor Supply Company store, to be located north of (and adjacent to) State Route 12 (SR 12), will comply with applicable Suisun City daytime (7:00 a.m. to 10:00 p.m.) noise level standards, when adjusted for existing ambient noise levels (as provided in the Suisun City General Plan).

In order to minimize potential nighttime annoyance and sleep disturbance, WJVA recommends that all on-site truck deliveries and loading dock activities be limited to the daytime hours of 7:00 a.m. to 10:00 p.m. The applicable Suisun City noise level standard becomes 5 dB more restrictive during the nighttime hours of 10:00 p.m. to 7:00 a.m., and the risk of annoyance or sleep disturbance is increased within these hours.

The foregoing conclusions and recommendations are based upon the best information known to WJV Acoustics, Inc. (WJVA) at the time the study was prepared concerning the proposed site plan, proposed activities and the noise levels that could be produced at the project site. Any significant changes to the information used for this analysis will require a reevaluation of the findings of this report. Additionally, any significant future changes in noise regulations or other factors beyond WJVA's control may result in long-term noise results different from those described by this analysis.

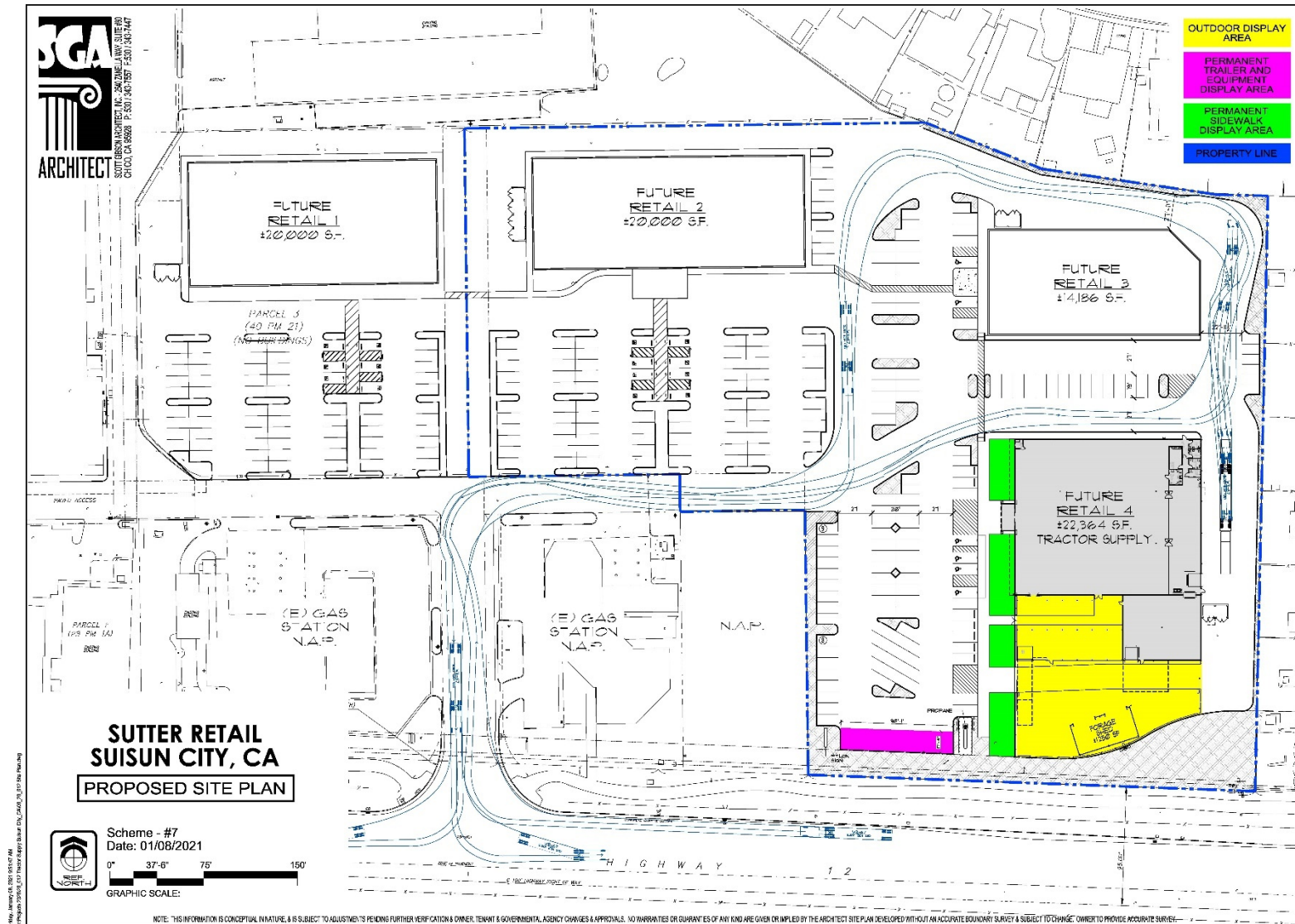
Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Walter J. Van Groningen', with a stylized flourish at the end.

Walter J. Van Groningen  
President

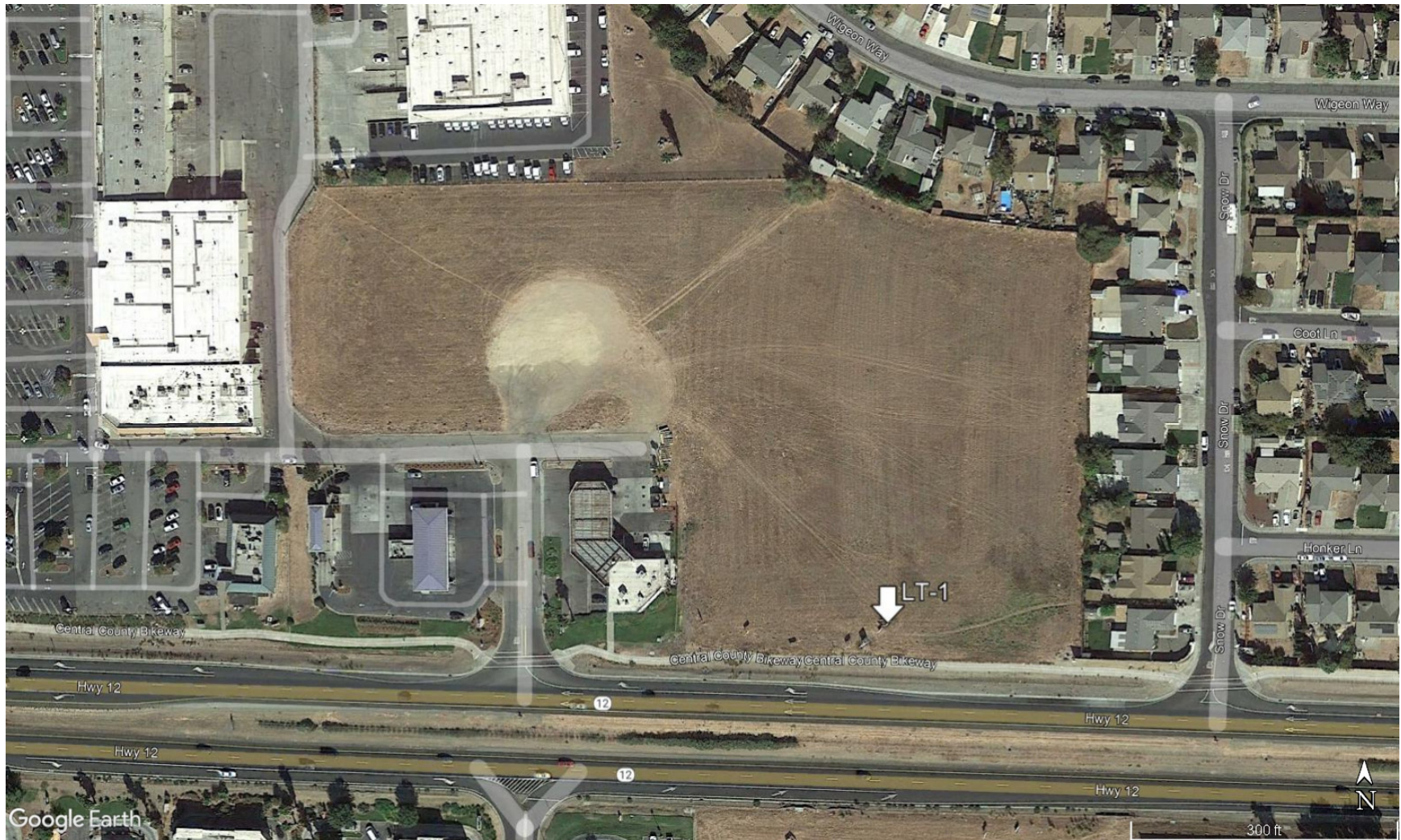
WJV:wjv

FIGURE 1: PROJECT SITE PLAN



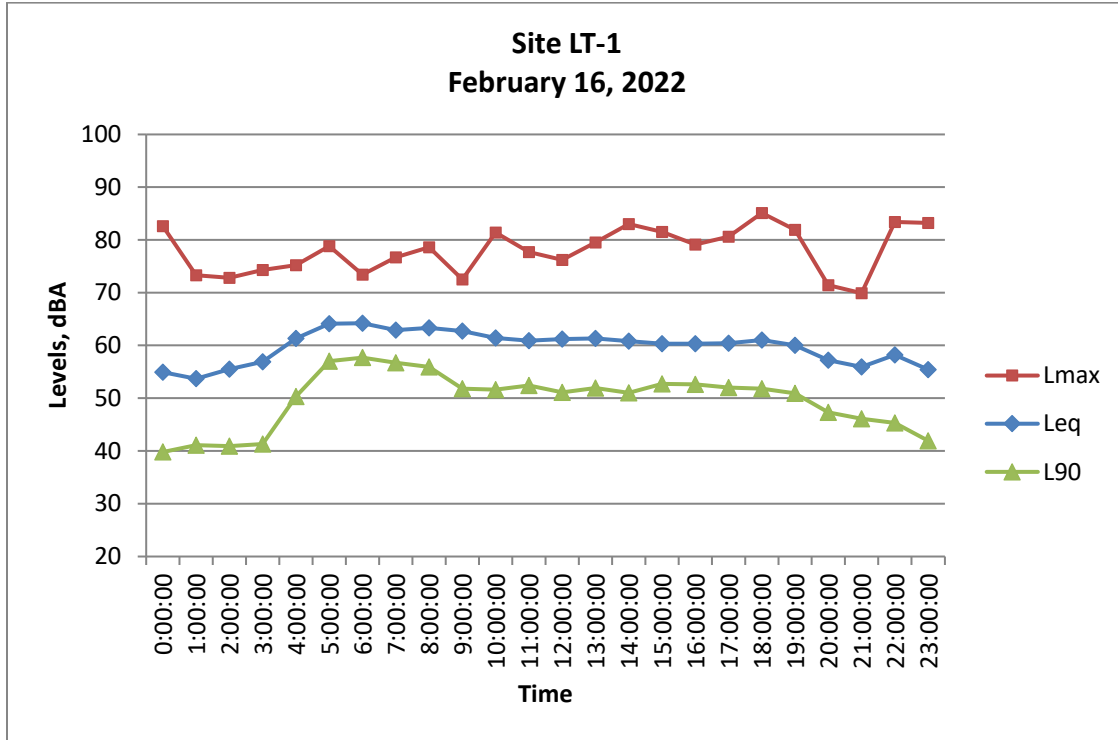


**FIGURE 2: PROJECT SITE VICINITY & NOISE MONITORING SITE LOCATION**





**FIGURE 3: HOURLY AMBIENT NOISE LEVELS, LT-1**



## APPENDIX A

### ACOUSTICAL TERMINOLOGY

<b>AMBIENT NOISE LEVEL:</b>	The composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.
<b>CNEL:</b>	Community Noise Equivalent Level. The average equivalent sound level during a 24-hour day, obtained after addition of approximately five decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and ten decibels to sound levels in the night before 7:00 a.m. and after 10:00 p.m.
<b>DECIBEL, dB:</b>	A unit for describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
<b>DNL/L<sub>dn</sub>:</b>	Day/Night Average Sound Level. The average equivalent sound level during a 24-hour day, obtained after addition of ten decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.
<b>L<sub>eq</sub>:</b>	Equivalent Sound Level. The sound level containing the same total energy as a time varying signal over a given sample period. L <sub>eq</sub> is typically computed over 1, 8 and 24-hour sample periods.
<b>NOTE:</b>	The CNEL and DNL represent daily levels of noise exposure averaged on an annual basis, while L <sub>eq</sub> represents the average noise exposure for a shorter time period, typically one hour.
<b>L<sub>max</sub>:</b>	The maximum noise level recorded during a noise event.
<b>L<sub>n</sub>:</b>	The sound level exceeded "n" percent of the time during a sample interval (L <sub>90</sub> , L <sub>50</sub> , L <sub>10</sub> , etc.). For example, L <sub>10</sub> equals the level exceeded 10 percent of the time.

## A-2

### ACOUSTICAL TERMINOLOGY

#### **NOISE EXPOSURE CONTOURS:**

Lines drawn about a noise source indicating constant levels of noise exposure. CNEL and DNL contours are frequently utilized to describe community exposure to noise.

#### **NOISE LEVEL REDUCTION (NLR):**

The noise reduction between indoor and outdoor environments or between two rooms that is the numerical difference, in decibels, of the average sound pressure levels in those areas or rooms. A measurement of Noise level reduction combines the effect of the transmission loss performance of the structure plus the effect of acoustic absorption present in the receiving room.

#### **SEL or SENEL:**

Sound Exposure Level or Single Event Noise Exposure Level. The level of noise accumulated during a single noise event, such as an aircraft overflight, with reference to a duration of one second. More specifically, it is the time-integrated A-weighted squared sound pressure for a stated time interval or event, based on a reference pressure of 20 micropascals and a reference duration of one second.

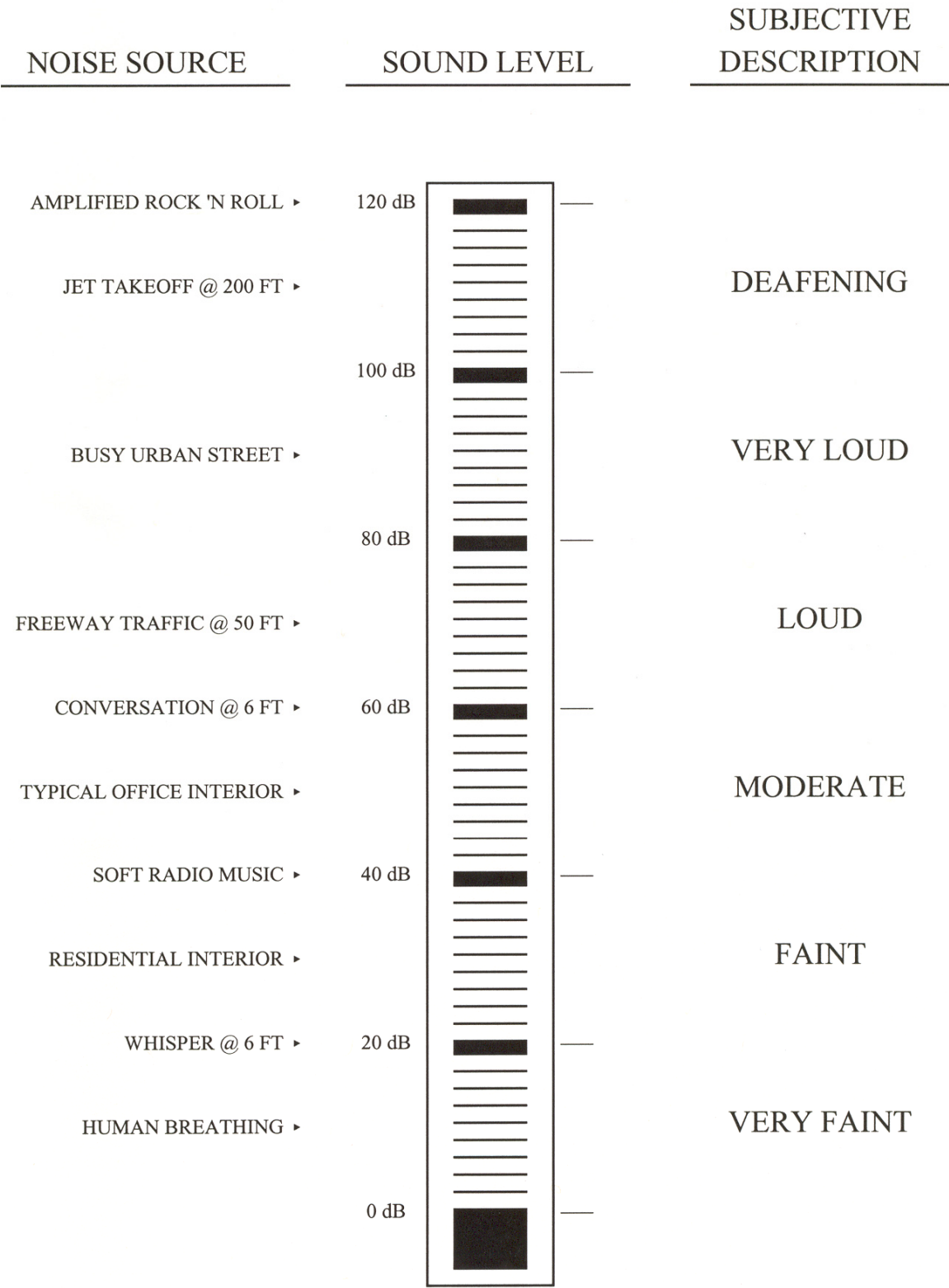
#### **SOUND LEVEL:**

The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

#### **SOUND TRANSMISSION CLASS (STC):**

The single-number rating of sound transmission loss for a construction element (window, door, etc.) over a frequency range where speech intelligibility largely occurs.

APPENDIX B  
EXAMPLES OF SOUND LEVELS



## Appendix G Focused Traffic Study/VMT Assessment



January 18, 2023

Mr. Kurt Hilbers and Ms. Kristen Longwell  
Hilbers, Inc.  
770 N. Walton Avenue, Suite 100  
Yuba City, California 95993

SUBJECT: TRACTOR SUPPLY COMPANY – SUISUN CITY, CALIFORNIA  
FOCUSED TRAFFIC STUDY/VMT ASSESSMENT (JOB NUMBER 19583)

Dear Mr. Hilbers and Ms. Longwell:

The following Focused Traffic Study/VMT Assessment has been prepared in accordance with the *City of Suisun City General Plan Transportation Element* (May 5, 2015) and the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 28, 2018). The study includes a Vehicle Miles Traveled (VMT) screening assessment as required by CEQA and evaluated the potential operational deficiencies and transportation improvements that may need to be considered in association with the proposed Tractor Supply Company store located within the future Sutter Retail site along Highway 12 in Suisun City, California. **Exhibit 1** following this letter illustrates the project vicinity map.

## **Project Description**

The project proposes to develop a 22,364 square-foot Tractor Supply Company store on a parcel within the future Sutter Retail site, which is bounded by Highway 12 to the south, the existing Sunset Center retail shopping center to the west, and existing single-family residences to the north and east. The project site is currently vacant.

The project will take access from an existing driveway along Highway 12 that currently serves two existing gasoline stations and that will serve the future Sutter Retail site. The existing project driveway is currently unsignalized and is restricted to right-turn in/right-turn out access, and no access changes are proposed with the project. Access to the project site will also be provided from an unsignalized right-turn in/right-turn out driveway on Sunset Avenue located approximately 200 feet north of Highway 12 that currently provides secondary access to the existing Sunset Center retail shopping center. Additional project access will be taken from an existing signalized intersection along Sunset Avenue that currently provides primary access to the existing Sunset Center retail shopping center. It is also assumed that a nominal number of project trips would access the project site via a secondary driveway to the Sunset Center retail shopping center on Merganser Drive. **Exhibit 2** following this letter illustrates the project site plan.

## Study Area and Analysis Scenarios

Based on feedback from the City of Suisun City staff during the scoping process, the study area includes the following intersections:

1. Highway 12 / Existing Project Driveway (unsignalized)
2. Highway 12 / Sunset Avenue-Grizzly Island Road (signalized)
3. Sunset Avenue / Sunset Center South Entrance (unsignalized)
4. Sunset Avenue / Sunset Center Main Entrance (signalized)

Based on feedback from the City of Suisun City staff during the scoping process, the following scenarios were evaluated in this study:

- Existing Weekday Conditions (Tuesday-Thursday)
- Existing Friday Conditions
- Existing Plus Project Weekday Conditions (Tuesday-Thursday)
- Existing Plus Project Friday Conditions

## Analysis Methodology

Level of service (LOS) operations at the study intersections were evaluated on a typical weekday (Tuesday, Wednesday, or Thursday) and on a Friday during the AM and PM peak hours using the 6<sup>th</sup> Edition Highway Capacity Manual (HCM-6) methodology. The SYNCHRO 11 software program was utilized as an interface for the HCM-6 method. The SimTraffic application within the SYNCHRO 11 software program was used to conduct the queuing analysis at the study intersections based on the 95<sup>th</sup> percentile queue lengths during the peak hours.

## Existing Roadway and Intersection Conditions

The following is a description of the existing roadways and intersections in the immediate vicinity of the project site:

**Highway 12** is built as a divided State Highway facility oriented in a general east-west direction, with two travel lanes in each direction. On-street parking is prohibited along Highway 12. Pedestrians and bicycles are allowed within the Central County Bikeway that is currently provided along the north side of Highway 12, which also runs along the project frontage. The posted speed limit on Highway 12 is 50 miles per hour (MPH).

**Sunset Avenue** is built as a divided arterial facility oriented in a general north-south direction, with two travel lanes in each direction north of Highway 12. Sunset Avenue transitions to Grizzly Island Road south of Highway 12 in which one travel lane in each direction is provided. On-street parking is prohibited along Sunset Avenue. Sidewalk for pedestrians and dedicated bike lanes are provided on both sides of the road within the project vicinity. The posted speed limit on Sunset Avenue is 35 miles per hour (MPH) north of Highway 12, and the posted speed limit on Grizzly Island Road south of Highway 12 is 25 miles per hour (MPH).

**Highway 12 / Existing Project Driveway Intersection** is currently built along the north side of Highway 12. The southbound approach (Existing Project Driveway) is stop controlled with one travel lane restricted to right-turns only. The westbound approach (Highway 12) is uncontrolled and currently provides two through lanes and one right-turn lane. The eastbound direction of Highway 12 is not part of the intersection and is separated from the westbound lanes by a center median approximately 45 feet in width. Lawler Center Drive is located along the south side of Highway 12 directly across from the existing project driveway and the intersection is also restricted to right-turn in/right-turn out access.

**Highway 12 / Sunset Avenue-Grizzly Island Road Intersection** is currently built as a signalized four-legged intersection. The eastbound approach (Highway 12) currently provides two left-turn lanes, two through lanes, and one right-turn lane. The westbound approach (Highway 12) currently provides one left-turn lane, two through lanes, and one right-turn lane. The northbound approach (Grizzly Island Road) currently provides one left-turn lane, one through lane, and one right-turn lane. The southbound approach (Sunset Avenue) currently provides one left-turn lane, one shared left-turn/through lane, and two right-turn lanes. Protected pedestrian crossings are currently provided across the north, south and east legs of the intersection.

**Sunset Avenue / Sunset Center South Entrance Intersection** is currently built as an unsignalized three-legged right-in/right-out intersection. The westbound approach (Sunset Center South Entrance) is stop controlled and currently provides one right-turn lane. The northbound approach (Sunset Avenue) currently provides one through lane and one shared through/right-turn lane. The southbound approach (Sunset Avenue) currently provides two through lanes.

**Sunset Avenue / Sunset Center Main Entrance Intersection** is currently built as a signalized four-legged intersection. The eastbound approach (Heritage Center Main Entrance) currently provides one shared left/through lane, and one right-turn lane. The westbound approach (Sunset Center Main Entrance) currently provides one left-turn lane, and one shared through/right-turn lane. The northbound approach (Sunset Avenue) currently provides one left-turn lane, one through lane, and one shared through/right-turn lane. The southbound approach (Sunset Avenue) currently provides one left-turn lane, one through lane, and one shared through/right-turn lane. Protected pedestrian crossings are currently provided across all four legs of the intersection.

The existing intersection lane configurations and control types at the study intersections are illustrated in **Exhibit 3** following this letter.

### **Existing Traffic Volumes**

Intersection turning movement counts were collected at the study intersections on Tuesday, February 15, 2022, Friday, July 8, 2022, and Tuesday, July 12, 2022, during the AM and PM peak periods (7:00-9:00 AM and 4:00-6:00 PM). The existing traffic volumes at the study intersections for a typical weekday during the AM and PM peak hours are illustrated in **Exhibit 4** following this letter. The existing traffic volumes at the study intersections for a Friday during the AM and PM peak hours are illustrated in **Exhibit 5** following this letter. The turning movement counts are provided in **Attachment A**.



## Project Trip Generation

The 11<sup>th</sup> Edition ITE Trip Generation Manual (2021) includes a Tractor Supply Store land use (ITE Land Use Code 810), but only the PM peak hour trip rate is provided. It was estimated that a hardware store (ITE Land Use Code 816) would generate a similar number of trips to a tractor supply store, and the daily and AM peak hour trip rates for a hardware store were used to calculate the daily and AM peak hour trip generation for the proposed tractor supply store, which was accepted by City of Suisun City staff. It should be noted that ITE currently does not provide trip rates for a tractor supply store or hardware store on a Friday. Therefore, the project trip generation based on weekday trip rates was also applied to the Friday scenario.

Based on the ITE daily and AM peak hour trip rates for Land Use Code 816 (Hardware Store), and the ITE PM peak hour trip rate for Land Use Code 810 (Tractor Supply Store), the project is estimated to generate 180 Average Daily Trips (ADT), with 19 trips during the AM peak hour (10 inbound/9 outbound) and 31 trips during the PM peak hour (15 inbound/16 outbound) for both a typical weekday and a Friday.

**Table 1** shows the trip generation calculations for the proposed project. **Attachment B** contains the 11<sup>th</sup> Edition ITE Trip Generation Manual (2021) rate sheets.

**Table 1**  
**Project Trip Generation**

Land Use	Unit	Daily (per unit)	AM Peak Hour			PM Peak Hour			
			Total (per unit)	Inbound (% AM)	Outbound (% AM)	Total (per unit)	Inbound (% PM)	Outbound (% PM)	
Trip Generation Rates (ITE)									
Hardware Store (ITE Code 816)	KSF	8.07	T=0.75(x) + 1.92	54%	46%	-	-	-	
Tractor Supply Store (ITE Code 810)	KSF	-	-	-	-	1.40	47%	53%	
Forecast Project Generated Trips									
Land Use	Size	Unit	Daily Trips	AM Peak Hour			PM Peak Hour		
				Total	Inbound	Outbound	Total	Inbound	Outbound
Tractor Supply Store	22.364	KSF	180	19	10	9	31	15	16

SOURCE: ITE 11<sup>th</sup> Edition *Trip Generation Manual* (2021)

KSF = Thousand Square-Feet

## **Project Trip Distribution and Assignment**

Trips were manually distributed from the project site based on the proposed land use and the existing roadway network. It was assumed that 55% of project trips would distribute to/from Highway 12 west of the Highway 12 / Sunset Avenue-Grizzly Island Road intersection, that 30% of the project trips would distribute to/from Highway 12 east of the project site, and that 15% of the project trips would distribute to/from Sunset Avenue north of the Sunset Center retail shopping center.

Due to the existing project driveway on Highway 12 being currently restricted to right-turn in/right-turn out access, it was assumed that 55% of the inbound project trips would enter the project site via the unsignalized south entrance of the Sunset Center retail shopping center on Sunset Avenue, and 13% of the inbound project trips would enter the project site via the signalized main entrance of the Sunset Center retail shopping center on Sunset Avenue. It is also assumed that a small percentage (2%) of the project trips would access the project site via a secondary driveway to the Sunset Center retail shopping center on Merganser Drive. It was assumed that 90% of the outbound project trips would exit the project site at the existing project driveway on Highway 12, which includes 30% of the project trips making a westbound to eastbound U-turn maneuver at the signalized Highway 12 / Sunset Avenue-Grizzly Island Road intersection and the remaining 10% of project trips are anticipated to use the Sunset Center retail shopping center access driveways along Sunset Avenue and Merganser Drive. The project trip distribution is illustrated in **Exhibit 6** following this letter.

Project trips were assigned to the study area roadways based on the project trip generation and the trip distribution percentages shown in Exhibit 5. The project trip assignment is shown in **Exhibit 7** following this letter. The project trips were then added to the existing weekday volumes to develop the existing plus project weekday volumes, which are shown in **Exhibit 8**, and were also added to the existing Friday volumes to develop the existing plus project Friday volumes, which are shown in **Exhibit 9**.

## **Intersection Level of Service Operations Analysis**

Levels of service (LOS) were evaluated at the study intersections during the weekday (Tuesday-Thursday) and Friday AM and PM peak hours under existing and existing plus project conditions. The AM peak hour intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 7:00 AM and 9:00 AM. The PM peak hour intersection analysis evaluates LOS during the hour with the highest vehicular traffic between 4:00 PM and 6:00 PM.

Intersection operations were analyzed with SYNCHRO 11 software (Trafficware) utilizing the methodologies outlined in the *Highway Capacity Manual 6<sup>th</sup> Edition (HCM 6)*. Synchro reports delays, which correspond to a particular LOS, to describe the overall operation of an intersection.

**Table 2** and **Table 3** display the LOS analysis results for the study intersections under existing and existing plus project conditions during the AM and PM peak hours for a typical weekday and for a Friday, respectively. **Attachment C** contains the intersection LOS worksheets.

**Table 2**  
**Weekday Intersection Operations Summary**

Intersection	Control Type	Existing Conditions				Existing Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1. Highway 12 / Existing Project Driveway	OWSC	15.5	C	12.5	B	15.8	C	12.7	B
2. Highway 12 / Sunset Avenue-Grizzly Island Road	Signal	40.4	D	36.7	D	40.9	D	37.0	D
3. Sunset Avenue / Sunset Center South Entrance	OWSC	9.4	A	12.1	B	9.4	A	12.2	B
4. Sunset Avenue / Sunset Center Main Entrance	Signal	10.4	B	12.7	B	10.5	B	12.7	B

## FOOTNOTES:

OWSC = One-Way Stop Control

1. Delay is measured in seconds per vehicle. Delay and LOS being reported for the OWSC control type are taken from the movement with the worst delay.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

As shown in Table 2, the study intersections currently operate at an acceptable LOS D or better during the peak hours on a typical weekday and would continue operating at an acceptable LOS D or better with the addition of project traffic to the existing weekday traffic volumes.

**Table 3**  
**Friday Intersection Operations Summary**

Intersection	Control Type	Existing Conditions				Existing Plus Project			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
		Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS	Delay <sup>1</sup>	LOS
1. Highway 12 / Existing Project Driveway	OWSC	13.3	B	12.4	B	13.4	B	12.6	B
2. Highway 12 / Sunset Avenue-Grizzly Island Road	Signal	23.6	C	35.0	D	23.7	C	35.3	D
3. Sunset Avenue / Sunset Center South Entrance	OWSC	9.6	A	11.5	B	9.6	A	11.6	B
4. Sunset Avenue / Sunset Center Main Entrance	Signal	10.3	B	12.7	B	10.3	B	12.7	B

## FOOTNOTES:

OWSC = One-Way Stop Control

1. Delay is measured in seconds per vehicle. Delay and LOS being reported for the OWSC control type are taken from the movement with the worst delay.

Results calculated utilizing the methodologies described in Chapters 18, 19, and 20 of 6th edition of the Highway Capacity Manual (HCM 6).

As shown in Table 3, the study intersections currently operate at an acceptable LOS D or better during the peak hours on a Friday and would continue operating at an acceptable LOS D or better with the addition of project traffic to the existing Friday traffic volumes.

## Intersection Queuing Analysis

A queuing analysis was conducted during the peak hours under existing and existing plus project conditions to determine if the existing storage lengths of the left-turn and right-turn lanes of the study intersections to which project trips are added can accommodate the existing traffic volumes and the additional trips generated by the proposed project. The queuing analysis results are based on the 95<sup>th</sup> percentile queue lengths in feet for each turning movement or approach.

The SimTraffic application within the SYNCHRO 11 software program was used to conduct the queuing analysis for the study intersections. SimTraffic occasionally produces a 95<sup>th</sup> percentile queue length on a movement that is lower for the "with project" scenario than for the "without project" scenario, particularly at signalized intersections. This is due to the two scenarios being in two separate files, because the random seeding of the network varies with each new simulation run. SimTraffic 95<sup>th</sup> percentile queue lengths at signalized intersections will often be slightly different between two different files, even if the volumes are exactly the same. When this circumstance occurs after running SimTraffic for a "with project" scenario, one can infer that the additional "project" traffic at the intersection would have a negligible effect on queuing.

The results of the queuing analysis under existing and existing plus project conditions for a typical weekday are displayed in **Table 4**. The results of the queuing analysis under existing and existing plus project conditions for Friday are displayed in **Table 5**. **Attachment D** contains the SimTraffic queuing analysis worksheets.

### Weekday Intersection Queuing Analysis Results

As shown in Table 4 for the weekday queuing analysis, the AM peak hour 95<sup>th</sup> percentile queue length of the southbound exclusive left-turn lane (142 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection is currently accommodated within the existing storage length (150 feet), but the PM peak hour 95<sup>th</sup> percentile queue length (190 feet) currently exceeds the existing storage length by 40 feet, or approximately two vehicle lengths. The existing storage length of the adjacent southbound shared left-turn/through lane (385 feet) currently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 182 feet, PM: 201 feet) during the weekday peak hours.

With the addition of project trips to the existing weekday traffic volumes, the 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane (AM: 146 feet, PM: 189 feet) and adjacent southbound shared left-turn/through lane (AM: 180 feet, PM: 197 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection are shown to be approximately the same as existing conditions during the weekday peak hours.

Table 4 shows that the throat length (140 feet) of the existing project driveway on Highway 12 currently accommodates the weekday 95<sup>th</sup> percentile queue lengths (AM: 61 feet, PM: 43 feet) during the peak hours on the southbound right-turn approach at the Highway 12 / Existing Project Driveway intersection during the peak hours. With the addition of project trips to the existing weekday traffic volumes, the Highway 12 existing project driveway throat length would continue to accommodate the 95<sup>th</sup> percentile queue lengths (AM: 131 feet, PM: 46 feet) during the weekday peak hours.

**Table 4**  
**Weekday Queuing Analysis Summary**

Intersection		Lane / Movement	No. of Lanes/ Storage Length (feet)	Existing Conditions				Weekday Existing Plus Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)
1.	Highway 12 / Existing Project Driveway	SB Right	1 / 140' <sup>1</sup>	74	61'	52	43'	82	131'	66	46'
		WB Right	1 / 300'	120	6'	99	-	123	84'	104	-
2.	Highway 12 / Sunset Avenue- Grizzly Island Road	SB Left	1 / 150'	116	142'	154	<b>190'</b>	116	146'	154	<b>189'</b>
		SB Shared Left/Thru	1 / 385' <sup>2</sup>	116	182'	155	201'	116	180'	155	197'
		EB Left	2 / 500'	242	205'	538	442'	248	190'	546	437'
		WB Right	1 / 390'	101	303'	148	127'	101	345'	149	88'
3.	Sunset Avenue / Sunset Center South Entrance	WB Right	1 / 110' <sup>1</sup>	55	50'	62	57'	55	54'	63	55'
4.	Sunset Avenue / Sunset Center Main Entrance	SB Left	1 / 170'	66	64'	91	90'	67	56'	93	88'
		WB Left	1 / 30' <sup>1</sup>	95	<b>56'</b>	104	<b>61'</b>	95	<b>56'</b>	104	<b>62'</b>
		WB Shared Thru/Right	1 / 30' <sup>1</sup>	24	<b>69'</b>	59	<b>101'</b>	24	<b>75'</b>	59	<b>96'</b>

Note: 95th percentile queue lengths shown from SimTraffic queuing analysis reports.

Queue lengths exceeding turn bay storage lengths indicated in **bold**.

<sup>1</sup>Existing driveway throat length.

<sup>2</sup>Storage length is the distance from the stop bar at Sunset Avenue/Highway 12 intersection to the Sunset Avenue/Sunset Center Main Entrance intersection.

**Table 5**  
**Friday Queuing Analysis Summary**

Intersection		Lane / Movement	No. of Lanes/ Storage Length (feet)	Existing Conditions				Existing Plus Project			
				AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
				Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)	Volume	Queue Length (feet)
1.	Highway 12 / Existing Project Driveway	SB Right	1 / 140' <sup>1</sup>	62	44'	71	49'	70	49'	85	53'
		WB Right	1 / 300'	120	-	128	-	123	4'	133	-
2.	Highway 12 / Sunset Avenue- Grizzly Island Road	SB Left	1 / 150'	75	77'	193	<b>196'</b>	75	92'	193	<b>192'</b>
		SB Shared Left/Thru	1 / 385' <sup>2</sup>	75	123'	193	208'	75	132'	193	203'
		EB Left	2 / 500'	204	147'	472	344'	210	162'	480	407'
		WB Right	1 / 390'	79	83'	136	66'	79	51'	137	70'
3.	Sunset Avenue / Sunset Center South Entrance	WB Right	1 / 110' <sup>1</sup>	50	51'	60	61'	50	50'	61	58'
4.	Sunset Avenue / Sunset Center Main Entrance	SB Left	1 / 170'	47	55'	108	116'	48	54'	110	96'
		WB Left	1 / 30' <sup>1</sup>	82	<b>56'</b>	117	<b>63'</b>	82	<b>57'</b>	117	<b>62'</b>
		WB Shared Thru/Right	1 / 30' <sup>1</sup>	32	<b>67'</b>	67	<b>145'</b>	32	<b>66'</b>	67	<b>115'</b>

Note: 95th percentile queue lengths shown from SimTraffic queuing analysis reports.

Queue lengths exceeding turn bay storage lengths indicated in **bold**.

<sup>1</sup>Existing driveway throat length.

<sup>2</sup>Storage length is the distance from the stop bar at Sunset Avenue/Highway 12 intersection to the Sunset Avenue/Sunset Center Main Entrance intersection.

Table 4 also shows that the weekday AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 56 feet, PM: 61 feet) and shared thru/right-turn lane (AM: 69 feet, PM: 101 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection both currently exceed the existing driveway throat length (30 feet). With the addition of project trips to the existing weekday traffic volumes, the AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 56 feet, PM: 62 feet) and shared thru/right-turn lane (AM: 75 feet, PM: 96 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection are anticipated to remain approximately the same as existing weekday conditions. It should be noted that vehicles are able to stack into the parking aisle that extends from the driveway entrance into the Sunset Center retail shopping center. This parking aisle provides approximately 240' of space to sufficiently accommodate the 95<sup>th</sup> percentile queue lengths.

Lastly, as shown in Table 4, the existing storage length (170 feet) of the southbound left-turn lane of the Sunset Avenue / Sunset Center Main Entrance driveway intersection sufficiently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 56 feet, PM: 88 feet) during the weekday peak hours under existing plus project conditions.

#### Friday Intersection Queuing Analysis

Table 5 shows that for the Friday queuing analysis, the AM peak hour 95<sup>th</sup> percentile queue length of the southbound exclusive left-turn lane (77 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection is currently accommodated within the existing storage length (150 feet), but the PM peak hour 95<sup>th</sup> percentile queue length (196 feet) currently exceeds the existing storage length by 46 feet, or approximately two vehicle lengths. The existing storage length of the adjacent southbound shared left-turn/through lane (385 feet) currently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 123 feet, PM: 208 feet) during the Friday peak hours.

With the addition of project trips to the existing Friday traffic volumes, the 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane (AM: 92 feet, PM: 192 feet) and adjacent southbound shared left-turn/through lane (AM: 132 feet, PM: 203 feet) at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection are shown to be approximately the same as or slightly longer than existing conditions during the Friday peak hours.

Table 5 shows that the throat length (140 feet) of the existing project driveway on Highway 12 currently accommodates the Friday 95<sup>th</sup> percentile queue lengths (AM: 44 feet, PM: 49 feet) during the peak hours on the southbound right-turn approach at the Highway 12 / Existing Project Driveway intersection during the peak hours. With the addition of project trips to the existing Friday traffic volumes, the Highway 12 existing project driveway throat length would continue to accommodate the 95<sup>th</sup> percentile queue lengths (AM: 49 feet, PM: 53 feet) during the Friday peak hours.

Table 5 also shows that the Friday AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 56 feet, PM: 63 feet) and shared thru/right-turn lane (AM: 67 feet, PM: 145 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection both currently exceed the existing driveway throat length (30 feet). With the addition of project trips to the existing Friday traffic volumes, the AM and PM peak hour 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane (AM: 57 feet, PM: 62 feet) and shared thru/right-turn lane (AM: 66 feet, PM: 115 feet) at the Sunset Avenue / Sunset Center Main Entrance intersection are anticipated to remain approximately the same as existing Friday conditions. It should be noted that vehicles are able to stack into the parking aisle that extends from the driveway entrance into the Sunset Center retail shopping center. This parking aisle provides approximately 240' of space to sufficiently accommodate the 95<sup>th</sup> percentile queue lengths.

Lastly, as shown in Table 5, the existing storage length (170 feet) of the southbound left-turn lane of the Sunset Avenue / Sunset Center Main Entrance driveway intersection sufficiently accommodates the 95<sup>th</sup> percentile queue lengths (AM: 54 feet, PM: 96 feet) during the Friday peak hours under existing plus project conditions.

#### Intersection Queuing Analysis Summary

In summary, although the weekday and Friday PM peak hour 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection currently exceeds the existing storage length (150 feet), the analysis results show that the addition of project traffic to the existing weekday and Friday traffic volumes in the southbound left-turn lane and adjacent shared left-turn/through lane would have a negligible effect on queuing at the southbound approach of the intersection.

In addition, the weekday and Friday analysis results show that the addition of project traffic to the existing traffic volumes in the westbound left-turn lane and shared thru/right-turn lane at the Sunset Avenue / Sunset Center Main Entrance intersection would have a negligible effect on queuing at the westbound driveway approach of the intersection.

#### **Vehicle Miles Traveled (VMT) Screening Assessment**

As required by CEQA, a Vehicles Miles Traveled (VMT) screening assessment was conducted for the proposed project in accordance with the City of Suisun City Resolution No. 2020-122, which defers to the VMT screening criteria that is suggested in the Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 28, 2018).

The VMT screening criteria in the OPR *Technical Advisory* that would be applicable to the proposed project is the Local-Serving Retail screening criteria for retail uses. The OPR *Technical Advisory* indicates that local-serving retail developments typically have a building or store size under 50,000 square-feet and are generally presumed to have a less than significant impact.

The size of the proposed tractor supply store is 22,364 square-feet; therefore the size of the proposed project does not exceed the Local-Serving Retail screening threshold of 50,000 square-feet and is presumed to have a less than significant impact per CEQA.

#### **Recommendations/Conclusions**

The findings of this focused traffic study showed that the proposed project is anticipated to generate approximately 180 ADT, with 19 trips during the AM peak hour (10 inbound/9 outbound) and 31 trips during the PM peak hour (15 inbound/16 outbound) on a typical weekday.

The findings of the intersection level of service analysis showed that the study intersections currently operate at an acceptable LOS D or better during the peak hours, and would continue operating at an acceptable LOS D or better with the addition of project traffic to the existing traffic volumes for both a typical weekday and on Friday.

The findings of the intersection queuing analysis showed that although the weekday and Friday PM peak hour 95<sup>th</sup> percentile queue lengths of the southbound exclusive left-turn lane at the Highway 12 / Sunset Avenue-Grizzly Island Road intersection currently exceeds the existing storage length (150 feet), the addition of project traffic to the existing weekday and Friday traffic volumes would have a negligible effect on queuing at the southbound approach of the intersection.



The intersection queuing analysis findings also show that although the 95<sup>th</sup> percentile queue lengths of the westbound left-turn lane and shared thru/right-turn lane at the Sunset Avenue / Sunset Center Main Entrance intersection currently exceed the existing driveway throat length (30 feet) during the AM and PM peak hours for both a typical weekday and Friday, the addition of project traffic to the existing traffic volumes would have a negligible effect on queuing at the westbound driveway approach of the intersection. It should be noted that vehicles are able to stack into the parking aisle that extends from the driveway entrance into the Sunset Center retail shopping center. This parking aisle provides approximately 240' of space to sufficiently accommodate the 95<sup>th</sup> percentile queue lengths.

The findings of the VMT screening assessment showed that the proposed project would not exceed OPR's recommended screening threshold of 50,000 square-feet to be considered a Local-Serving Retail use, and therefore the project is presumed to have a less than significant impact per CEQA.

Should you have any questions, please contact either David Mizell or me at (619) 291-0707.

Sincerely,

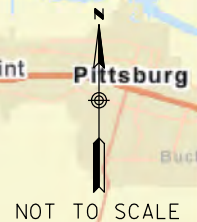
RICK ENGINEERING COMPANY

A handwritten signature in black ink, appearing to read "B. R. Stephenson", with a long horizontal flourish extending to the right.

Brian R. Stephenson, PE, TE, PTOE  
Associate Principal

K:\Files\19583\text\19583.003.TractorSupplyTrafficAssessment\_2023-0118.doc

Attachments



# EXHIBIT 1

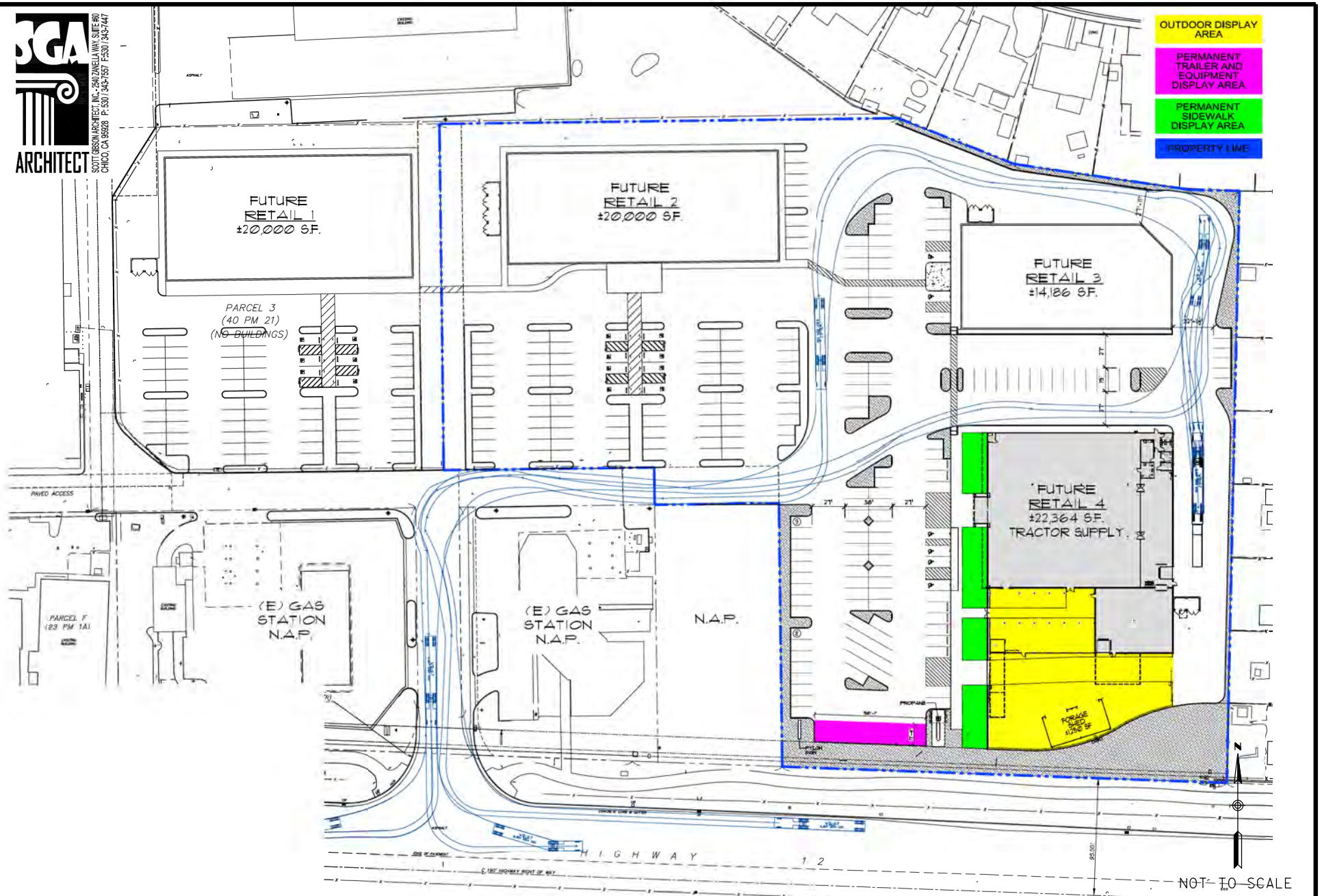
## PROJECT VICINITY MAP

SUISUN CITY TRACTOR SUPPLY





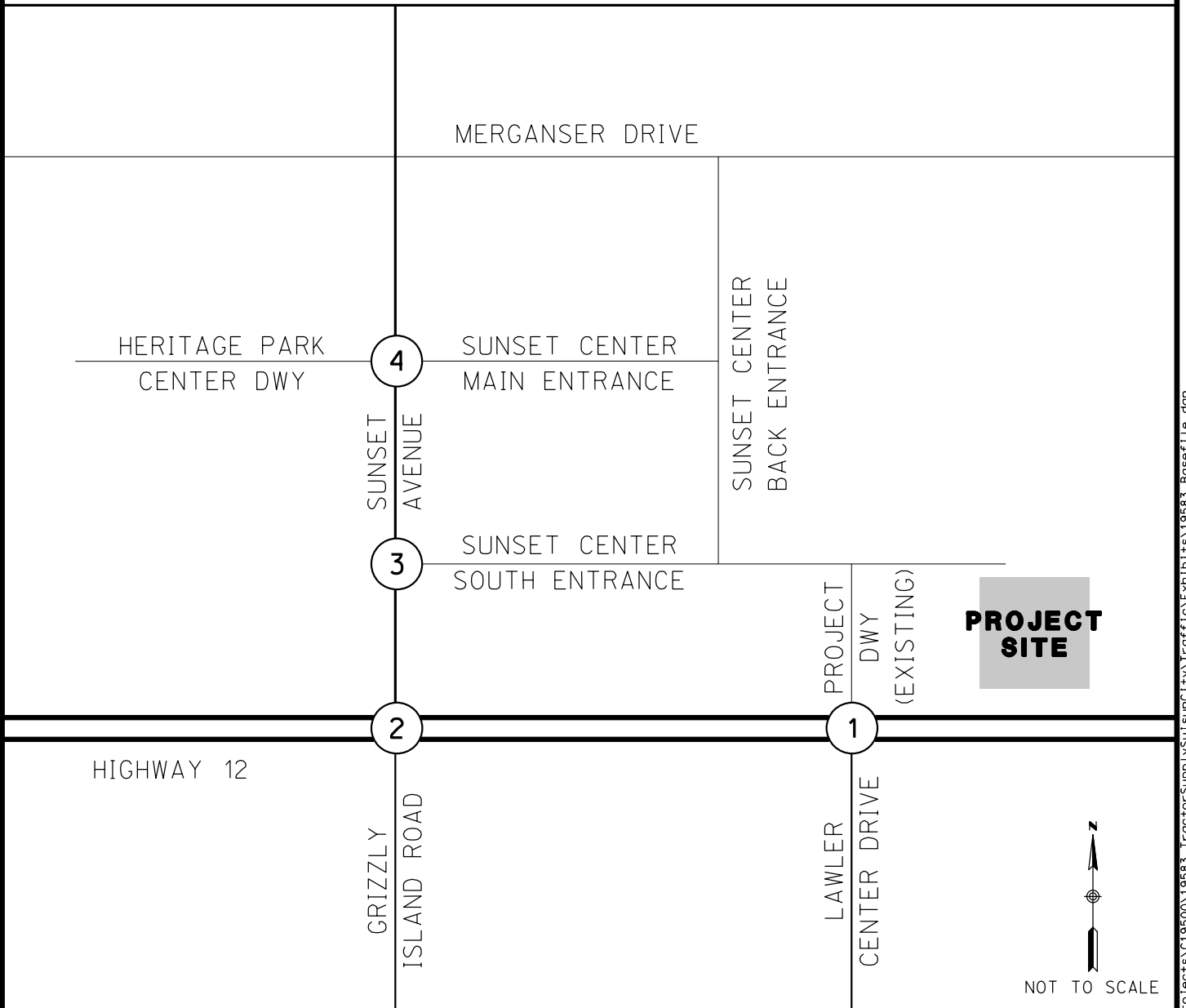
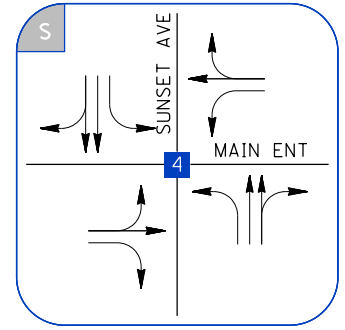
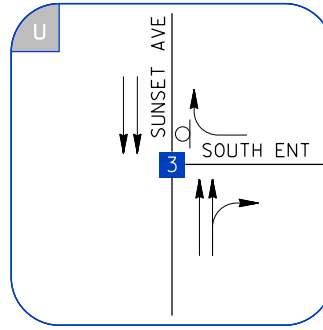
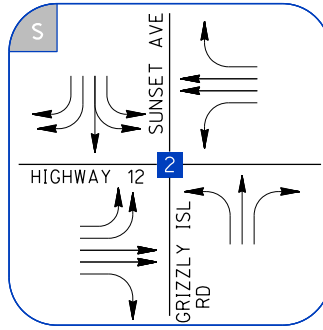
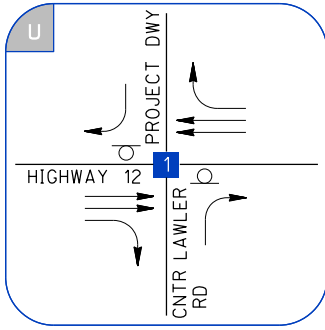
SCOTT GIBSON ARCHITECT, INC. 340 ANSELMI WAY, SUITE 400  
CHICO, CA 95926 P: 530/343-5571 F: 530/343-7447



**RICK**  
ENGINEERING COMPANY

## EXHIBIT 2 PROJECT SITE PLAN

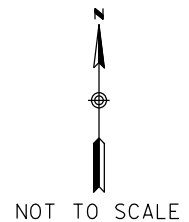
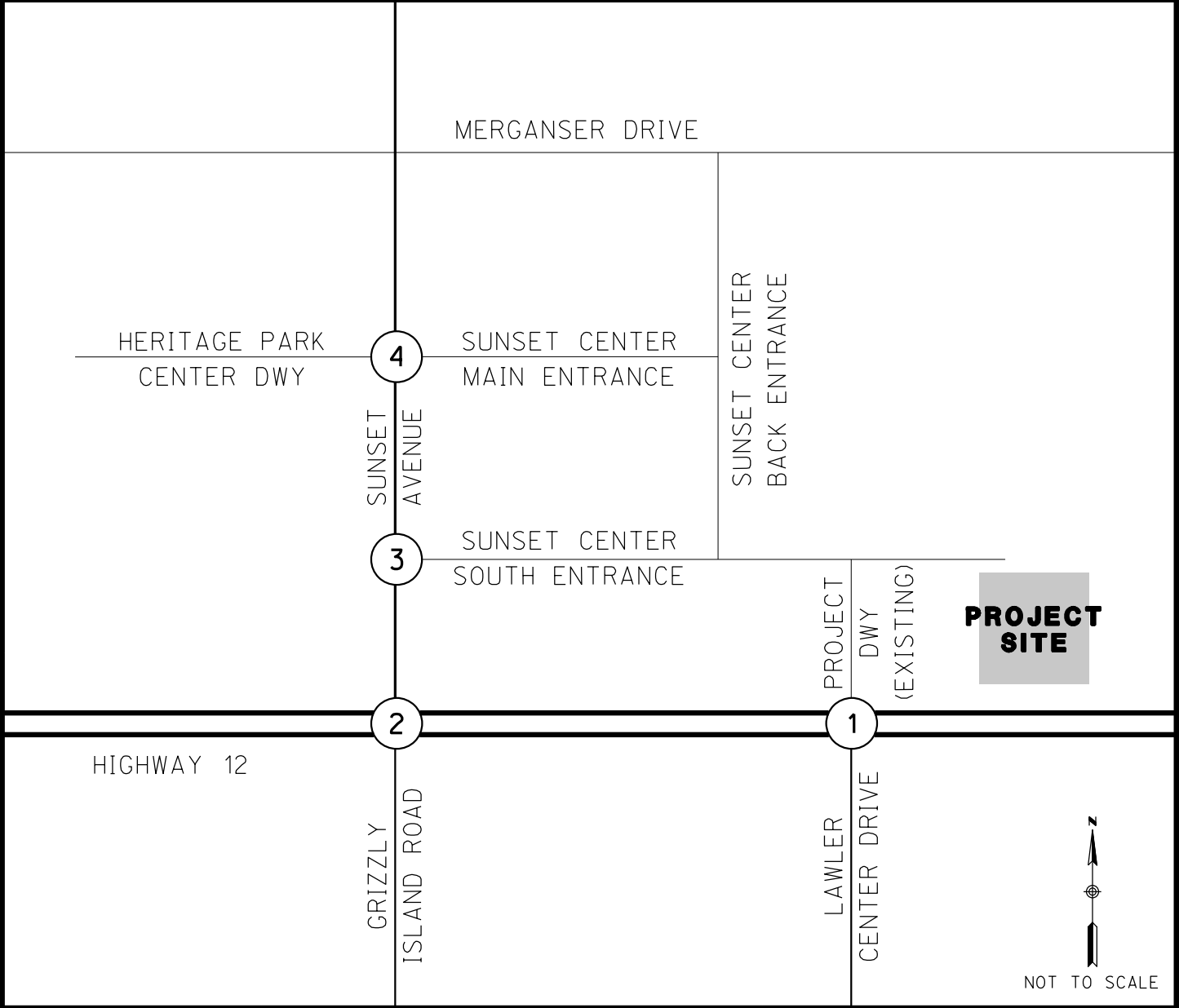
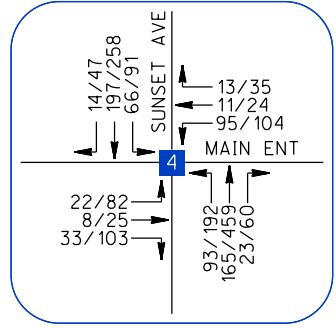
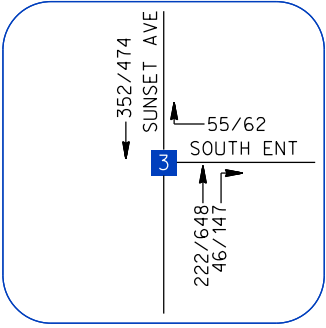
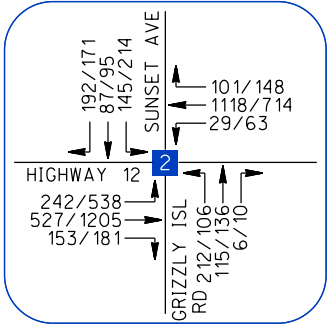
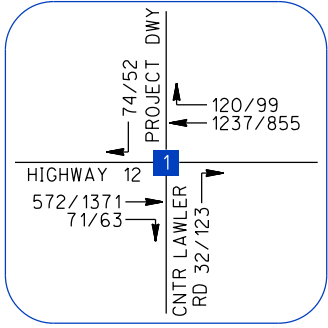
SUISUN CITY TRACTOR SUPPLY



# **EXHIBIT 3** EXISTING TRANSPORTATION CONDITIONS SUISUN CITY TRACTOR SUPPLY

## **LEGEND**

- =SIGNALIZED
- =UNSIGNALIZED
- =STOP CONTROLLED
- =LANE GEOMETRY



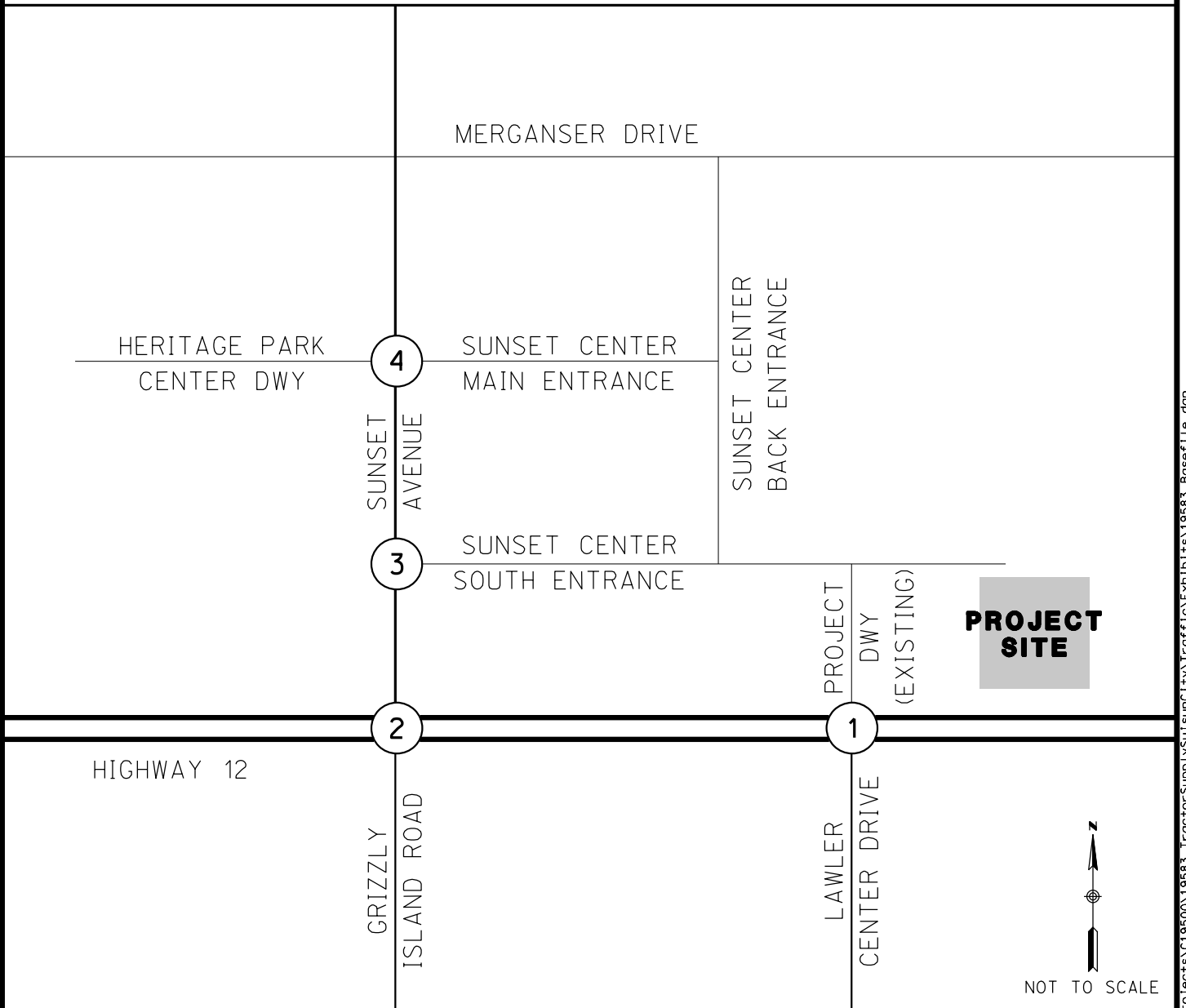
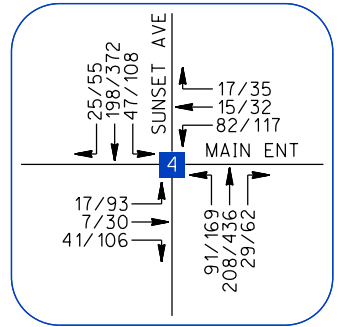
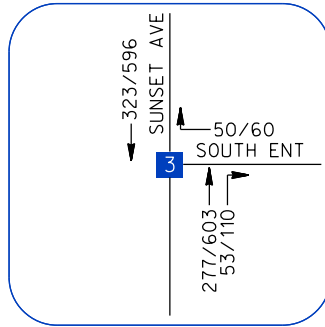
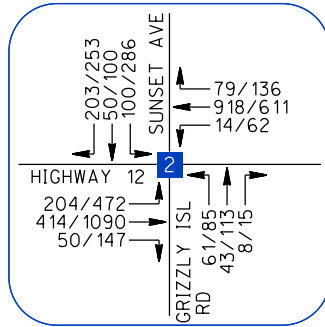
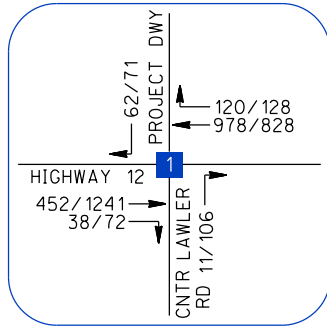
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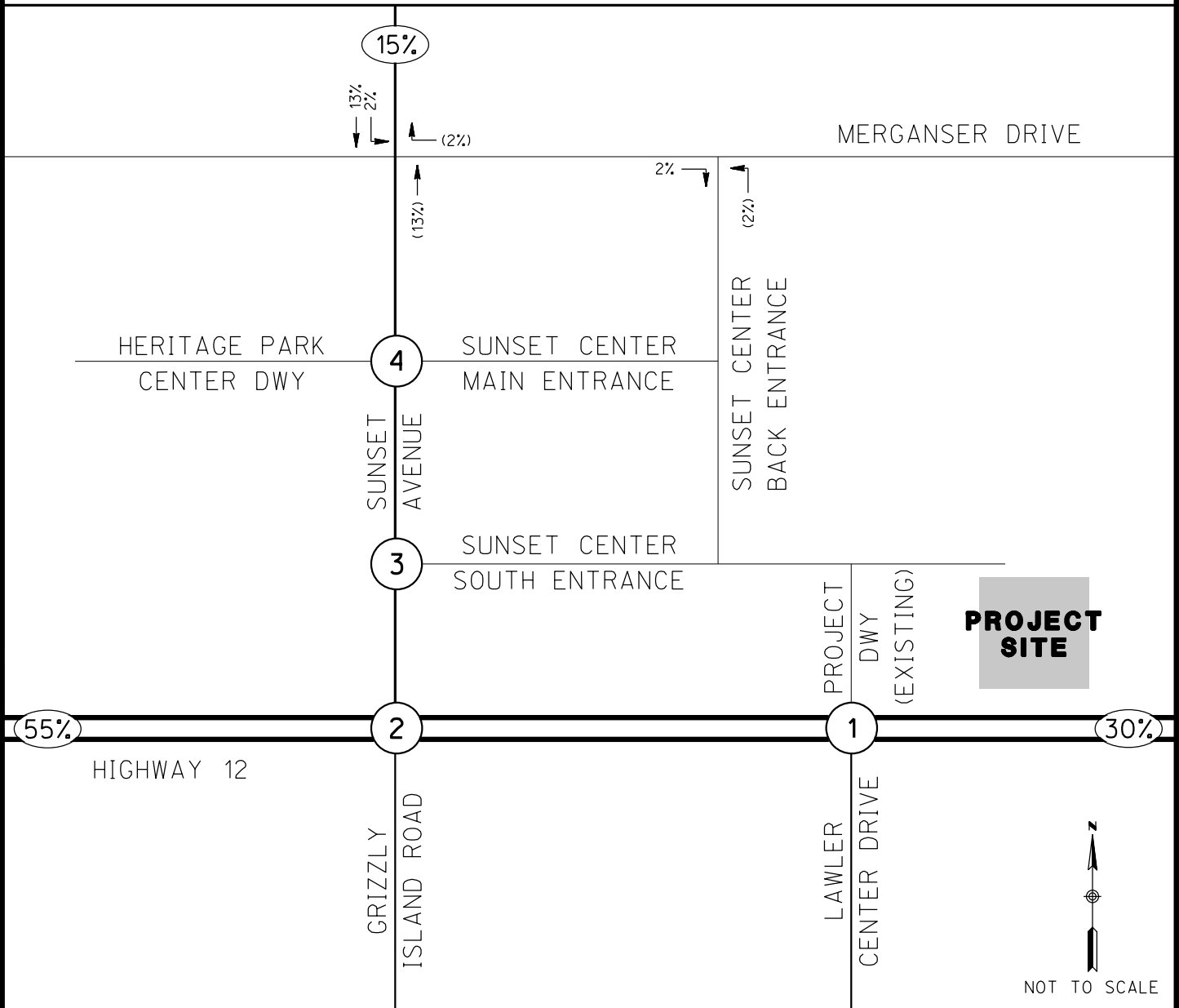
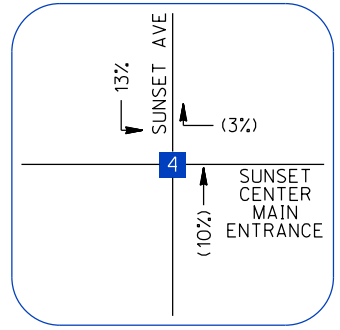
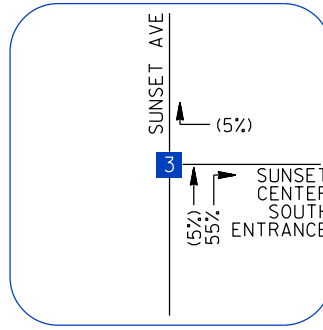
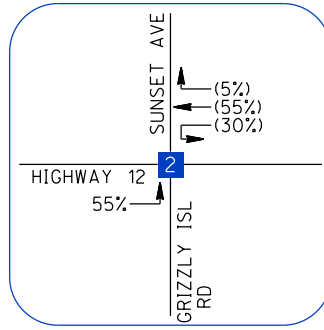
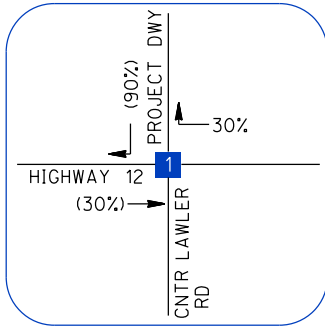
EXISTING TRAFFIC VOLUMES - WEEKDAY

SUISUN CITY TRACTOR SUPPLY

**LEGEND**

XX/XX=AM/PM PEAK HOUR VOLUMES





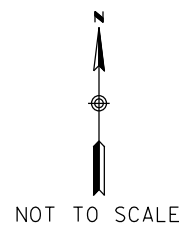
## EXHIBIT 6

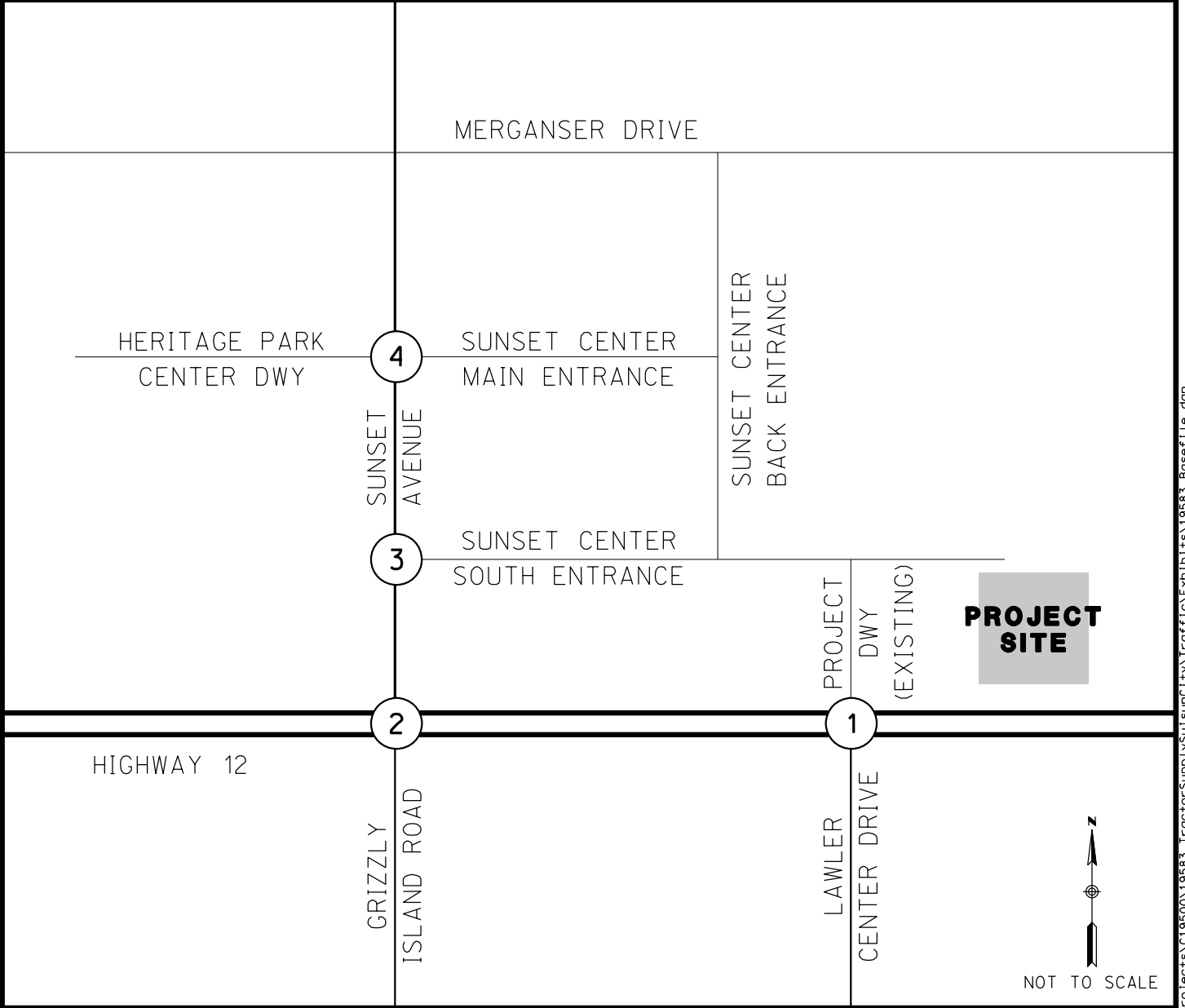
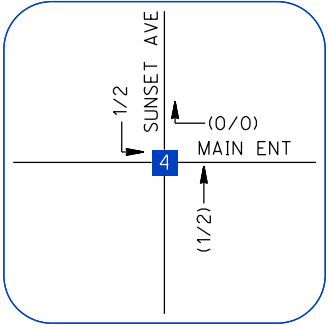
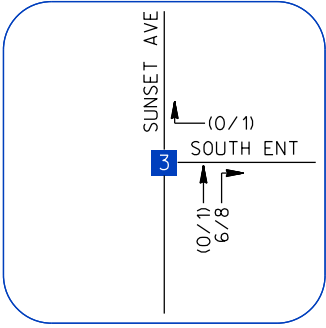
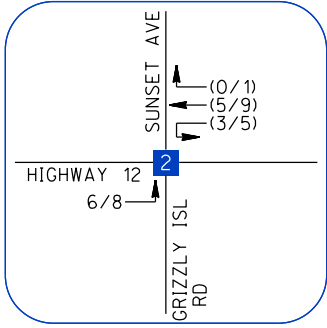
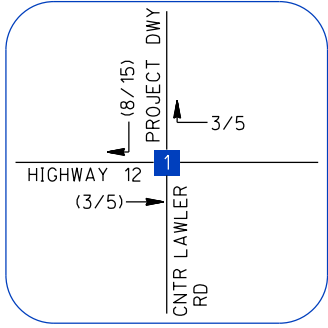
PROJECT TRIP DISTRIBUTION

SUISUN CITY TRACTOR SUPPLY

### LEGEND

- XX%** = DISTRIBUTION PERCENTAGE
- XX% = INBOUND DISTRIBUTION
- (XX%) = OUTBOUND DISTRIBUTION





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# EXHIBIT 7

## PROJECT TRIP ASSIGNMENT

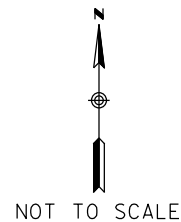
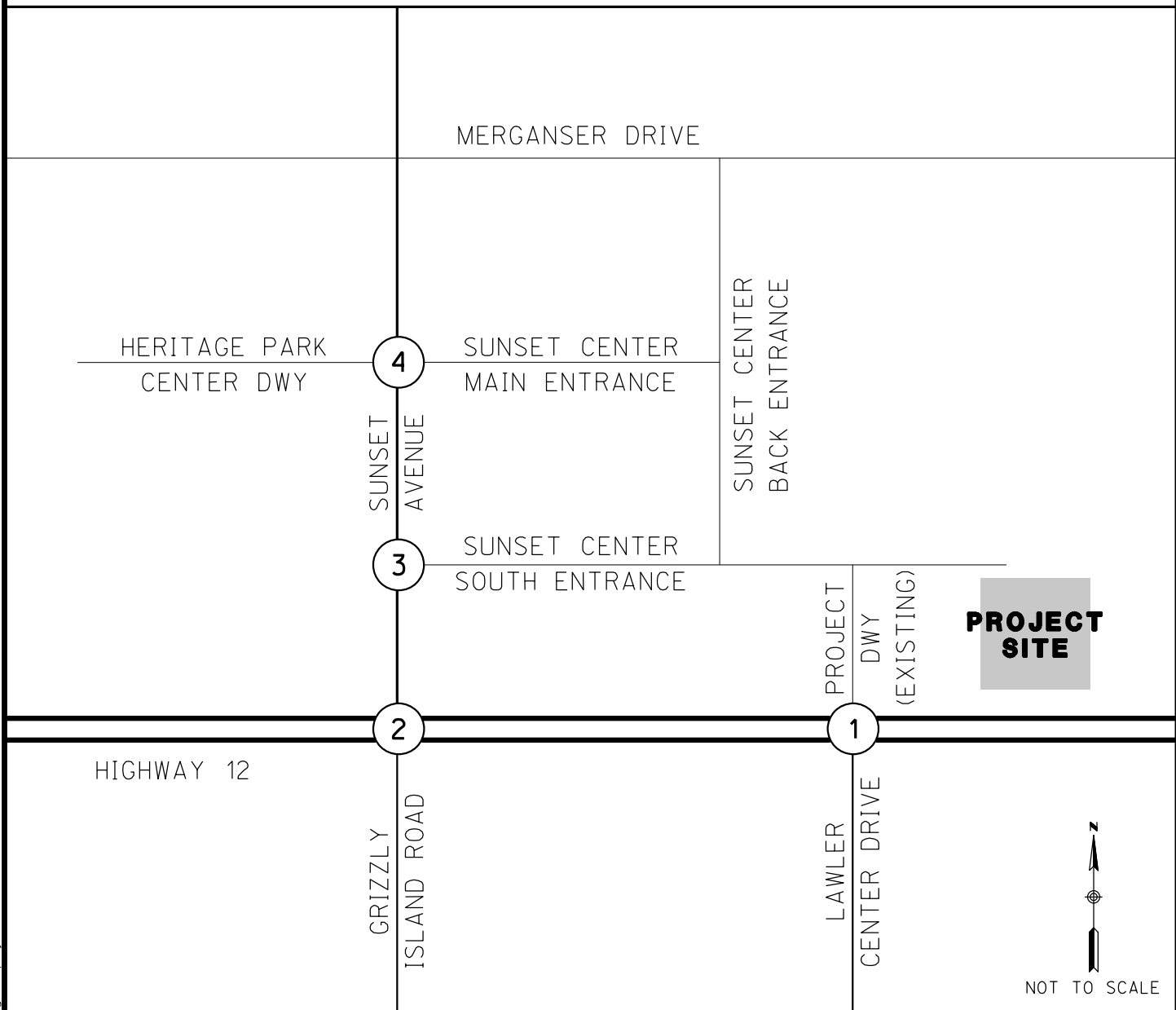
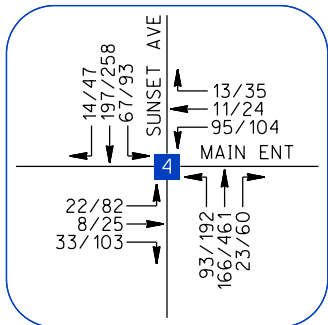
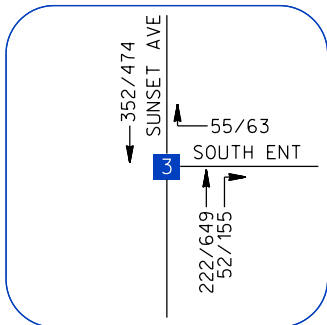
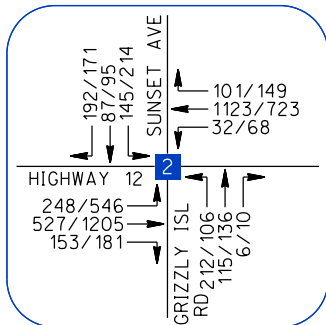
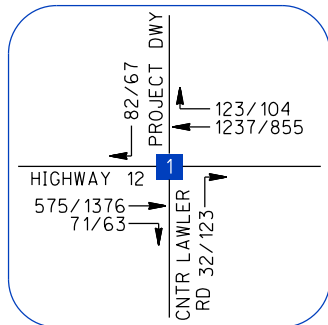
### SUISUN CITY TRACTOR SUPPLY

#### LEGEND

- XX/XX=INBOUND AM/PM PEAK HOUR TRIPS
- (XX/XX)=OUTBOUND AM/PM PEAK HOUR TRIPS

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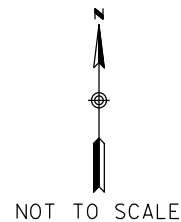
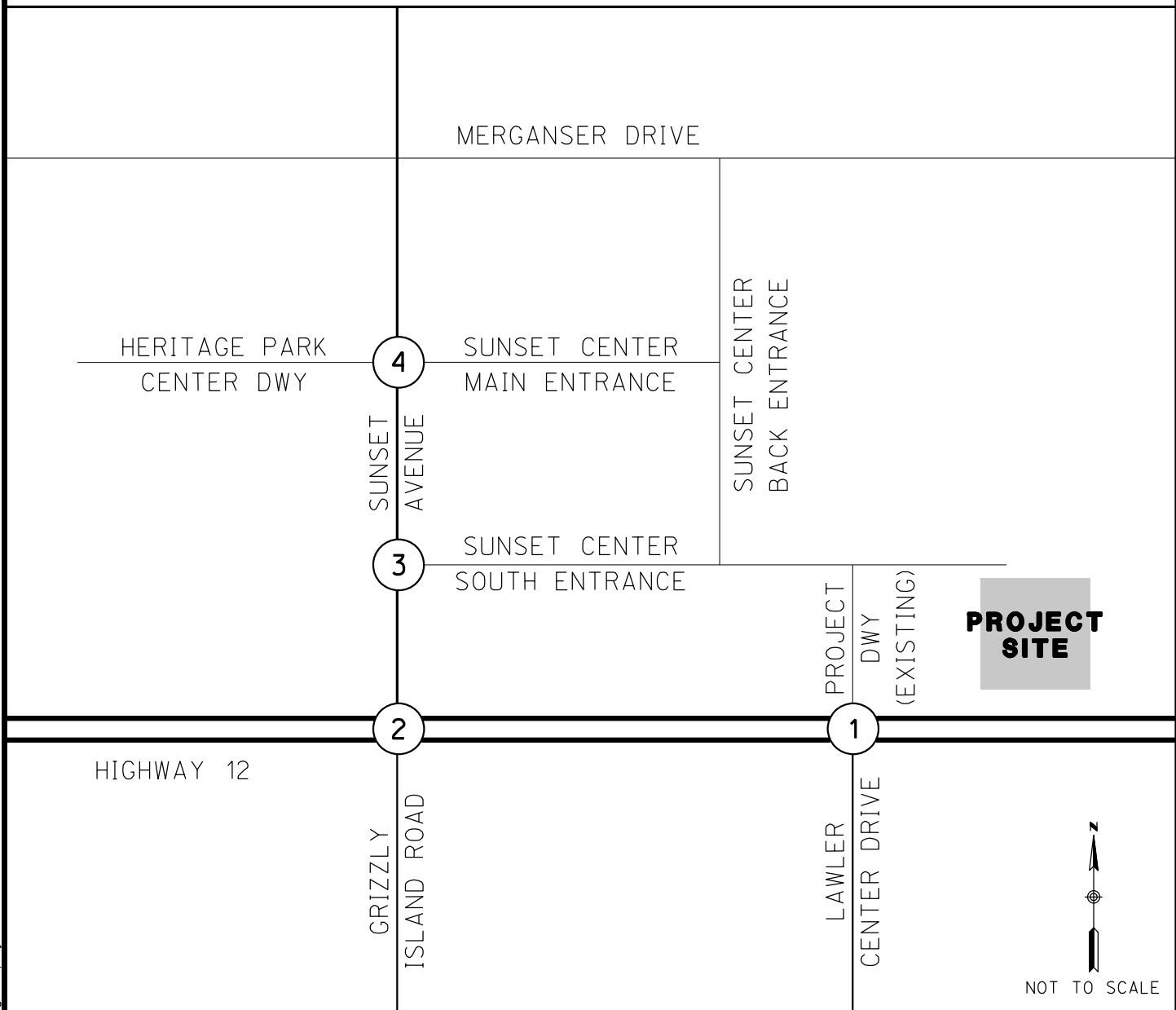
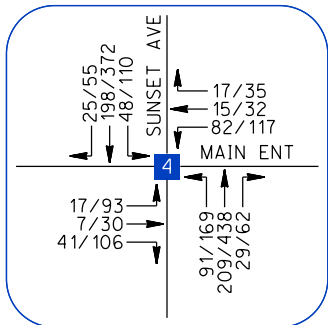
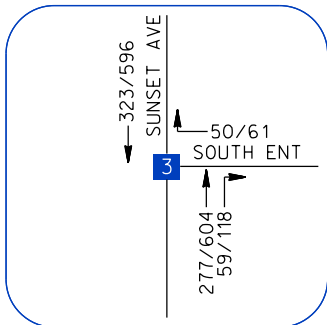
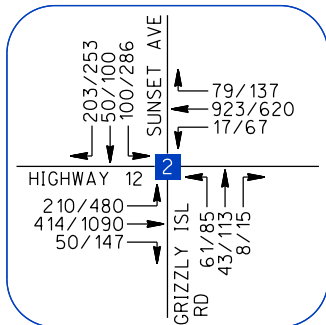
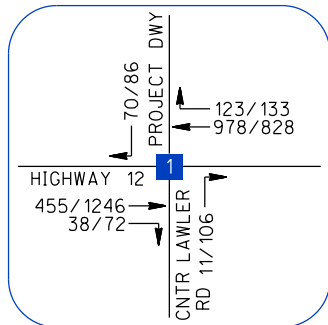
## EXHIBIT 8

EXISTING PLUS PROJECT TRAFFIC VOLUMES - WEEKDAY

SUISUN CITY TRACTOR SUPPLY

### LEGEND

XX/XX=AM/PM PEAK  
HOUR VOLUMES



## EXHIBIT 9

EXISTING PLUS PROJECT TRAFFIC VOLUMES - FRIDAY

SUISUN CITY TRACTOR SUPPLY

### LEGEND

XX/XX=AM/PM PEAK  
HOUR VOLUMES

# **ATTACHMENT A**

## Weekday Traffic Counts

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Gas Station Dwy & Hwy 12  
**City:** Suisun City  
**Control:** 2-Way Stop(NB/SB)

**Project ID:** 22-080045-002  
**Date:** 2/15/2022

## Data - Total

NS/EW Streets:	Gas Station Dwy				Gas Station Dwy				Hwy 12				Hwy 12				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	2 ET	1 ER	0 EU	0 WL	2 WT	1 WR	0 WU	
7:00 AM	0	0	1	0	0	0	19	0	0	132	5	0	0	299	25	0	481
7:15 AM	0	0	9	0	0	0	8	0	0	115	6	0	0	359	27	0	524
7:30 AM	0	0	9	0	0	0	17	0	0	122	12	0	0	342	25	0	527
7:45 AM	0	0	8	0	0	0	16	0	0	128	12	0	0	334	33	0	531
8:00 AM	0	0	11	0	0	0	20	0	0	152	27	0	0	269	35	0	514
8:15 AM	0	0	4	0	0	0	21	0	0	170	20	0	0	292	27	0	534
8:30 AM	0	0	3	0	0	0	20	0	0	161	5	0	0	276	29	0	494
8:45 AM	0	0	9	0	0	0	18	0	0	150	12	0	0	251	30	0	470
<b>TOTAL VOLUMES :</b>	0	0	54	0	0	0	139	0	0	1130	99	0	0	2422	231	0	4075
<b>APPROACH %'s :</b>	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	91.94%	8.06%	0.00%	0.00%	91.29%	8.71%	0.00%	
<b>PEAK HR :</b>	07:30 AM - 08:30 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	32	0	0	0	74	0	0	572	71	0	0	1237	120	0	2106
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.727	0.000	0.000	0.000	0.881	0.000	0.000	0.841	0.657	0.000	0.000	0.904	0.857	0.000	0.986
	0.727				0.881				0.846				0.924				

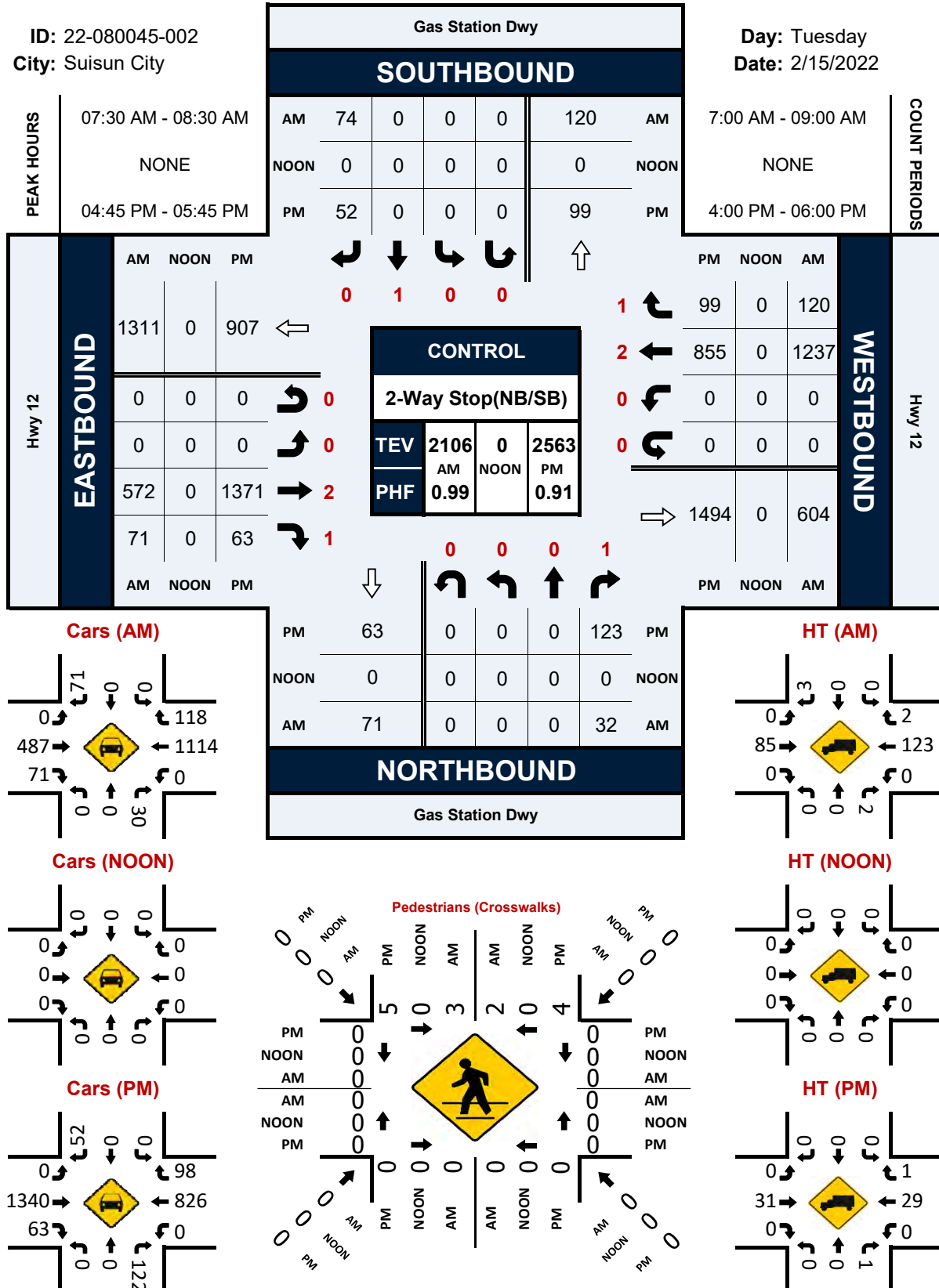
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	2 ET	1 ER	0 EU	0 WL	2 WT	1 WR	0 WU	
4:00 PM	0	0	20	0	0	0	13	0	0	335	15	0	0	233	22	0	638
4:15 PM	0	0	29	0	0	0	13	0	0	312	21	0	0	240	30	0	645
4:30 PM	0	0	36	0	0	0	8	0	0	307	21	0	0	209	24	0	605
4:45 PM	0	0	17	0	0	0	16	0	0	340	16	0	0	190	28	0	607
5:00 PM	0	0	42	0	0	0	13	0	0	313	16	0	0	219	24	0	627
5:15 PM	0	0	44	0	0	0	12	0	0	369	19	0	0	237	27	0	708
5:30 PM	0	0	20	0	0	0	11	0	0	349	12	0	0	209	20	0	621
5:45 PM	0	0	30	0	0	0	15	0	0	316	17	0	0	188	19	0	585
<b>TOTAL VOLUMES :</b>	0	0	238	0	0	0	101	0	0	2641	137	0	0	1725	194	0	5036
<b>APPROACH %'s :</b>	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	95.07%	4.93%	0.00%	0.00%	89.89%	10.11%	0.00%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	0	0	123	0	0	0	52	0	0	1371	63	0	0	855	99	0	2563
<b>PEAK HR FACTOR :</b>	0.000	0.000	0.699	0.000	0.000	0.000	0.813	0.000	0.000	0.929	0.829	0.000	0.000	0.902	0.884	0.000	0.905
	0.699				0.813				0.924				0.903				

## Gas Station Dwy &amp; Hwy 12

## Peak Hour Turning Movement Count

ID: 22-080045-002  
City: Suisun City

Day: Tuesday  
Date: 2/15/2022



# National Data & Surveying ServicesIntersection Turning Movement Count

**Location:** Sunset Ave/Grizzly Island Rd & Hwy 12  
**City:** Suisun City  
**Control:** Signalized

**Project ID:** 22-080045-001  
**Date:** 2/15/2022

## Data - Total

NS/EW Streets:	Sunset Ave/Grizzly Island Rd				Sunset Ave/Grizzly Island Rd				Hwy 12				Hwy 12				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	1 NR	0 NU	1.5 SL	0.5 ST	2 SR	0 SU	2 EL	2 ET	1 ER	0 EU	1 WL	2 WT	1 WR	0 WU	
7:00 AM	15	6	2	0	23	7	34	0	18	120	7	0	4	294	15	0	545
7:15 AM	18	8	2	0	22	7	75	0	36	93	14	0	8	332	23	0	638
7:30 AM	16	11	2	0	23	9	47	0	39	105	17	0	3	341	24	0	637
7:45 AM	33	12	1	0	45	25	52	0	45	115	36	0	4	313	17	0	698
8:00 AM	64	33	1	0	41	27	42	0	59	119	56	0	9	265	29	0	745
8:15 AM	74	47	3	0	39	26	55	0	68	158	43	0	12	269	27	0	821
8:30 AM	41	23	1	0	20	9	43	0	68	135	18	2	3	271	28	1	663
8:45 AM	18	12	1	0	31	13	37	0	59	136	22	2	4	225	29	2	591
<b>TOTAL VOLUMES :</b>	NL 279	NT 152	NR 13	NU 0	SL 244	ST 123	SR 385	SU 0	EL 392	ET 981	ER 213	EU 4	WL 47	WT 2310	WR 192	WU 3	<b>TOTAL</b> 5338
<b>APPROACH %'s :</b>	62.84%	34.23%	2.93%	0.00%	32.45%	16.36%	51.20%	0.00%	24.65%	61.70%	13.40%	0.25%	1.84%	90.52%	7.52%	0.12%	
<b>PEAK HR :</b>	07:45 AM - 08:45 AM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	212	115	6	0	145	87	192	0	240	527	153	2	28	1118	101	1	2927
<b>PEAK HR FACTOR :</b>	0.716	0.612	0.500	0.000	0.806	0.806	0.873	0.000	0.882	0.834	0.683	0.250	0.583	0.893	0.871	0.250	0.891
	0.671				0.869				0.857				0.934				

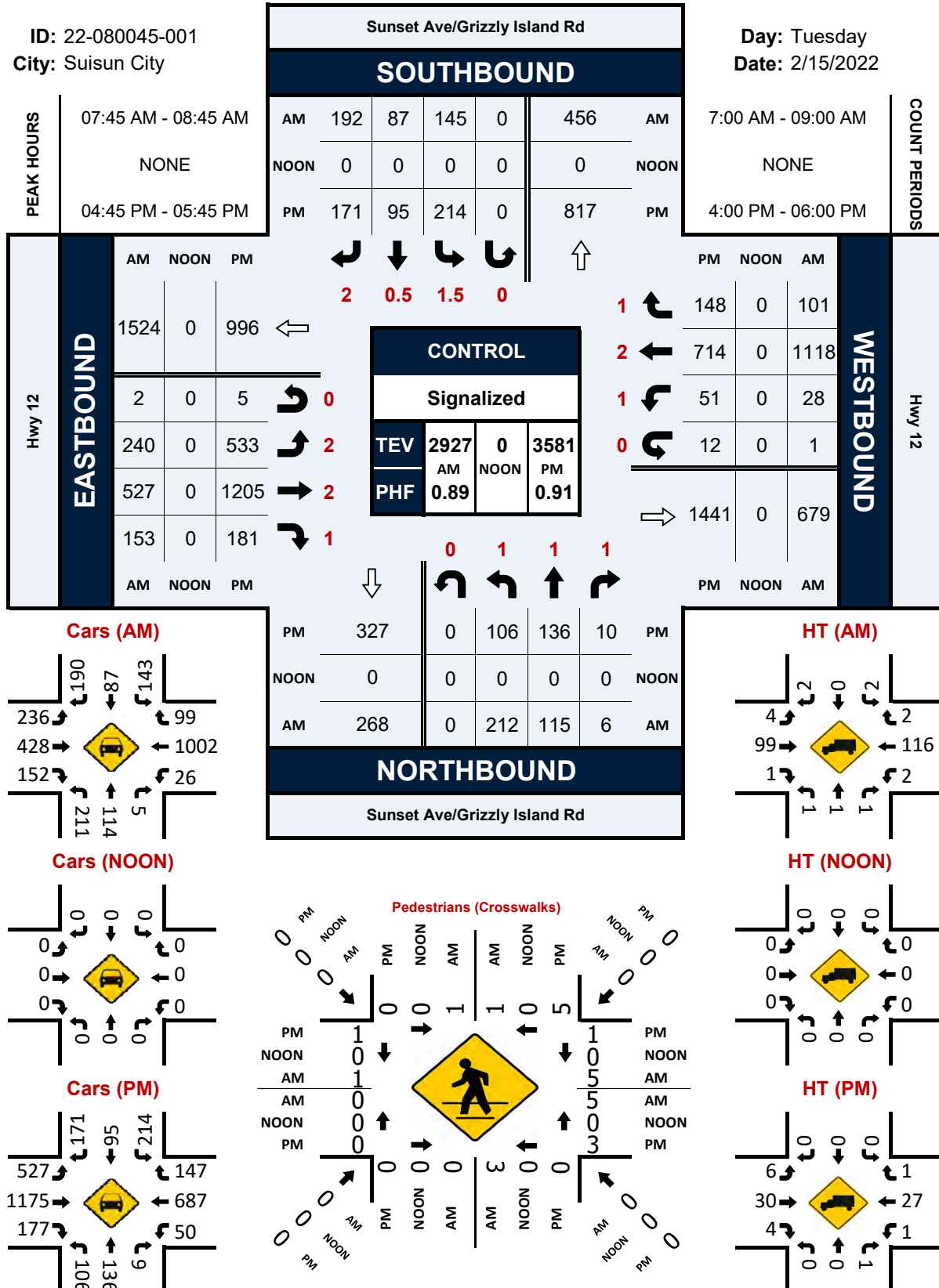
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	1 NR	0 NU	1.5 SL	0.5 ST	2 SR	0 SU	2 EL	2 ET	1 ER	0 EU	1 WL	2 WT	1 WR	0 WU	
4:00 PM	23	24	7	0	41	21	45	0	115	291	29	1	11	188	34	5	835
4:15 PM	26	19	0	0	42	14	36	0	109	291	31	3	9	191	57	3	831
4:30 PM	28	30	3	0	47	20	47	0	93	268	46	1	6	142	42	7	780
4:45 PM	21	29	4	0	57	29	34	0	125	297	34	0	15	175	33	2	855
5:00 PM	25	26	2	0	35	16	44	0	123	292	43	1	17	168	43	4	839
5:15 PM	34	35	3	0	59	30	45	0	155	317	58	2	10	200	38	2	988
5:30 PM	26	46	1	0	63	20	48	0	130	299	46	2	9	171	34	4	899
5:45 PM	22	23	0	0	48	18	51	0	120	278	33	5	16	146	41	2	803
<b>TOTAL VOLUMES :</b>	NL 205	NT 232	NR 20	NU 0	SL 392	ST 168	SR 350	SU 0	EL 970	ET 2333	ER 320	EU 15	WL 93	WT 1381	WR 322	WU 29	<b>TOTAL</b> 6830
<b>APPROACH %'s :</b>	44.86%	50.77%	4.38%	0.00%	43.08%	18.46%	38.46%	0.00%	26.66%	64.13%	8.80%	0.41%	5.10%	75.67%	17.64%	1.59%	
<b>PEAK HR :</b>	04:45 PM - 05:45 PM																<b>TOTAL</b>
<b>PEAK HR VOL :</b>	106	136	10	0	214	95	171	0	533	1205	181	5	51	714	148	12	3581
<b>PEAK HR FACTOR :</b>	0.779	0.739	0.625	0.000	0.849	0.792	0.891	0.000	0.860	0.950	0.780	0.625	0.750	0.893	0.860	0.750	0.906
	0.863				0.896				0.904				0.925				

# Sunset Ave/Grizzly Island Rd & Hwy 12

## Peak Hour Turning Movement Count

ID: 22-080045-001  
City: Suisun City

Day: Tuesday  
Date: 2/15/2022





# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Sunset Ave & Sunset Center South Entrance  
**City:** Suisun City  
**Control:** 2-Way Stop(EB/WB)

**Project ID:** 22-080207-002  
**Date:** 7/12/2022

## Data - Total

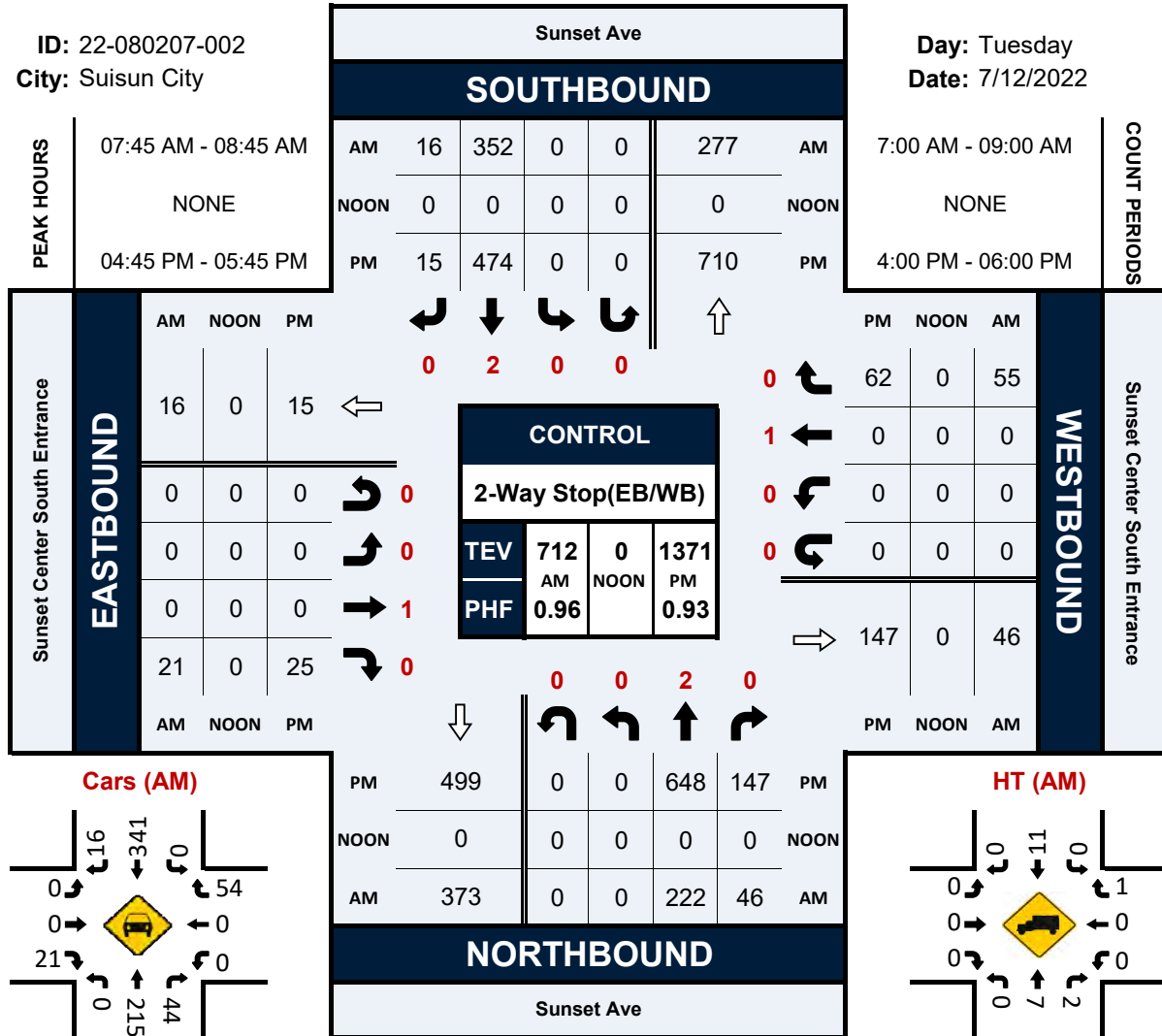
NS/EW Streets:	Sunset Ave				Sunset Ave				Sunset Center South Entrance				Sunset Center South Entrance					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	7:00 AM	0	52	12	0	0	73	7	0	0	0	6	0	0	0	11	0	161
	7:15 AM	0	49	11	0	0	93	2	0	0	0	7	0	0	0	9	0	171
	7:30 AM	0	43	14	0	0	81	4	0	0	0	2	0	0	0	8	0	152
	7:45 AM	0	50	9	0	0	105	1	0	0	0	4	0	0	0	17	0	186
	8:00 AM	0	62	13	0	0	84	5	0	0	0	3	0	0	0	10	0	177
	8:15 AM	0	57	11	0	0	85	6	0	0	0	10	0	0	0	13	0	182
	8:30 AM	0	53	13	0	0	78	4	0	0	0	4	0	0	0	15	0	167
8:45 AM	0	59	9	0	0	76	5	0	0	0	1	0	0	0	12	0	162	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0.00%	425	92	0	0.00%	675	34	0	0	0	37	0	0	0	95	0	1358	
	0.00%	82.21%	17.79%	0.00%	0.00%	95.20%	4.80%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%		
PEAK HR :	07:45 AM - 08:45 AM																TOTAL	
PEAK HR VOL :	0	222	46	0	0	352	16	0	0	0	21	0	0	0	55	0	712	
PEAK HR FACTOR :	0.000	0.895	0.885	0.000	0.000	0.838	0.667	0.000	0.000	0.000	0.525	0.000	0.000	0.000	0.809	0.000	0.957	
	0.893				0.868				0.525				0.809					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	4:00 PM	0	156	32	0	0	118	7	0	0	0	11	0	0	0	14	0	338
	4:15 PM	0	153	23	0	0	122	7	0	0	0	3	0	0	0	20	0	325
	4:30 PM	0	123	25	0	0	114	4	0	0	0	6	0	0	0	15	0	287
	4:45 PM	0	153	39	0	0	120	3	0	0	0	4	0	0	0	19	0	338
	5:00 PM	0	141	31	0	0	112	6	0	0	0	6	0	0	0	15	0	311
	5:15 PM	0	194	37	0	0	112	2	0	0	0	10	0	0	0	14	0	369
	5:30 PM	0	160	40	0	0	130	4	0	0	0	5	0	0	0	14	0	353
5:45 PM	0	142	24	0	0	127	5	0	0	0	5	0	0	0	19	0	322	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0.00%	1221	251	0	0	955	36	0	0	0	50	0	0	0	130	0	2643	
	0.00%	82.95%	17.05%	0.00%	0.00%	96.37%	3.63%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM																TOTAL	
PEAK HR VOL :	0	648	147	0	0	474	15	0	0	0	25	0	0	0	62	0	1371	
PEAK HR FACTOR :	0.000	0.835	0.919	0.000	0.000	0.912	0.625	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.816	0.000	0.929	
	0.860				0.912				0.625				0.816					

# Sunset Ave & Sunset Center South Entrance

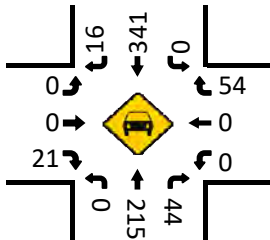
## Peak Hour Turning Movement Count

ID: 22-080207-002  
City: Suisun City

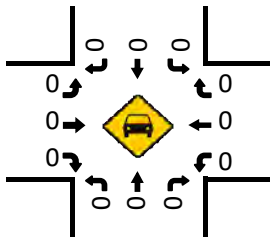
Day: Tuesday  
Date: 7/12/2022



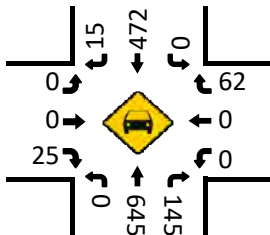
Cars (AM)



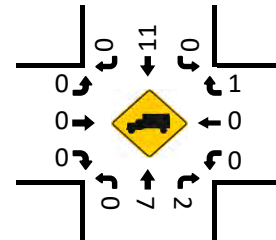
Cars (NOON)



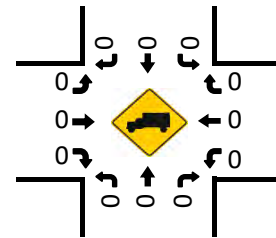
Cars (PM)



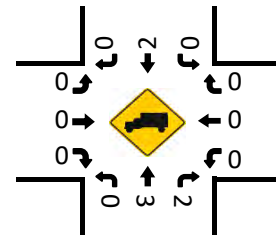
HT (AM)



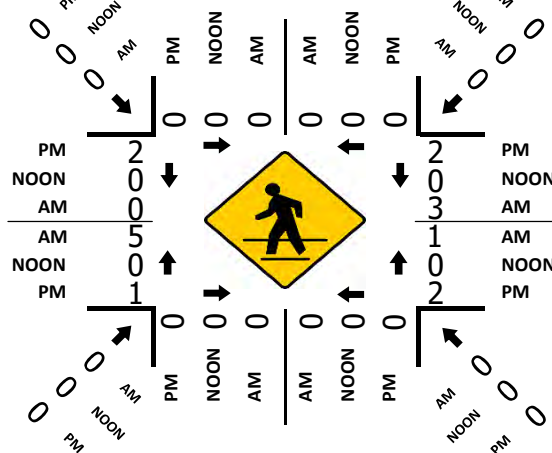
HT (NOON)



HT (PM)



Pedestrians (Crosswalks)



# National Data & Surveying ServicesIntersection Turning Movement Count

**Location:** Sunset Ave & Sunset Center Main Entrance  
**City:** Suisun City  
**Control:** Signalized

**Project ID:** 22-080207-001  
**Date:** 7/12/2022

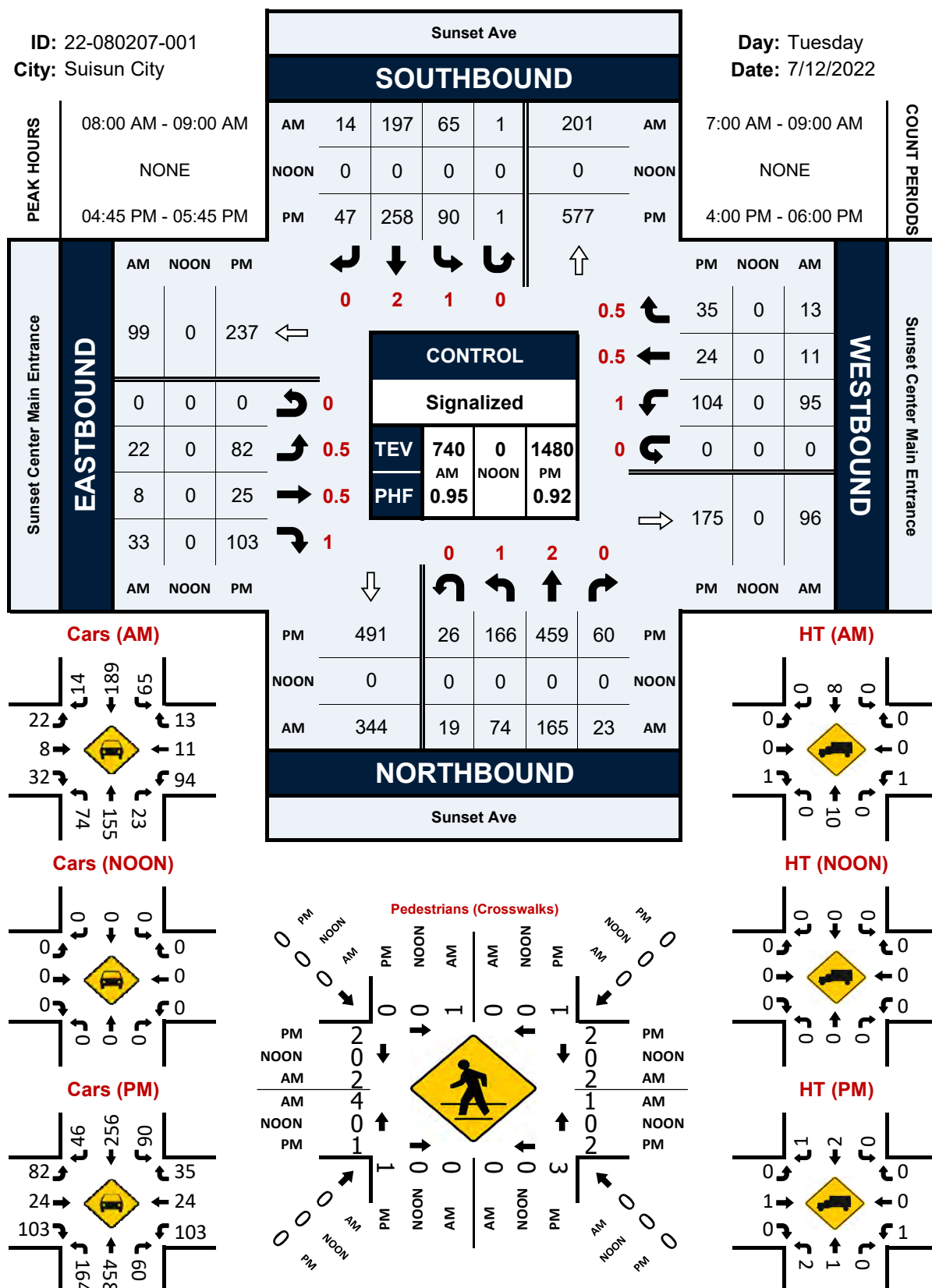
## Data - Total

NS/EW Streets:	Sunset Ave				Sunset Ave				Sunset Center Main Entrance				Sunset Center Main Entrance					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0.5 EL	0.5 ET	1 ER	0 EU	1 WL	0.5 WT	0.5 WR	0 WU	TOTAL	
	7:00 AM	18	33	6	4	8	48	2	0	2	1	7	0	22	1	3	0	155
	7:15 AM	10	35	10	5	7	50	2	0	3	2	9	0	30	5	2	0	170
	7:30 AM	9	30	3	6	12	49	2	0	1	2	5	0	27	1	1	0	148
	7:45 AM	10	44	7	9	8	63	5	0	0	2	7	0	25	5	5	0	190
	8:00 AM	21	38	5	7	13	50	2	0	4	4	6	0	26	5	3	0	184
	8:15 AM	6	51	11	3	24	53	3	0	6	0	9	0	26	1	2	0	195
	8:30 AM	21	41	3	3	9	44	2	1	6	1	7	0	28	1	3	0	170
	8:45 AM	26	35	4	6	19	50	7	0	6	3	11	0	15	4	5	0	191
TOTAL VOLUMES :	NL 121	NT 307	NR 49	NU 43	SL 100	ST 407	SR 25	SU 1	EL 28	ET 15	ER 61	EU 0	WL 199	WT 23	WR 24	WU 0	TOTAL 1403	
APPROACH %'s :	23.27%	59.04%	9.42%	8.27%	18.76%	76.36%	4.69%	0.19%	26.92%	14.42%	58.65%	0.00%	80.89%	9.35%	9.76%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																TOTAL	
PEAK HR VOL :	74	165	23	19	65	197	14	1	22	8	33	0	95	11	13	0	740	
PEAK HR FACTOR :	0.712	0.809	0.523	0.679	0.677	0.929	0.500	0.250	0.917	0.500	0.750	0.000	0.848	0.550	0.650	0.000	0.949	
	0.989				0.866				0.788				0.875					
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0.5 EL	0.5 ET	1 ER	0 EU	1 WL	0.5 WT	0.5 WR	0 WU	TOTAL	
	4:00 PM	45	106	16	5	23	67	11	2	16	2	25	0	28	9	3	0	357
	4:15 PM	45	101	15	9	64	72	14	1	17	64	24	0	31	5	7	0	371
	4:30 PM	21	102	14	4	23	68	12	0	19	7	28	0	16	8	13	0	335
	4:45 PM	28	119	13	6	21	68	9	1	19	2	20	0	32	4	10	0	352
	5:00 PM	45	94	17	6	24	67	9	0	17	7	17	0	25	7	10	0	345
	5:15 PM	50	135	14	5	28	56	20	0	17	5	27	0	28	9	9	0	403
	5:30 PM	43	111	16	9	17	67	9	0	29	11	39	0	19	4	6	0	380
	5:45 PM	30	105	17	8	14	63	14	0	15	3	30	0	29	5	7	0	340
TOTAL VOLUMES :	NL 307	NT 872	NR 122	NU 52	SL 177	ST 520	SR 100	SU 4	EL 151	ET 44	ER 210	EU 0	WL 208	WT 51	WR 65	WU 0	TOTAL 2883	
APPROACH %'s :	22.69%	64.45%	9.02%	3.84%	22.10%	64.92%	12.48%	0.50%	37.28%	10.86%	51.85%	0.00%	64.20%	15.74%	20.06%	0.00%		
PEAK HR :	04:45 PM - 05:45 PM																TOTAL	
PEAK HR VOL :	166	459	60	26	90	258	47	1	82	25	103	0	104	24	35	0	1480	
PEAK HR FACTOR :	0.830	0.850	0.882	0.722	0.804	0.949	0.588	0.250	0.707	0.568	0.660	0.000	0.813	0.667	0.875	0.000	0.918	
	0.871				0.952				0.665				0.886					

### Peak Hour Turning Movement Count

**City:** Suisun City

**Date:** 7/12/2022



## Friday Traffic Counts

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Chevron/7-Eleven Dwy & Hwy 12  
**City:** Suisun City  
**Control:** 2-Way Stop(NB/SB)

**Project ID:** 22-080207-004  
**Date:** 7/8/2022

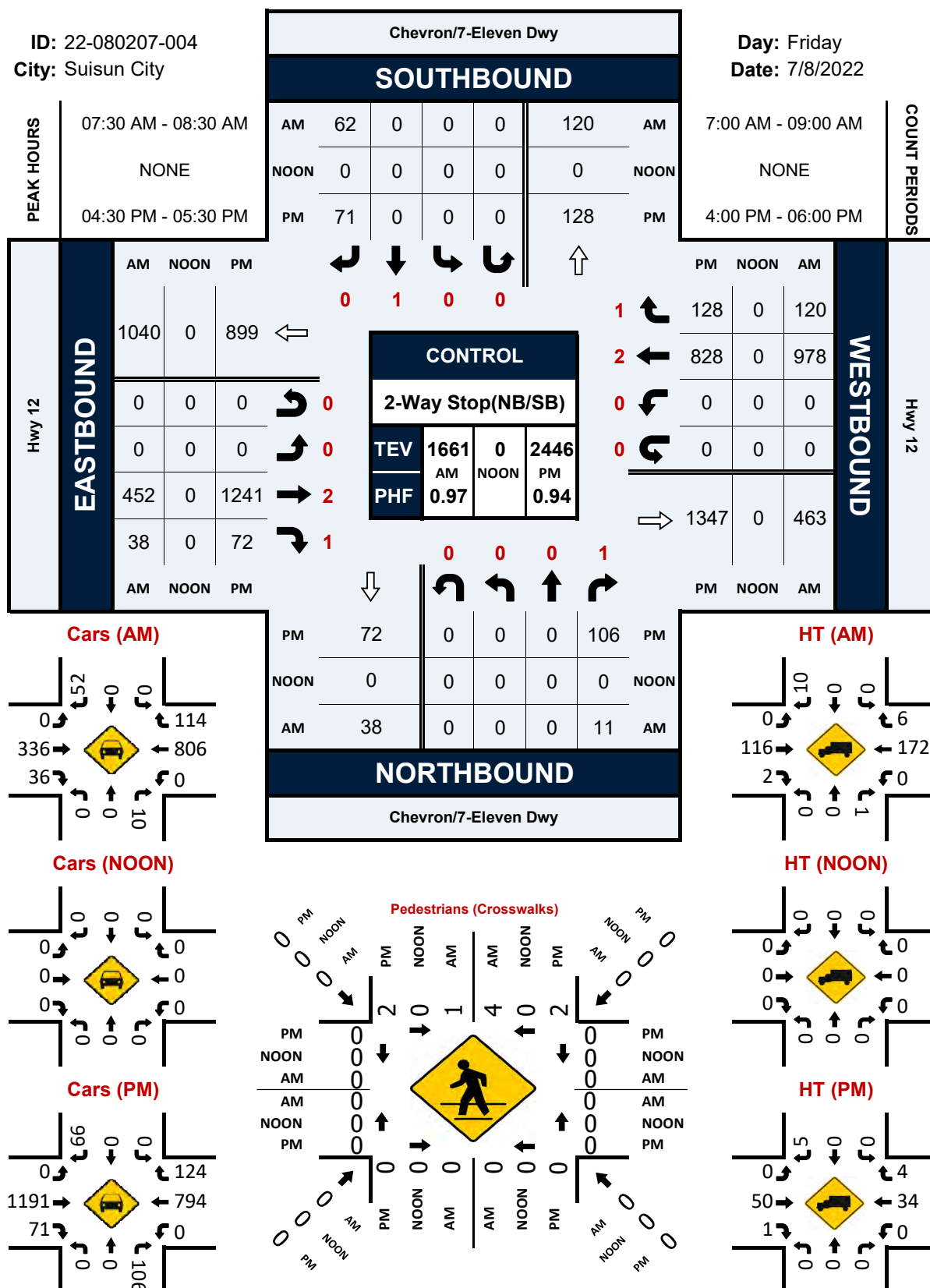
## Data - Total

NS/EW Streets:	Chevron/7-Eleven Dwy				Chevron/7-Eleven Dwy				Hwy 12				Hwy 12				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	2 ET	1 ER	0 EU	0 WL	2 WT	1 WR	0 WU	
7:00 AM	0	0	0	0	0	0	18	0	0	107	4	0	0	211	26	0	366
7:15 AM	0	0	5	0	0	0	13	0	0	107	2	0	0	252	17	0	396
7:30 AM	0	0	1	0	0	0	17	0	0	81	11	0	0	248	33	0	391
7:45 AM	0	0	2	0	0	0	13	0	0	135	14	0	0	240	23	0	427
8:00 AM	0	0	3	0	0	0	11	0	0	125	8	0	0	238	29	0	414
8:15 AM	0	0	5	0	0	0	21	0	0	111	5	0	0	252	35	0	429
8:30 AM	0	0	10	0	0	0	8	0	0	124	5	0	0	218	21	0	386
8:45 AM	0	0	3	0	0	0	8	0	0	136	6	0	0	243	21	0	417
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	94.39%	5.61%	0.00%	0.00%	90.27%	9.73%	0.00%	3226
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	11	0	0	0	62	0	0	452	38	0	0	978	120	0	1661
PEAK HR FACTOR :	0.000	0.000	0.550	0.000	0.000	0.000	0.738	0.000	0.000	0.837	0.679	0.000	0.000	0.970	0.857	0.000	0.968
	0.550				0.738				0.822				0.956				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	1 NR	0 NU	0 SL	1 ST	0 SR	0 SU	0 EL	2 ET	1 ER	0 EU	0 WL	2 WT	1 WR	0 WU	
4:00 PM	0	0	0	28	0	0	19	0	0	321	15	0	0	231	29	0	643
4:15 PM	0	0	0	29	0	0	16	0	0	321	34	0	0	160	34	0	581
4:30 PM	0	0	0	32	0	0	20	0	0	296	11	0	0	218	38	0	615
4:45 PM	0	0	0	23	0	0	20	0	0	270	18	0	0	219	29	0	579
5:00 PM	0	0	0	27	0	0	15	0	0	359	27	0	0	196	27	0	651
5:15 PM	0	0	0	24	0	0	16	0	0	316	16	0	0	195	34	0	601
5:30 PM	0	0	0	23	0	0	16	0	0	313	16	0	0	162	21	0	551
5:45 PM	0	0	0	30	0	0	20	0	0	353	15	0	0	189	24	0	631
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	2549	136	0	0	1570	236	0	4852
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	106	0	0	71	0	0	1241	72	0	0	828	128	0	2446
PEAK HR FACTOR :	0.000	0.000	0.828	0.000	0.000	0.000	0.888	0.000	0.000	0.864	0.667	0.000	0.000	0.945	0.842	0.000	0.939
	0.828				0.888				0.850				0.934				

### Peak Hour Turning Movement Count

**Day:** Friday  
**Date:** 7/8/2022



# National Data & Surveying ServicesIntersection Turning Movement Count

**Location:** Sunset Ave/Grizzly Island Rd & Hwy 12  
**City:** Suisun City  
**Control:** Signalized

**Project ID:** 22-080207-003  
**Date:** 7/8/2022

## Data - Total

NS/EW Streets:		Sunset Ave/Grizzly Island Rd				Sunset Ave/Grizzly Island Rd				Hwy 12				Hwy 12				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL	
	1 NL	1 NT	1 NR	0 NU	1.5 SL	0.5 ST	2 SR	0 SU	2 EL	2 ET	1 ER	0 EU	1 WL	2 WT	1 WR	0 WU		
7:00 AM	10	7	1	0	16	6	63	0	31	98	19	1	2	194	25	2	475	
7:15 AM	17	8	0	0	18	8	80	0	44	89	10	0	4	245	19	0	542	
7:30 AM	17	5	2	0	21	13	66	0	29	81	8	1	4	234	20	0	501	
7:45 AM	13	8	1	0	35	10	52	0	54	112	16	2	1	242	17	2	565	
8:00 AM	14	13	1	0	25	18	42	0	51	100	14	1	5	222	20	0	526	
8:15 AM	21	15	5	0	18	13	50	0	43	91	14	6	1	237	18	0	532	
8:30 AM	13	7	1	0	21	9	59	1	43	111	6	4	5	217	24	0	521	
8:45 AM	11	7	2	0	32	11	43	0	56	98	8	3	6	206	29	3	515	
TOTAL VOLUMES :	116	70	13	0	186	88	455	1	351	780	95	18	28	1797	172	7	4177	
APPROACH %'s :	58.29%	35.18%	6.53%	0.00%	25.48%	12.05%	62.33%	0.14%	28.22%	62.70%	7.64%	1.45%	1.40%	89.67%	8.58%	0.35%		
PEAK HR :	07:45 AM - 08:45 AM																TOTAL	
PEAK HR VOL :	61	43	8	0	99	50	203	1	191	414	50	13	12	918	79	2	2144	
PEAK HR FACTOR :	0.726	0.717	0.400	0.000	0.707	0.694	0.860	0.250	0.884	0.924	0.781	0.542	0.600	0.948	0.823	0.250	0.949	
	0.683				0.910				0.908				0.965					

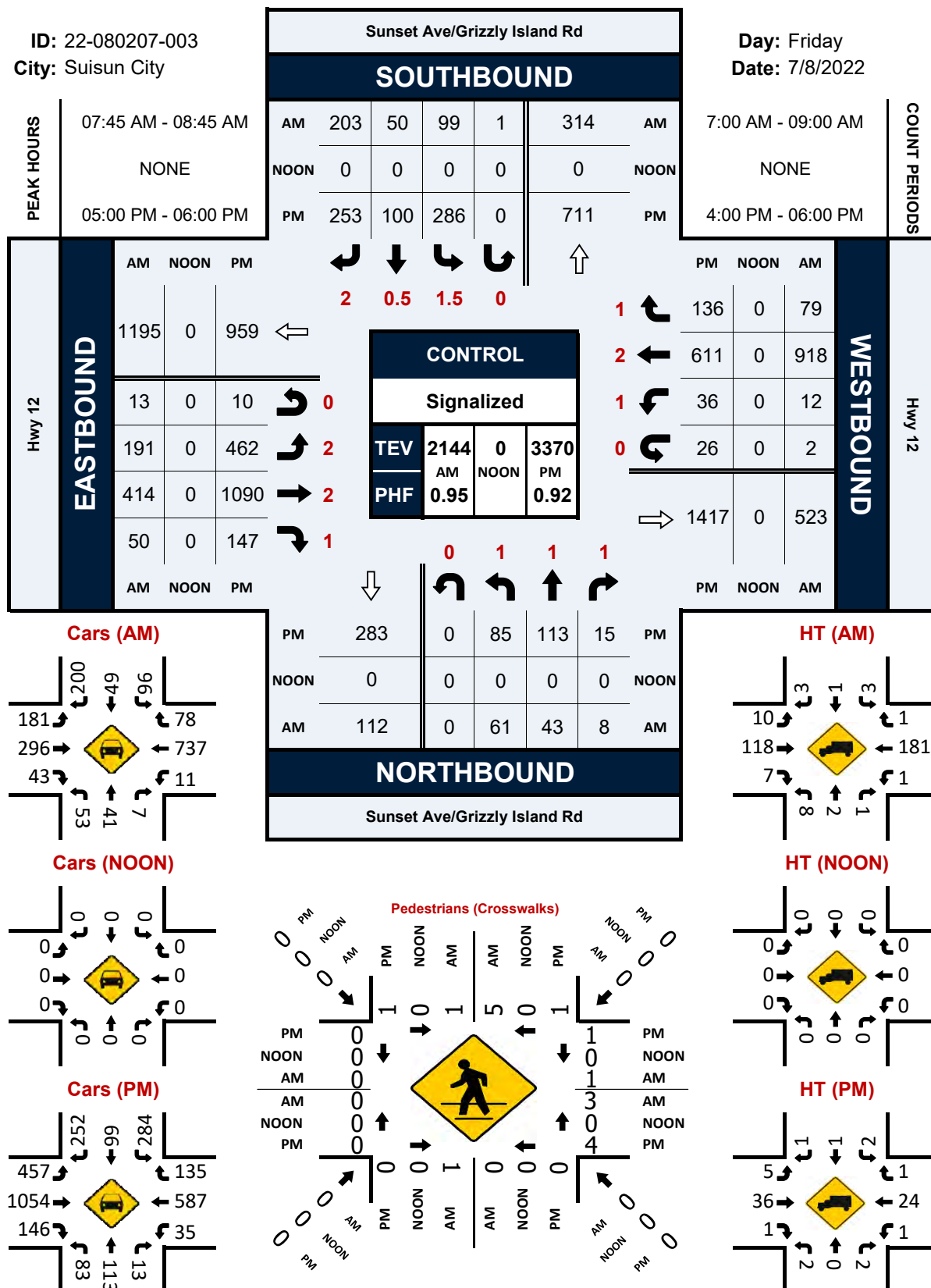
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	1 NT	1 NR	0 NU	1.5 SL	0.5 ST	2 SR	0 SU	2 EL	2 ET	1 ER	0 EU	1 WL	2 WT	1 WR	0 WU	
4:00 PM	24	38	2	0	49	16	60	0	112	278	35	3	8	191	41	6	863
4:15 PM	16	23	4	0	64	24	73	0	115	269	27	4	10	142	28	3	802
4:30 PM	24	20	7	53	0	48	30	5	116	243	30	6	13	163	43	35	815
4:45 PM	28	33	3	0	46	17	69	0	65	229	26	1	13	191	36	9	766
5:00 PM	25	24	5	0	75	21	69	0	134	305	42	5	7	158	32	10	912
5:15 PM	21	27	4	0	66	31	67	0	120	248	34	1	17	156	38	5	835
5:30 PM	20	34	4	0	62	22	57	0	120	266	34	2	5	137	22	5	790
5:45 PM	19	28	2	0	83	26	60	0	88	271	37	2	7	160	44	6	833
TOTAL VOLUMES :	177	236	31	0	498	187	503	0	870	2109	270	24	80	1298	284	49	6616
APPROACH %'s :	39.86%	53.15%	6.98%	0.00%	41.92%	15.74%	42.34%	0.00%	26.58%	64.44%	8.25%	0.73%	4.68%	75.86%	16.60%	2.86%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	85	113	15	0	286	100	253	0	462	1090	147	10	36	611	136	26	3370
PEAK HR FACTOR :	0.850	0.831	0.750	0.000	0.861	0.806	0.917	0.000	0.862	0.893	0.875	0.500	0.529	0.955	0.773	0.650	0.924
	0.918				0.945				0.879				0.932				



### Peak Hour Turning Movement Count

**City:** Suisun City

**Date:** 7/8/2022



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Sunset Ave & Sunset Center South Entrance  
**City:** Suisun City  
**Control:** 2-Way Stop(EB/WB)

**Project ID:** 22-080207-002  
**Date:** 7/8/2022

## Data - Total

NS/EW Streets:	Sunset Ave				Sunset Ave				Sunset Center South Entrance				Sunset Center South Entrance					
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	7:00 AM	0	52	12	0	0	82	9	0	0	0	8	0	0	0	11	0	174
	7:15 AM	0	63	6	0	0	96	6	0	0	0	5	0	0	0	10	0	186
	7:30 AM	0	42	14	0	0	96	4	0	0	0	7	0	0	0	11	0	174
	7:45 AM	0	67	9	0	0	90	5	0	0	0	3	0	0	0	11	0	185
	8:00 AM	0	77	10	0	0	83	3	0	0	0	5	0	0	0	17	0	195
	8:15 AM	0	61	11	0	0	74	3	0	0	0	5	0	0	0	10	0	164
	8:30 AM	0	62	17	0	0	85	8	0	0	0	7	0	0	0	12	0	191
8:45 AM	0	77	15	0	0	81	3	0	0	0	5	0	0	0	11	0	192	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0.00%	501	94	0	0.00%	687	41	0	0.00%	0	45	0	0.00%	0	93	0	1461	
PEAK HR :	08:00 AM - 09:00 AM																	
PEAK HR VOL :	0	277	53	0	0	323	17	0	0	0	22	0	0	0	50	0	742	
PEAK HR FACTOR :	0.000	0.899	0.779	0.000	0.000	0.950	0.531	0.000	0.000	0.000	0.786	0.000	0.000	0.000	0.735	0.000	0.951	
	0.897				0.914				0.786				0.735					

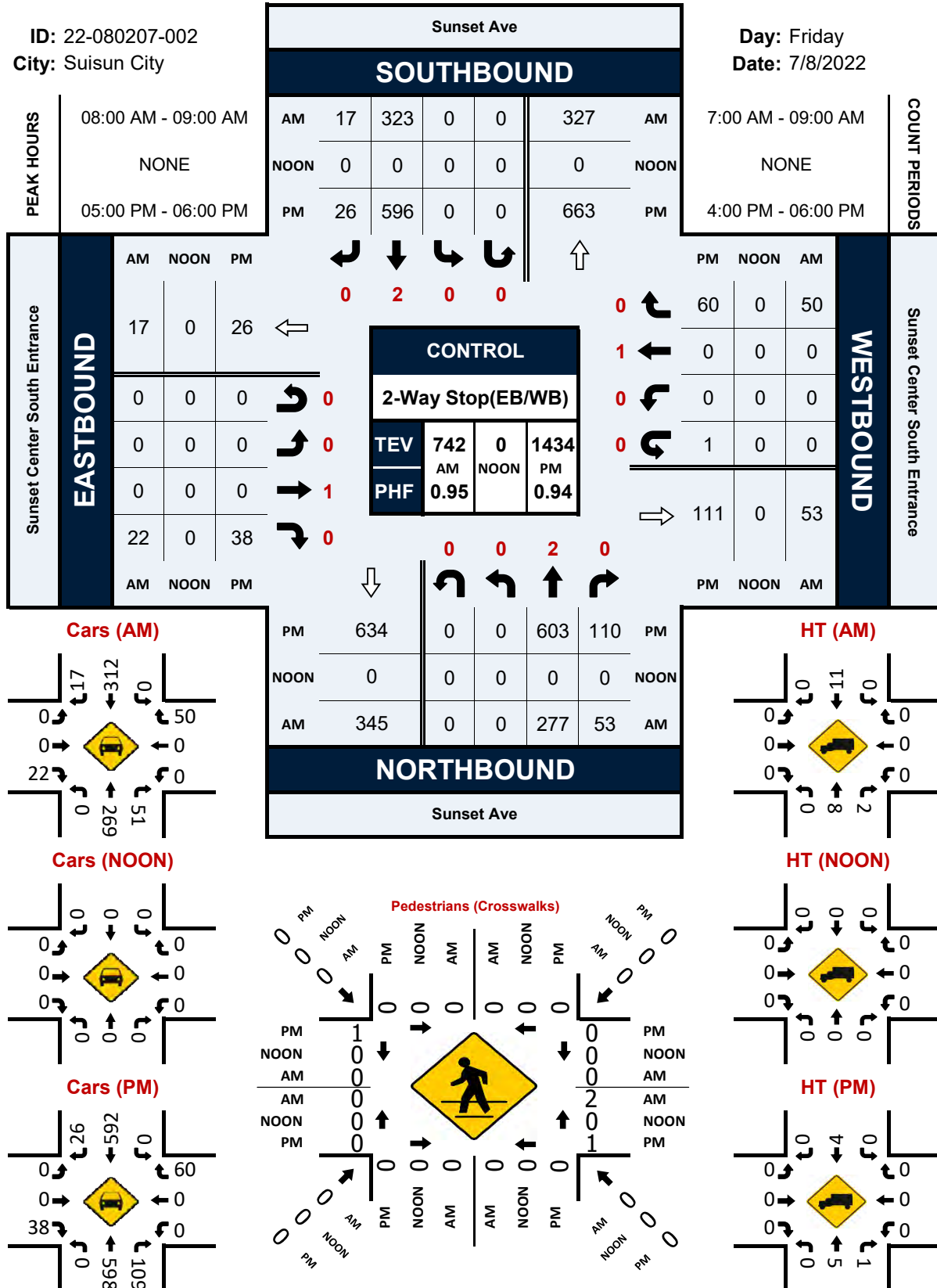
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	0	2	0	0	0	2	0	0	0	1	0	0	0	1	0	0		
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
	4:00 PM	0	167	28	0	0	118	4	0	0	0	7	0	0	0	21	0	345
	4:15 PM	0	135	29	0	0	153	7	0	0	0	13	0	0	0	18	0	355
	4:30 PM	0	150	40	0	0	119	5	0	0	0	8	0	0	0	13	0	335
	4:45 PM	0	109	22	0	0	125	10	0	0	0	12	0	0	0	16	0	294
	5:00 PM	0	164	29	0	0	150	9	0	0	0	10	0	0	0	18	1	381
	5:15 PM	0	151	34	0	0	151	7	0	0	0	13	0	0	0	15	0	371
	5:30 PM	0	148	26	0	0	147	5	0	0	0	3	0	0	0	14	0	343
5:45 PM	0	140	21	0	0	148	5	0	0	0	12	0	0	0	13	0	339	
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL	
APPROACH %'s :	0.00%	1164	229	0	0	1111	52	0	0	0	78	0	0	0	128	1	2763	
PEAK HR :	05:00 PM - 06:00 PM																	
PEAK HR VOL :	0	603	110	0	0	596	26	0	0	0	38	0	0	0	60	1	1434	
PEAK HR FACTOR :	0.000	0.919	0.809	0.000	0.000	0.987	0.722	0.000	0.000	0.000	0.731	0.000	0.000	0.000	0.833	0.250	0.941	
	0.924				0.978				0.731				0.803					

# Sunset Ave & Sunset Center South Entrance

## Peak Hour Turning Movement Count

ID: 22-080207-002  
City: Suisun City

Day: Friday  
Date: 7/8/2022



# National Data & Surveying ServicesIntersection Turning Movement Count

**Location:** Sunset Ave & Sunset Center Main Entrance  
**City:** Suisun City  
**Control:** Signalized

**Project ID:** 22-080207-001  
**Date:** 7/8/2022

## Data - Total

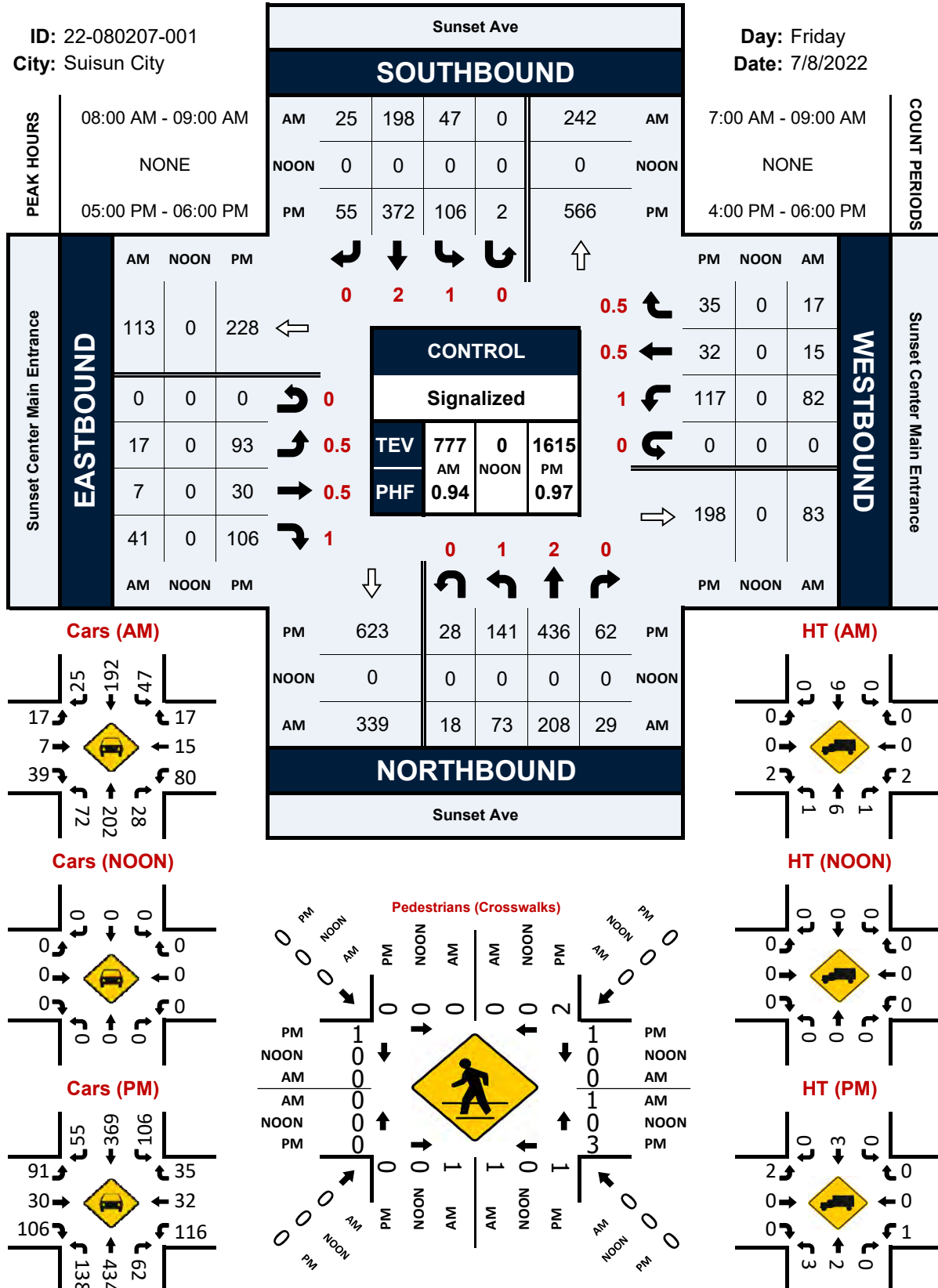
NS/EW Streets:	Sunset Ave				Sunset Ave				Sunset Center Main Entrance				Sunset Center Main Entrance				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0.5 EL	0.5 ET	1 ER	0 EU	1 WL	0.5 WT	0.5 WR	0 WU	TOTAL
7:00 AM	11	42	8	6	5	58	4	0	5	2	5	0	22	1	0	0	169
7:15 AM	13	44	7	5	9	52	2	0	4	0	9	0	36	4	1	0	186
7:30 AM	9	36	7	4	18	64	2	0	5	1	7	0	25	4	3	0	185
7:45 AM	17	47	7	6	18	48	4	1	3	1	7	0	35	2	2	0	198
8:00 AM	14	66	12	3	13	51	4	0	3	1	7	0	24	5	3	0	206
8:15 AM	19	49	2	2	13	47	5	0	1	2	10	0	18	6	6	0	180
8:30 AM	12	47	5	8	10	56	10	0	3	2	11	0	19	0	4	0	187
8:45 AM	28	46	10	5	11	44	6	0	10	2	13	0	21	4	4	0	204
TOTAL VOLUMES :	NL 123	NT 377	NR 58	NU 39	SL 97	ST 420	SR 37	SU 1	EL 34	ET 11	ER 69	EU 0	WL 200	WT 26	WR 23	WU 0	TOTAL 1515
APPROACH %'s :	20.60%	63.15%	9.72%	6.53%	17.48%	75.68%	6.67%	0.18%	29.82%	9.65%	60.53%	0.00%	80.32%	10.44%	9.24%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL 777
PEAK HR VOL :	73	208	29	18	47	198	25	0	17	7	41	0	82	15	17	0	
PEAK HR FACTOR :	0.652	0.788	0.604	0.563	0.904	0.884	0.625	0.000	0.425	0.875	0.788	0.000	0.854	0.625	0.708	0.000	0.943
	0.863				0.888				0.650				0.891				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1 NL	2 NT	0 NR	0 NU	1 SL	2 ST	0 SR	0 SU	0.5 EL	0.5 ET	1 ER	0 EU	1 WL	0.5 WT	0.5 WR	0 WU	TOTAL
4:00 PM	44	120	18	9	33	61	18	1	7	7	24	0	31	6	5	0	394
4:15 PM	24	97	25	6	14	83	9	0	14	3	26	0	42	6	0	0	358
4:30 PM	24	126	14	1	21	81	9	1	21	3	18	0	24	6	10	0	359
4:45 PM	31	66	17	6	30	63	11	1	19	5	24	0	43	13	10	0	339
5:00 PM	37	125	11	14	28	79	17	0	18	9	37	0	28	4	10	0	417
5:15 PM	28	113	21	4	26	99	13	2	17	9	20	0	37	7	7	0	403
5:30 PM	41	102	10	5	27	93	13	0	30	7	23	0	29	11	9	0	400
5:45 PM	35	96	20	5	25	101	12	0	28	5	26	0	23	10	9	0	395
TOTAL VOLUMES :	NL 264	NT 845	NR 136	NU 50	SL 204	ST 660	SR 101	SU 5	EL 164	ET 48	ER 198	EU 0	WL 257	WT 63	WR 70	WU 0	TOTAL 3065
APPROACH %'s :	20.39%	65.25%	10.50%	3.86%	21.03%	68.04%	10.41%	0.52%	40.00%	11.71%	48.29%	0.00%	65.90%	16.15%	17.95%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL 1615
PEAK HR VOL :	141	436	62	28	106	372	55	2	93	30	106	0	117	32	35	0	
PEAK HR FACTOR :	0.860	0.872	0.738	0.500	0.946	0.921	0.809	0.250	0.775	0.833	0.716	0.000	0.791	0.727	0.875	0.000	0.968
	0.892				0.955				0.895				0.902				

# Sunset Ave & Sunset Center Main Entrance

## Peak Hour Turning Movement Count

ID: 22-080207-001  
City: Suisun City

Day: Friday  
Date: 7/8/2022



# **ATTACHMENT B**

# Land Use: 810

## Tractor Supply Store

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### Description

A tractor supply store is a free-standing facility that specializes in the sale of agricultural and garden equipment, power tools, vehicle maintenance parts, and heavy-duty outdoor machinery. It may also offer ancillary items such as clothing, footwear, and other accessories.

### Additional Data

An outside storage area is not included in the overall gross floor area measurements. However, if the storage area is located within the principal outside faces of the exterior walls, it is included in the overall gross floor area of the building.

The sites were surveyed in the 2000s in Connecticut, Massachusetts, New Hampshire, New Jersey, Pennsylvania, and Vermont.

### Source Number

737

# Tractor Supply Store (810)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 7

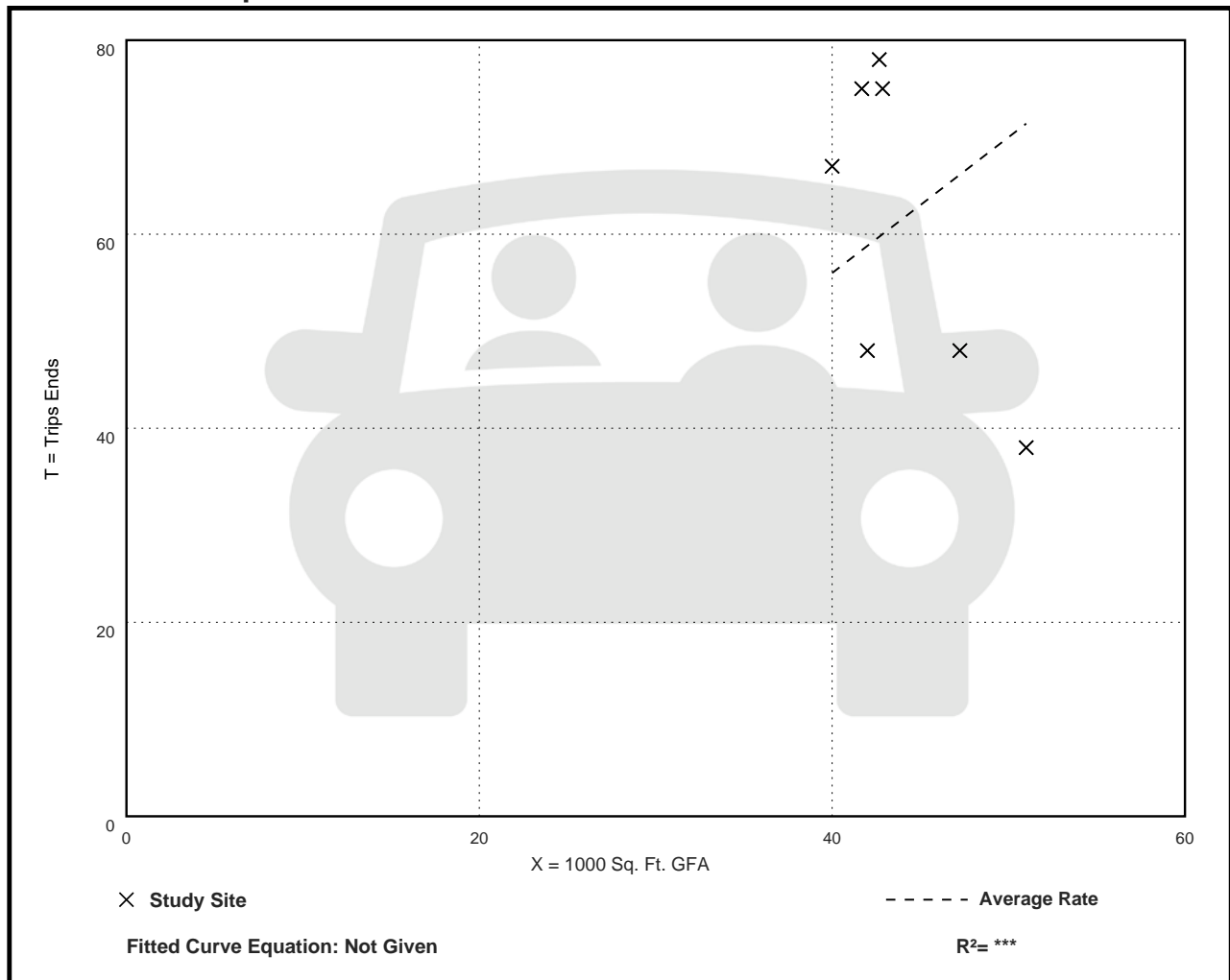
Avg. 1000 Sq. Ft. GFA: 44

Directional Distribution: 47% entering, 53% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.40	0.75 - 1.83	0.45

## Data Plot and Equation





# Land Use: 816

## Hardware/Paint Store

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### Description

A hardware/paint store is a free-standing building that sells hardware and paint supplies. Building materials and lumber store (Land Use 812) and home improvement superstore (Land Use 862) are related uses.

### Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1990s and the 2010s in California, Oregon, South Dakota, Texas, and Wisconsin.

### Source Numbers

358, 531, 880, 959, 966

# Hardware/Paint Store (816)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA  
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 4

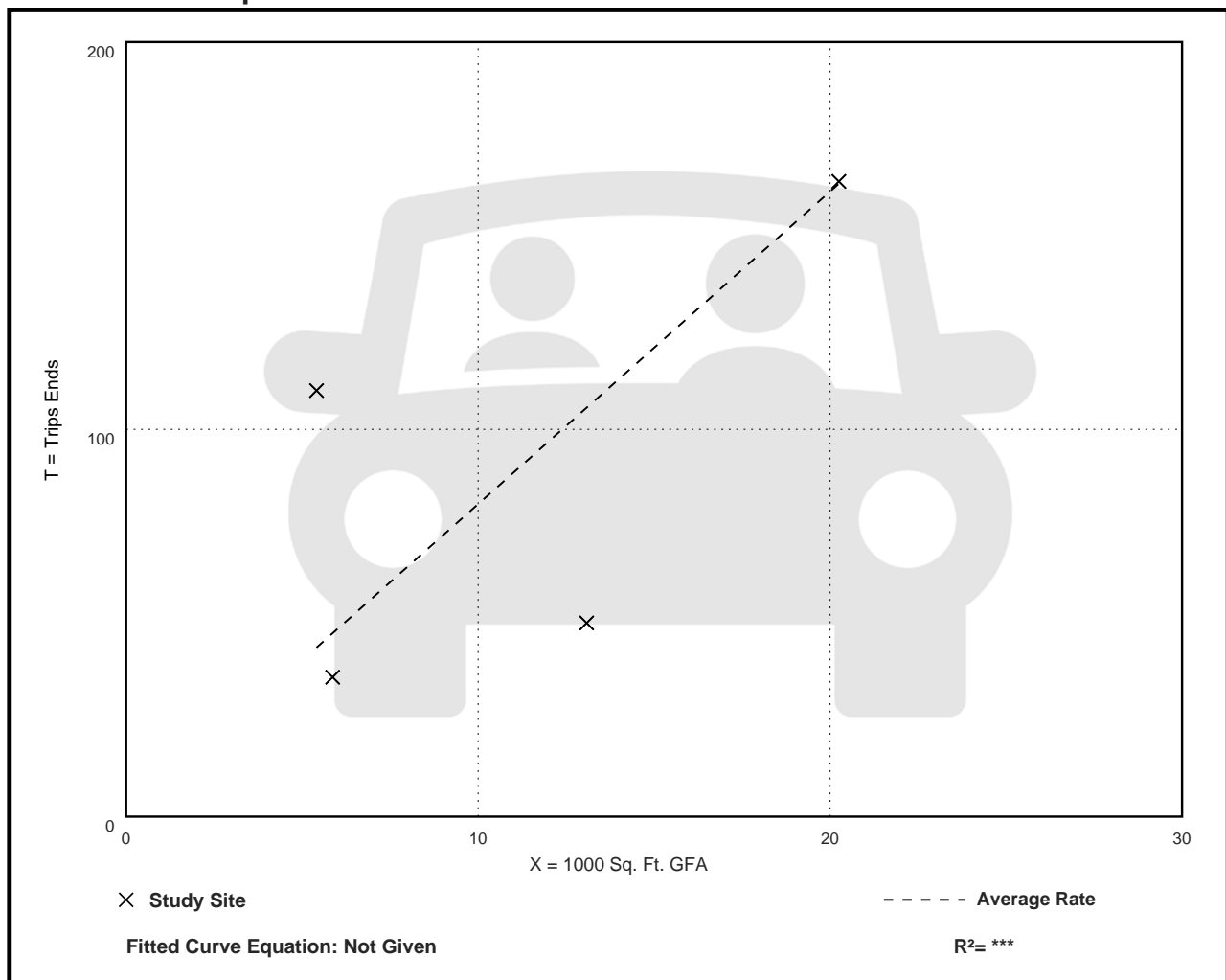
Avg. 1000 Sq. Ft. GFA: 11

Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
8.07	3.82 - 20.33	5.66

## Data Plot and Equation



# Hardware/Paint Store (816)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 4

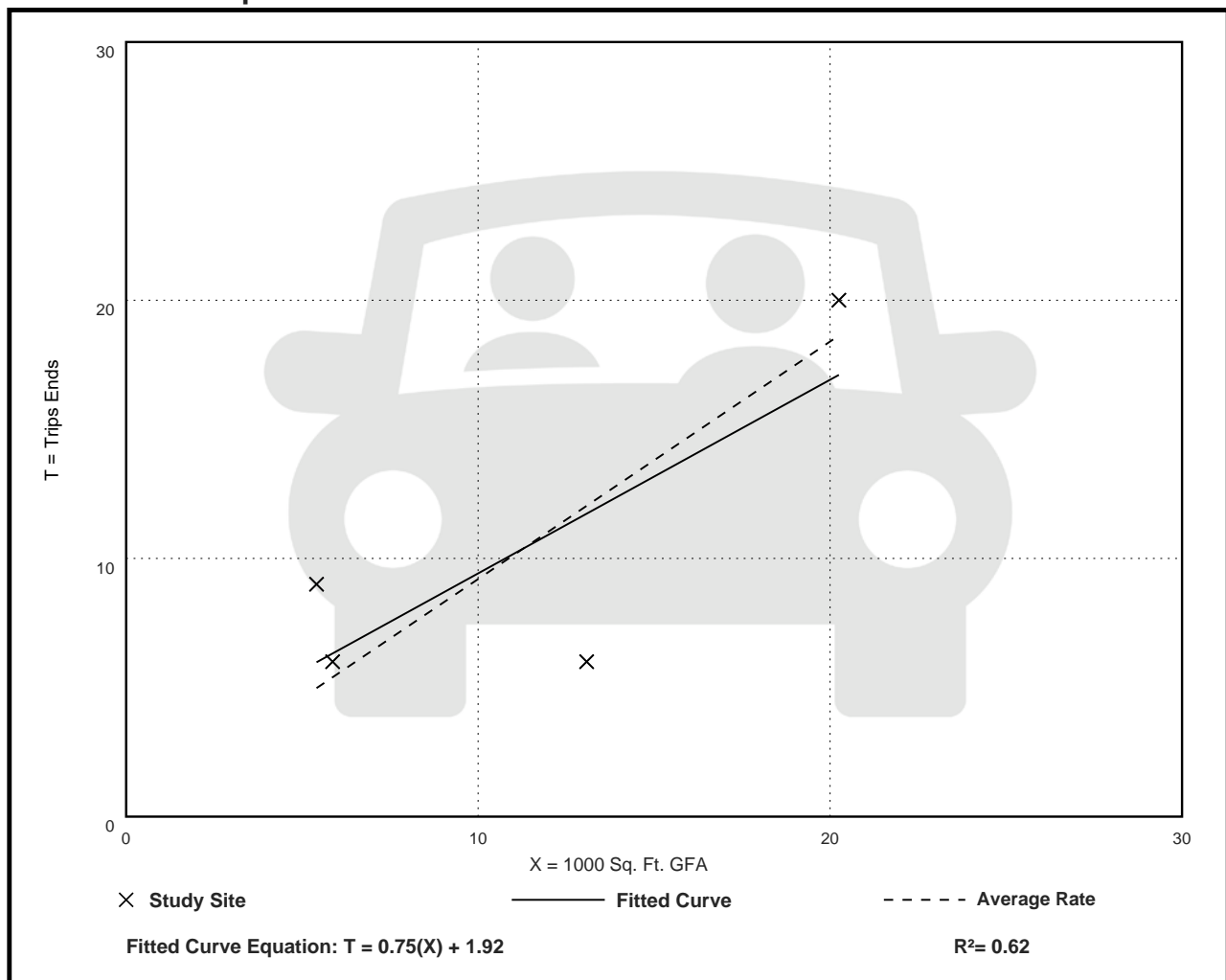
Avg. 1000 Sq. Ft. GFA: 11

Directional Distribution: 54% entering, 46% exiting

## Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.92	0.46 - 1.66	0.42

## Data Plot and Equation



# **ATTACHMENT C**

## Weekday LOS Analysis Worksheets

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

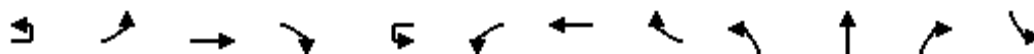
Existing AM  
07/20/2022

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	572	71	0	1237	120	0	0	32	0	0	74
Future Vol, veh/h	0	572	71	0	1237	120	0	0	32	0	0	74
Conflicting Peds, #/hr	0	0	0	0	0	10	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	578	72	0	1249	121	0	0	32	0	0	75
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	-	-	-	635
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	421
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			15.5		
HCM LOS							A			C		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	-	-	-	-	417							
HCM Lane V/C Ratio	-	-	-	-	0.179							
HCM Control Delay (s)	0	-	-	-	15.5							
HCM Lane LOS	A	-	-	-	C							
HCM 95th %tile Q(veh)	-	-	-	-	0.6							

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing AM  
07/22/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔↔	↔↔	↔		↔	↔↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	2	240	527	153	1	28	1118	101	212	115	6	145
Future Volume (veh/h)	2	240	527	153	1	28	1118	101	212	115	6	145
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.99	1.00		0.98	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		270	592	172		31	1256	113	238	129	7	130
Peak Hour Factor		0.89	0.89	0.89		0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		334	978	434		364	1397	620	386	405	336	188
Arrive On Green		0.10	0.28	0.28		0.20	0.39	0.39	0.22	0.22	0.22	0.11
Sat Flow, veh/h		3456	3554	1576		1781	3554	1577	1781	1870	1554	1781
Grp Volume(v), veh/h		270	592	172		31	1256	113	238	129	7	130
Grp Sat Flow(s),veh/h/ln		1728	1777	1576		1781	1777	1577	1781	1870	1554	1781
Q Serve(g_s), s		8.3	15.8	9.7		1.5	36.2	5.1	13.2	6.3	0.4	7.7
Cycle Q Clear(g_c), s		8.3	15.8	9.7		1.5	36.2	5.1	13.2	6.3	0.4	7.7
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		334	978	434		364	1397	620	386	405	336	188
V/C Ratio(X)		0.81	0.61	0.40		0.09	0.90	0.18	0.62	0.32	0.02	0.69
Avail Cap(c_a), veh/h		400	1754	778		364	1493	663	850	892	742	312
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)		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		48.2	34.3	32.1		35.1	31.0	21.6	38.6	35.9	33.6	47.0
Incr Delay (d2), s/veh		10.0	0.6	0.6		0.1	7.4	0.1	1.6	0.4	0.0	4.5
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
%ile BackOfQ(50%),veh/ln		3.9	6.5	3.6		0.6	15.6	1.8	6.0	3.0	0.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		58.2	34.9	32.7		35.2	38.4	21.8	40.2	36.4	33.6	51.5
LnGrp LOS		E	C	C		D	D	C	D	D	C	D
Approach Vol, veh/h			1034				1400			374		
Approach Delay, s/veh			40.6				37.0			38.8		
Approach LOS			D				D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.5	36.2		16.1	15.6	49.0		28.2				
Change Period (Y+Rc), s	6.2	* 6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	5.0	* 54		19.1	12.6	45.8		52.0				
Max Q Clear Time (g_c+I1), s	3.5	17.8		10.1	10.3	38.2		15.2				
Green Ext Time (p_c), s	0.0	4.4		1.4	0.2	4.7		1.6				

### Intersection Summary

HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.

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

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing AM  
07/22/2022



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	87	192
Future Volume (veh/h)	87	192
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	143	216
Peak Hour Factor	0.89	0.89
Percent Heavy Veh, %	2	2
Cap, veh/h	197	335
Arrive On Green	0.11	0.11
Sat Flow, veh/h	1870	3170
Grp Volume(v), veh/h	143	216
Grp Sat Flow(s),veh/h/ln	1870	1585
Q Serve(g_s), s	8.1	7.1
Cycle Q Clear(g_c), s	8.1	7.1
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	197	335
V/C Ratio(X)	0.72	0.65
Avail Cap(c_a), veh/h	328	556
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	47.2	46.8
Incr Delay (d2), s/veh	5.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.9
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	52.2	48.9
LnGrp LOS	D	D
Approach Vol, veh/h	489	
Approach Delay, s/veh	50.5	
Approach LOS	D	
Timer - Assigned Phs		






HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing AM  
07/20/2022

Intersection

Int Delay, s/veh 0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	222	46	0	352
Future Vol, veh/h	0	55	222	46	0	352
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	57	231	48	0	367

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	140	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	882	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	882	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

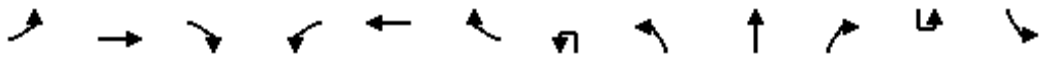
Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	- 882	-
HCM Lane V/C Ratio	-	- 0.065	-
HCM Control Delay (s)	-	- 9.4	-
HCM Lane LOS	-	- A	-
HCM 95th %tile Q(veh)	-	- 0.2	-

# HCM 6th Signalized Intersection Summary

Existing AM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/20/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations		↩	↩	↩	↩			↩	↩			↩
Traffic Volume (veh/h)	22	8	33	95	11	13	19	74	165	23	1	65
Future Volume (veh/h)	22	8	33	95	11	13	19	74	165	23	1	65
Initial Q (Qb), veh	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
Parking Bus, Adj	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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	23	8	35	100	12	14		78	174	24		68
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	378	93	231	491	114	134		148	621	84		133
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15		0.08	0.20	0.20		0.07
Sat Flow, veh/h	912	639	1585	1407	787	918		1781	3143	427		1781
Grp Volume(v), veh/h	31	0	35	100	0	26		78	97	101		68
Grp Sat Flow(s),veh/h/ln	1550	0	1585	1407	0	1705		1781	1777	1793		1781
Q Serve(g_s), s	0.0	0.0	0.5	1.2	0.0	0.3		1.1	1.2	1.2		0.9
Cycle Q Clear(g_c), s	0.4	0.0	0.5	1.6	0.0	0.3		1.1	1.2	1.2		0.9
Prop In Lane	0.74		1.00	1.00		0.54		1.00		0.24		1.00
Lane Grp Cap(c), veh/h	471	0	231	491	0	248		148	351	354		133
V/C Ratio(X)	0.07	0.00	0.15	0.20	0.00	0.10		0.53	0.28	0.28		0.51
Avail Cap(c_a), veh/h	2104	0	1975	2041	0	2125		856	2284	2305		717
HCM Platoon Ratio	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	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	9.5	0.0	9.6	10.0	0.0	9.5		11.3	8.7	8.7		11.4
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.2	0.0	0.2		2.9	0.4	0.4		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
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.4	0.0	0.1		0.4	0.3	0.3		0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	0.0	9.9	10.2	0.0	9.7		14.1	9.1	9.2		14.4
LnGrp LOS	A	A	A	B	A	A		B	A	A		B
Approach Vol, veh/h		66			126				276			
Approach Delay, s/veh		9.7			10.1				10.6			
Approach LOS		A			B				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	10.2		8.8	6.8	9.9		8.8				
Change Period (Y+Rc), s	* 4.7	5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s	* 10	32.9		31.9	* 12	30.9		31.9				
Max Q Clear Time (g_c+I1), s	2.9	3.2		2.5	3.1	3.4		3.6				
Green Ext Time (p_c), s	0.1	1.1		0.2	0.1	1.2		0.4				

### Intersection Summary

HCM 6th Ctrl Delay 10.4

HCM 6th LOS B

### 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

Existing AM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/20/2022



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	197	14
Future Volume (veh/h)	197	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	207	15
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	636	46
Arrive On Green	0.19	0.19
Sat Flow, veh/h	3362	242
Grp Volume(v), veh/h	109	113
Grp Sat Flow(s),veh/h/ln	1777	1827
Q Serve(g_s), s	1.4	1.4
Cycle Q Clear(g_c), s	1.4	1.4
Prop In Lane		0.13
Lane Grp Cap(c), veh/h	336	346
V/C Ratio(X)	0.32	0.33
Avail Cap(c_a), veh/h	2145	2205
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	9.0	9.0
Incr Delay (d2), s/veh	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.4
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	9.5	9.5
LnGrp LOS	A	A
Approach Vol, veh/h	290	
Approach Delay, s/veh	10.7	
Approach LOS	B	
Timer - Assigned Phs		

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

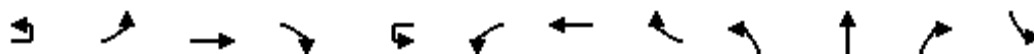
Existing PM  
07/21/2022

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	1371	63	0	855	99	0	0	123	0	0	52
Future Vol, veh/h	0	1371	63	0	855	99	0	0	123	0	0	52
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1507	69	0	940	109	0	0	135	0	0	57
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	-	0	-	-	-	-	470
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	540
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			12.5		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1			EBT			WBT			WBR		
Capacity (veh/h)												
HCM Lane V/C Ratio												
HCM Control Delay (s)	0											
HCM Lane LOS	A											
HCM 95th %tile Q(veh)												

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing PM  
07/21/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔↔	↔↔	↔		↔	↔↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	5	533	1205	181	12	51	714	148	106	136	10	214
Future Volume (veh/h)	5	533	1205	181	12	51	714	148	106	136	10	214
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.99	1.00		0.98	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		592	1339	201		57	793	164	118	151	11	172
Peak Hour Factor		0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		666	1609	716		73	1057	468	317	333	276	239
Arrive On Green		0.19	0.45	0.45		0.04	0.30	0.30	0.18	0.18	0.18	0.13
Sat Flow, veh/h		3456	3554	1582		1781	3554	1574	1781	1870	1548	1781
Grp Volume(v), veh/h		592	1339	201		57	793	164	118	151	11	172
Grp Sat Flow(s),veh/h/ln		1728	1777	1582		1781	1777	1574	1781	1870	1548	1781
Q Serve(g_s), s		17.3	34.3	8.3		3.3	20.9	8.5	6.0	7.5	0.6	9.6
Cycle Q Clear(g_c), s		17.3	34.3	8.3		3.3	20.9	8.5	6.0	7.5	0.6	9.6
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		666	1609	716		73	1057	468	317	333	276	239
V/C Ratio(X)		0.89	0.83	0.28		0.78	0.75	0.35	0.37	0.45	0.04	0.72
Avail Cap(c_a), veh/h		736	1822	811		108	1267	561	893	937	776	316
HCM Platoon Ratio		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
Uniform Delay (d), s/veh		40.8	24.9	17.8		49.3	33.0	28.6	37.5	38.1	35.3	43.1
Incr Delay (d2), s/veh		12.1	3.1	0.2		18.7	2.1	0.4	0.7	1.0	0.1	5.3
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
%ile BackOfQ(50%),veh/ln		8.1	13.6	2.8		1.8	8.7	3.1	2.7	3.5	0.2	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		52.9	28.0	18.0		67.9	35.0	29.0	38.2	39.1	35.3	48.4
LnGrp LOS		D	C	B		E	D	C	D	D	D	D
Approach Vol, veh/h			2132				1014			280		
Approach Delay, s/veh			34.0				35.9			38.6		
Approach LOS			C				D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	53.2		18.5	25.1	37.1		23.1				
Change Period (Y+Rc), s	* 4.7	6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	* 6.3	53.2		18.4	22.1	37.0		52.0				
Max Q Clear Time (g_c+I1), s	5.3	36.3		12.6	19.3	22.9		9.5				
Green Ext Time (p_c), s	0.0	8.9		1.3	0.7	4.6		1.3				

### Intersection Summary

HCM 6th Ctrl Delay	36.7
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.



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 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing PM  
07/21/2022






Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	95	171
Future Volume (veh/h)	95	171
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	198	190
Peak Hour Factor	0.90	0.90
Percent Heavy Veh, %	2	2
Cap, veh/h	251	425
Arrive On Green	0.13	0.13
Sat Flow, veh/h	1870	3170
Grp Volume(v), veh/h	198	190
Grp Sat Flow(s),veh/h/ln	1870	1585
Q Serve(g_s), s	10.6	5.7
Cycle Q Clear(g_c), s	10.6	5.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	251	425
V/C Ratio(X)	0.79	0.45
Avail Cap(c_a), veh/h	332	562
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	43.5	41.4
Incr Delay (d2), s/veh	9.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	2.3
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	52.5	42.1
LnGrp LOS	D	D
Approach Vol, veh/h	560	
Approach Delay, s/veh	47.7	
Approach LOS	D	
Timer - Assigned Phs		

HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing PM  
07/21/2022

Intersection

Int Delay, s/veh 0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	62	648	147	0	474
Future Vol, veh/h	0	62	648	147	0	474
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	67	697	158	0	510

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	428	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	575	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	575	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




















Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	575
HCM Lane V/C Ratio	-	-	0.116
HCM Control Delay (s)	-	-	12.1
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

# HCM 6th Signalized Intersection Summary

Existing PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	82	25	103	104	24	35	26	166	459	60	1	90
Future Volume (veh/h)	82	25	103	104	24	35	26	166	459	60	1	90
Initial Q (Qb), veh	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
Parking Bus, Adj	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					
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	89	27	112	113	26	38		180	499	65		98
Peak Hour Factor	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
Cap, veh/h	341	79	270	484	117	171		243	935	121		159
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17		0.14	0.30	0.30		0.09
Sat Flow, veh/h	889	465	1585	1383	686	1003		1781	3163	410		1781
Grp Volume(v), veh/h	116	0	112	113	0	64		180	279	285		98
Grp Sat Flow(s),veh/h/ln	1354	0	1585	1383	0	1690		1781	1777	1796		1781
Q Serve(g_s), s	1.7	0.0	2.1	0.0	0.0	1.1		3.3	4.4	4.4		1.8
Cycle Q Clear(g_c), s	2.8	0.0	2.1	1.9	0.0	1.1		3.3	4.4	4.4		1.8
Prop In Lane	0.77		1.00	1.00		0.59		1.00		0.23		1.00
Lane Grp Cap(c), veh/h	421	0	270	484	0	288		243	526	531		159
V/C Ratio(X)	0.28	0.00	0.41	0.23	0.00	0.22		0.74	0.53	0.54		0.62
Avail Cap(c_a), veh/h	1501	0	1466	1527	0	1563		994	1776	1795		563
HCM Platoon Ratio	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	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	12.7	0.0	12.4	12.3	0.0	12.0		13.9	9.9	9.9		14.7
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.2	0.0	0.4		4.4	0.8	0.8		3.8
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
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.7	0.6	0.0	0.4		1.3	1.3	1.3		0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	13.4	12.6	0.0	12.4		18.3	10.7	10.7		18.6
LnGrp LOS	B	A	B	B	A	B		B	B	B		B
Approach Vol, veh/h	228			177			744					
Approach Delay, s/veh	13.2			12.5			12.5					
Approach LOS	B			B			B					
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.7	15.0	10.8		9.3	13.4	10.8					
Change Period (Y+Rc), s	* 4.7	5.1	5.1		* 4.7	5.1	5.1					
Max Green Setting (Gmax), s	* 11	33.5	31.0		* 19	25.4	31.0					
Max Q Clear Time (g_c+I1), s	3.8	6.4	4.8		5.3	4.6	3.9					
Green Ext Time (p_c), s	0.1	3.5	1.1		0.4	1.8	0.7					

### Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

### 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

Existing PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	258	47
Future Volume (veh/h)	258	47
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	280	51
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	748	134
Arrive On Green	0.25	0.25
Sat Flow, veh/h	3009	541
Grp Volume(v), veh/h	164	167
Grp Sat Flow(s),veh/h/ln	1777	1773
Q Serve(g_s), s	2.6	2.6
Cycle Q Clear(g_c), s	2.6	2.6
Prop In Lane		0.30
Lane Grp Cap(c), veh/h	441	440
V/C Ratio(X)	0.37	0.38
Avail Cap(c_a), veh/h	1346	1343
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	10.4	10.5
Incr Delay (d2), s/veh	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	10.9	11.0
LnGrp LOS	B	B
Approach Vol, veh/h	429	
Approach Delay, s/veh	12.7	
Approach LOS	B	
Timer - Assigned Phs		

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

Existing + Project AM

07/21/2022

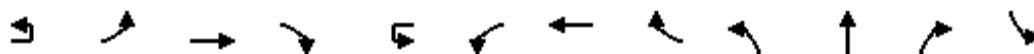
Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	575	71	0	1237	123	0	0	32	0	0	82
Future Vol, veh/h	0	575	71	0	1237	123	0	0	32	0	0	82
Conflicting Peds, #/hr	0	0	0	0	0	10	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	581	72	0	1249	124	0	0	32	0	0	83
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	-	-	-	635
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	421
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			15.8		
HCM LOS							A			C		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	-	-	-	-	417							
HCM Lane V/C Ratio	-	-	-	-	0.199							
HCM Control Delay (s)	0	-	-	-	15.8							
HCM Lane LOS	A	-	-	-	C							
HCM 95th %tile Q(veh)	-	-	-	-	0.7							

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing + Project AM

07/22/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔↔	↔↔	↔		↔	↔↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	2	246	527	153	4	28	1123	101	212	115	6	145
Future Volume (veh/h)	2	246	527	153	4	28	1123	101	212	115	6	145
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		0.99		1.00		0.99	1.00		0.98	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		276	592	172		31	1262	113	238	129	7	130
Peak Hour Factor		0.89	0.89	0.89		0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		339	973	431		370	1397	620	385	404	336	188
Arrive On Green		0.10	0.27	0.27		0.21	0.39	0.39	0.22	0.22	0.22	0.11
Sat Flow, veh/h		3456	3554	1576		1781	3554	1577	1781	1870	1554	1781
Grp Volume(v), veh/h		276	592	172		31	1262	113	238	129	7	130
Grp Sat Flow(s),veh/h/ln		1728	1777	1576		1781	1777	1577	1781	1870	1554	1781
Q Serve(g_s), s		8.6	15.9	9.8		1.5	36.6	5.1	13.2	6.4	0.4	7.7
Cycle Q Clear(g_c), s		8.6	15.9	9.8		1.5	36.6	5.1	13.2	6.4	0.4	7.7
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		339	973	431		370	1397	620	385	404	336	188
V/C Ratio(X)		0.81	0.61	0.40		0.08	0.90	0.18	0.62	0.32	0.02	0.69
Avail Cap(c_a), veh/h		397	1744	774		370	1485	659	845	887	737	310
HCM Platoon Ratio		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
Uniform Delay (d), s/veh		48.4	34.7	32.5		35.0	31.3	21.7	38.9	36.2	33.8	47.3
Incr Delay (d2), s/veh		10.7	0.6	0.6		0.1	7.8	0.1	1.6	0.5	0.0	4.5
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
%ile BackOfQ(50%),veh/ln		4.1	6.6	3.6		0.7	15.9	1.8	6.0	3.0	0.2	3.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		59.1	35.3	33.0		35.1	39.1	21.9	40.5	36.6	33.9	51.8
LnGrp LOS		E	D	C		D	D	C	D	D	C	D
Approach Vol, veh/h			1040				1406			374		
Approach Delay, s/veh			41.3				37.6			39.0		
Approach LOS			D				D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.0	36.2		16.2	15.9	49.3		28.3				
Change Period (Y+Rc), s	6.2	* 6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	5.0	* 54		19.1	12.6	45.8		52.0				
Max Q Clear Time (g_c+I1), s	3.5	17.9		10.1	10.6	38.6		15.2				
Green Ext Time (p_c), s	0.0	4.4		1.4	0.2	4.5		1.6				

### Intersection Summary

HCM 6th Ctrl Delay	40.9
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.

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

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing + Project AM

07/22/2022



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	87	192
Future Volume (veh/h)	87	192
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	143	216
Peak Hour Factor	0.89	0.89
Percent Heavy Veh, %	2	2
Cap, veh/h	197	334
Arrive On Green	0.11	0.11
Sat Flow, veh/h	1870	3170
Grp Volume(v), veh/h	143	216
Grp Sat Flow(s),veh/h/ln	1870	1585
Q Serve(g_s), s	8.1	7.2
Cycle Q Clear(g_c), s	8.1	7.2
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	197	334
V/C Ratio(X)	0.73	0.65
Avail Cap(c_a), veh/h	326	552
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	47.5	47.1
Incr Delay (d2), s/veh	5.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	2.9
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	52.5	49.2
LnGrp LOS	D	D
Approach Vol, veh/h	489	
Approach Delay, s/veh	50.9	
Approach LOS	D	
Timer - Assigned Phs		




HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing + Project AM

07/21/2022

Intersection

Int Delay, s/veh 0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	55	222	52	0	352
Future Vol, veh/h	0	55	222	52	0	352
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	57	231	54	0	367

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	143	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	879	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	879	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




















Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	879
HCM Lane V/C Ratio	-	-	0.065
HCM Control Delay (s)	-	-	9.4
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

# HCM 6th Signalized Intersection Summary

Existing + Project AM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	22	8	33	95	11	13	19	74	166	23	1	66
Future Volume (veh/h)	22	8	33	95	11	13	19	74	166	23	1	66
Initial Q (Qb), veh	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
Parking Bus, Adj	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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	23	8	35	100	12	14		78	175	24		69
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		0.95	0.95	0.95		0.95
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	378	93	231	491	114	134		148	619	84		135
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15		0.08	0.20	0.20		0.08
Sat Flow, veh/h	912	639	1585	1407	787	918		1781	3146	425		1781
Grp Volume(v), veh/h	31	0	35	100	0	26		78	98	101		69
Grp Sat Flow(s),veh/h/ln	1550	0	1585	1407	0	1705		1781	1777	1794		1781
Q Serve(g_s), s	0.0	0.0	0.5	1.2	0.0	0.3		1.1	1.2	1.2		1.0
Cycle Q Clear(g_c), s	0.4	0.0	0.5	1.6	0.0	0.3		1.1	1.2	1.2		1.0
Prop In Lane	0.74		1.00	1.00		0.54		1.00		0.24		1.00
Lane Grp Cap(c), veh/h	470	0	231	491	0	248		148	350	353		135
V/C Ratio(X)	0.07	0.00	0.15	0.20	0.00	0.10		0.53	0.28	0.29		0.51
Avail Cap(c_a), veh/h	2104	0	1975	2040	0	2125		856	2284	2305		717
HCM Platoon Ratio	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	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	9.5	0.0	9.6	10.0	0.0	9.5		11.3	8.7	8.8		11.4
Incr Delay (d2), s/veh	0.1	0.0	0.3	0.2	0.0	0.2		2.9	0.4	0.4		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
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.4	0.0	0.1		0.4	0.3	0.3		0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	0.0	9.9	10.2	0.0	9.7		14.1	9.2	9.2		14.4
LnGrp LOS	A	A	A	B	A	A		B	A	A		B
Approach Vol, veh/h		66			126				277			
Approach Delay, s/veh		9.7			10.1				10.6			
Approach LOS		A			B				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	10.1		8.8	6.8	9.9		8.8				
Change Period (Y+Rc), s	* 4.7	5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s	* 10	32.9		31.9	* 12	30.9		31.9				
Max Q Clear Time (g_c+I1), s	3.0	3.2		2.5	3.1	3.4		3.6				
Green Ext Time (p_c), s	0.1	1.1		0.2	0.1	1.2		0.4				

### Intersection Summary

HCM 6th Ctrl Delay 10.5

HCM 6th LOS B

### 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

Existing + Project AM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	197	14
Future Volume (veh/h)	197	14
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	207	15
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	2	2
Cap, veh/h	637	46
Arrive On Green	0.19	0.19
Sat Flow, veh/h	3362	242
Grp Volume(v), veh/h	109	113
Grp Sat Flow(s),veh/h/ln	1777	1827
Q Serve(g_s), s	1.4	1.4
Cycle Q Clear(g_c), s	1.4	1.4
Prop In Lane		0.13
Lane Grp Cap(c), veh/h	336	346
V/C Ratio(X)	0.32	0.33
Avail Cap(c_a), veh/h	2145	2205
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	9.0	9.0
Incr Delay (d2), s/veh	0.6	0.5
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.4
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	9.5	9.5
LnGrp LOS	A	A
Approach Vol, veh/h	291	
Approach Delay, s/veh	10.7	
Approach LOS	B	
Timer - Assigned Phs		

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

Existing + Project PM

07/21/2022

Intersection												
Int Delay, s/veh	0.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	1376	63	0	855	104	0	0	123	0	0	66
Future Vol, veh/h	0	1376	63	0	855	104	0	0	123	0	0	66
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1512	69	0	940	114	0	0	135	0	0	73
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	-	-	-	470
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	540
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			12.7		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	-	-	-	-	540							
HCM Lane V/C Ratio	-	-	-	-	0.134							
HCM Control Delay (s)	0	-	-	-	12.7							
HCM Lane LOS	A	-	-	-	B							
HCM 95th %tile Q(veh)	-	-	-	-	0.5							



# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing + Project PM

07/21/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔↔	↔↔	↔		↔	↔↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	5	541	1205	181	17	51	723	149	106	136	10	214
Future Volume (veh/h)	5	541	1205	181	17	51	723	149	106	136	10	214
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.99	1.00		0.98	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		601	1339	201		57	803	166	118	151	11	172
Peak Hour Factor		0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	2
Cap, veh/h		673	1613	718		73	1054	467	317	333	275	239
Arrive On Green		0.19	0.45	0.45		0.04	0.30	0.30	0.18	0.18	0.18	0.13
Sat Flow, veh/h		3456	3554	1582		1781	3554	1574	1781	1870	1548	1781
Grp Volume(v), veh/h		601	1339	201		57	803	166	118	151	11	172
Grp Sat Flow(s),veh/h/ln		1728	1777	1582		1781	1777	1574	1781	1870	1548	1781
Q Serve(g_s), s		17.7	34.4	8.3		3.3	21.4	8.6	6.1	7.5	0.6	9.6
Cycle Q Clear(g_c), s		17.7	34.4	8.3		3.3	21.4	8.6	6.1	7.5	0.6	9.6
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		673	1613	718		73	1054	467	317	333	275	239
V/C Ratio(X)		0.89	0.83	0.28		0.78	0.76	0.36	0.37	0.45	0.04	0.72
Avail Cap(c_a), veh/h		733	1816	808		108	1263	559	890	934	773	315
HCM Platoon Ratio		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
Uniform Delay (d), s/veh		40.9	24.9	17.8		49.4	33.3	28.8	37.7	38.3	35.4	43.2
Incr Delay (d2), s/veh		12.7	3.1	0.2		18.8	2.3	0.5	0.7	1.0	0.1	5.4
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
%ile BackOfQ(50%),veh/ln		8.3	13.6	2.8		1.8	8.9	3.1	2.7	3.6	0.2	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		53.6	28.0	18.0		68.3	35.6	29.3	38.4	39.2	35.5	48.6
LnGrp LOS		D	C	B		E	D	C	D	D	D	D
Approach Vol, veh/h			2141				1026			280		
Approach Delay, s/veh			34.3				36.4			38.7		
Approach LOS			C				D			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.0	53.4		18.6	25.4	37.1		23.1				
Change Period (Y+Rc), s	* 4.7	6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	* 6.3	53.2		18.4	22.1	37.0		52.0				
Max Q Clear Time (g_c+I1), s	5.3	36.4		12.7	19.7	23.4		9.5				
Green Ext Time (p_c), s	0.0	8.8		1.3	0.6	4.6		1.3				

### Intersection Summary

HCM 6th Ctrl Delay	37.0
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.



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 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing + Project PM  
07/21/2022



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	95	171
Future Volume (veh/h)	95	171
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	198	190
Peak Hour Factor	0.90	0.90
Percent Heavy Veh, %	2	2
Cap, veh/h	251	425
Arrive On Green	0.13	0.13
Sat Flow, veh/h	1870	3170
Grp Volume(v), veh/h	198	190
Grp Sat Flow(s),veh/h/ln	1870	1585
Q Serve(g_s), s	10.7	5.7
Cycle Q Clear(g_c), s	10.7	5.7
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	251	425
V/C Ratio(X)	0.79	0.45
Avail Cap(c_a), veh/h	331	560
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	43.7	41.5
Incr Delay (d2), s/veh	9.1	0.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	2.3
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	52.8	42.3
LnGrp LOS	D	D
Approach Vol, veh/h	560	
Approach Delay, s/veh	47.9	
Approach LOS	D	
Timer - Assigned Phs		




HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing + Project PM

07/21/2022

Intersection

Int Delay, s/veh 0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	63	649	155	0	474
Future Vol, veh/h	0	63	649	155	0	474
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	68	698	167	0	510

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	433	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	571	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	571	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-




















Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	571
HCM Lane V/C Ratio	-	-	0.119
HCM Control Delay (s)	-	-	12.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.4

# HCM 6th Signalized Intersection Summary

Existing + Project PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	82	25	103	104	24	35	26	166	461	60	1	92
Future Volume (veh/h)	82	25	103	104	24	35	26	166	461	60	1	92
Initial Q (Qb), veh	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
Parking Bus, Adj	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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	89	27	112	113	26	38		180	501	65		100
Peak Hour Factor	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
Cap, veh/h	341	79	270	483	117	171		243	937	121		161
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17		0.14	0.30	0.30		0.09
Sat Flow, veh/h	889	465	1585	1383	686	1003		1781	3165	409		1781
Grp Volume(v), veh/h	116	0	112	113	0	64		180	280	286		100
Grp Sat Flow(s),veh/h/ln	1353	0	1585	1383	0	1690		1781	1777	1797		1781
Q Serve(g_s), s	1.7	0.0	2.1	0.0	0.0	1.1		3.3	4.4	4.5		1.8
Cycle Q Clear(g_c), s	2.8	0.0	2.1	1.9	0.0	1.1		3.3	4.4	4.5		1.8
Prop In Lane	0.77		1.00	1.00		0.59		1.00		0.23		1.00
Lane Grp Cap(c), veh/h	420	0	270	483	0	288		243	526	532		161
V/C Ratio(X)	0.28	0.00	0.41	0.23	0.00	0.22		0.74	0.53	0.54		0.62
Avail Cap(c_a), veh/h	1497	0	1461	1523	0	1558		991	1770	1790		562
HCM Platoon Ratio	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	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	12.8	0.0	12.4	12.4	0.0	12.0		13.9	9.9	9.9		14.7
Incr Delay (d2), s/veh	0.4	0.0	1.0	0.2	0.0	0.4		4.4	0.8	0.8		3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0		0.0
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.7	0.6	0.0	0.4		1.3	1.3	1.3		0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	0.0	13.5	12.6	0.0	12.4		18.3	10.7	10.7		18.6
LnGrp LOS	B	A	B	B	A	B		B	B	B		B
Approach Vol, veh/h		228			177				746			
Approach Delay, s/veh		13.3			12.5				12.6			
Approach LOS		B			B				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.7	15.1		10.8	9.3	13.5		10.8				
Change Period (Y+Rc), s	* 4.7	5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s	* 11	33.5		31.0	* 19	25.4		31.0				
Max Q Clear Time (g_c+I1), s	3.8	6.5		4.8	5.3	4.6		3.9				
Green Ext Time (p_c), s	0.1	3.5		1.1	0.4	1.8		0.7				

### Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

### Notes

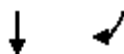
User approved ignoring U-Turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

# HCM 6th Signalized Intersection Summary

Existing + Project PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022



Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (veh/h)	258	47
Future Volume (veh/h)	258	47
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	280	51
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	752	135
Arrive On Green	0.25	0.25
Sat Flow, veh/h	3009	541
Grp Volume(v), veh/h	164	167
Grp Sat Flow(s),veh/h/ln	1777	1773
Q Serve(g_s), s	2.6	2.6
Cycle Q Clear(g_c), s	2.6	2.6
Prop In Lane		0.30
Lane Grp Cap(c), veh/h	444	443
V/C Ratio(X)	0.37	0.38
Avail Cap(c_a), veh/h	1342	1339
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	10.4	10.4
Incr Delay (d2), s/veh	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.8
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	10.9	11.0
LnGrp LOS	B	B
Approach Vol, veh/h	431	
Approach Delay, s/veh	12.7	
Approach LOS	B	
Timer - Assigned Phs		

## Friday LOS Analysis Worksheets

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

Existing Friday AM  
07/20/2022

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	452	38	0	978	120	0	0	11	0	0	62
Future Vol, veh/h	0	452	38	0	978	120	0	0	11	0	0	62
Conflicting Peds, #/hr	0	0	0	0	0	10	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	466	39	0	1008	124	0	0	11	0	0	64
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	-	-	-	514
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	505
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	500
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			13.3		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	-	-	-	-	500							
HCM Lane V/C Ratio	-	-	-	-	0.128							
HCM Control Delay (s)	0	-	-	-	13.3							
HCM Lane LOS	A	-	-	-	B							
HCM 95th %tile Q(veh)	-	-	-	-	0.4							

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday AM

07/20/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations		↔↔	↔↔	↔		↔	↔↔	↔	↔	↔	↔	
Traffic Volume (veh/h)	13	191	414	50	2	12	918	79	61	43	8	1
Future Volume (veh/h)	13	191	414	50	2	12	918	79	61	43	8	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.99	1.00		0.97	
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h		201	436	53		13	966	83	64	45	8	
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	
Cap, veh/h		294	1377	612		143	1411	626	261	274	226	
Arrive On Green		0.09	0.39	0.39		0.08	0.40	0.40	0.15	0.15	0.15	
Sat Flow, veh/h		3456	3554	1579		1781	3554	1577	1781	1870	1540	
Grp Volume(v), veh/h		201	436	53		13	966	83	64	45	8	
Grp Sat Flow(s),veh/h/ln		1728	1777	1579		1781	1777	1577	1781	1870	1540	
Q Serve(g_s), s		4.4	6.6	1.6		0.5	17.4	2.6	2.5	1.6	0.3	
Cycle Q Clear(g_c), s		4.4	6.6	1.6		0.5	17.4	2.6	2.5	1.6	0.3	
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h		294	1377	612		143	1411	626	261	274	226	
V/C Ratio(X)		0.68	0.32	0.09		0.09	0.68	0.13	0.25	0.16	0.04	
Avail Cap(c_a), veh/h		563	2470	1097		143	2103	933	1197	1257	1034	
HCM Platoon Ratio		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	
Uniform Delay (d), s/veh		34.4	16.5	15.0		33.0	19.3	14.9	29.2	28.9	28.3	
Incr Delay (d2), s/veh		2.8	0.1	0.1		0.3	0.6	0.1	0.5	0.3	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	
%ile BackOfQ(50%),veh/ln		1.8	2.4	0.5		0.2	6.2	0.8	1.1	0.7	0.1	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		37.2	16.7	15.1		33.2	19.9	15.0	29.7	29.2	28.4	
LnGrp LOS		D	B	B		C	B	B	C	C	C	
Approach Vol, veh/h			690				1062			117		
Approach Delay, s/veh			22.5				19.7			29.4		
Approach LOS			C				B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.4	36.2		12.8	11.7	36.9		15.9				
Change Period (Y+Rc), s	6.2	* 6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	5.0	* 54		19.1	12.6	45.8		52.0				
Max Q Clear Time (g_c+I1), s	2.5	8.6		7.0	6.4	19.4		4.5				
Green Ext Time (p_c), s	0.0	2.9		1.2	0.3	6.9		0.5				

### Intersection Summary

HCM 6th Ctrl Delay	23.6
HCM 6th LOS	C

### Notes

User approved volume balancing among the lanes for turning movement.

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

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday AM

07/20/2022






Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	99	50	203
Future Volume (veh/h)	99	50	203
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Work Zone On Approach		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870
Adj Flow Rate, veh/h	78	89	214
Peak Hour Factor	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2
Cap, veh/h	190	199	338
Arrive On Green	0.11	0.11	0.11
Sat Flow, veh/h	1781	1870	3170
Grp Volume(v), veh/h	78	89	214
Grp Sat Flow(s),veh/h/ln	1781	1870	1585
Q Serve(g_s), s	3.2	3.5	5.0
Cycle Q Clear(g_c), s	3.2	3.5	5.0
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	190	199	338
V/C Ratio(X)	0.41	0.45	0.63
Avail Cap(c_a), veh/h	440	462	782
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.3	32.4	33.1
Incr Delay (d2), s/veh	1.4	1.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.6	2.0
Unsig. Movement Delay, s/veh			
LnGrp Delay(d),s/veh	33.7	34.0	35.1
LnGrp LOS	C	C	D
Approach Vol, veh/h		381	
Approach Delay, s/veh		34.6	
Approach LOS		C	
Timer - Assigned Phs			

HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing Friday AM  
07/20/2022

Intersection

Int Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	50	277	53	0	323
Future Vol, veh/h	0	50	277	53	0	323
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	292	56	0	340

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	174	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	839	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	839	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-






















Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	839
HCM Lane V/C Ratio	-	-	0.063
HCM Control Delay (s)	-	-	9.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

# HCM 6th Signalized Intersection Summary

Existing Friday AM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/20/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	17	7	41	82	15	17	18	73	208	29	47	198
Future Volume (veh/h)	17	7	41	82	15	17	18	73	208	29	47	198
Initial Q (Qb), veh	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	
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
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
Adj Flow Rate, veh/h	18	7	44	87	16	18		78	221	31	50	211
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	367	100	229	489	116	131		148	676	94	104	606
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14		0.08	0.22	0.22	0.06	0.19
Sat Flow, veh/h	866	692	1585	1409	804	904		1781	3135	434	1781	3174
Grp Volume(v), veh/h	25	0	44	87	0	34		78	124	128	50	117
Grp Sat Flow(s),veh/h/ln	1558	0	1585	1409	0	1708		1781	1777	1792	1781	1777
Q Serve(g_s), s	0.0	0.0	0.6	1.1	0.0	0.4		1.1	1.5	1.5	0.7	1.5
Cycle Q Clear(g_c), s	0.3	0.0	0.6	1.4	0.0	0.4		1.1	1.5	1.5	0.7	1.5
Prop In Lane	0.72		1.00	1.00		0.53		1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	467	0	229	489	0	247		148	383	386	104	339
V/C Ratio(X)	0.05	0.00	0.19	0.18	0.00	0.14		0.53	0.32	0.33	0.48	0.34
Avail Cap(c_a), veh/h	2158	0	2035	2093	0	2192		924	2281	2301	646	2003
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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.5	0.0	9.6	9.9	0.0	9.6		11.3	8.5	8.5	11.7	9.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.2	0.0	0.3		2.9	0.5	0.5	3.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.3	0.0	0.1		0.4	0.4	0.4	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	0.0	10.0	10.1	0.0	9.8		14.2	9.0	9.0	15.1	9.6
LnGrp LOS	A	A	B	B	A	A		B	A	A	B	A
Approach Vol, veh/h		69			121				330			288
Approach Delay, s/veh		9.9			10.0				10.2			10.6
Approach LOS		A			B				B			B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	10.6		8.8	6.8	10.0		8.8				
Change Period (Y+Rc), s	* 4.7	5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s	* 9.3	32.9		32.9	* 13	28.9		32.9				
Max Q Clear Time (g_c+I1), s	2.7	3.5		2.6	3.1	3.5		3.4				
Green Ext Time (p_c), s	0.0	1.4		0.2	0.1	1.3		0.4				

### Intersection Summary

HCM 6th Ctrl Delay 10.3

HCM 6th LOS B

### Notes

User approved ignoring U-Turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	25
Future Volume (veh/h)	25
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	27
Peak Hour Factor	0.94
Percent Heavy Veh, %	2
Cap, veh/h	77
Arrive On Green	0.19
Sat Flow, veh/h	401
Grp Volume(v), veh/h	121
Grp Sat Flow(s),veh/h/ln	1798
Q Serve(g_s), s	1.5
Cycle Q Clear(g_c), s	1.5
Prop In Lane	0.22
Lane Grp Cap(c), veh/h	343
V/C Ratio(X)	0.35
Avail Cap(c_a), veh/h	2027
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	9.0
Incr Delay (d2), s/veh	0.6
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	9.6
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

Existing Friday PM  
07/21/2022

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑			↑			↑
Traffic Vol, veh/h	0	1241	72	0	828	128	0	0	106	0	0	71
Future Vol, veh/h	0	1241	72	0	828	128	0	0	106	0	0	71
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1320	77	0	881	136	0	0	113	0	0	76

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	-	0	-	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0
Stage 1	0	-	0	0	-	-	0	0
Stage 2	0	-	0	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	12.4
HCM LOS			A	B

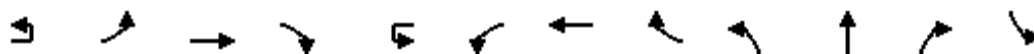
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-	564
HCM Lane V/C Ratio	-	-	-	-	0.134
HCM Control Delay (s)	0	-	-	-	12.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	-	0.5

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday PM

07/22/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔↔	↔↔	↔		↔	↔↔	↔	↔	↔	↔	↔
Traffic Volume (veh/h)	10	462	1090	147	26	36	611	136	85	113	15	286
Future Volume (veh/h)	10	462	1090	147	26	36	611	136	85	113	15	286
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.99	1.00		0.97	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		502	1185	160		39	664	148	92	123	16	210
Peak Hour Factor		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
Cap, veh/h		587	1578	702		58	1076	477	296	311	257	285
Arrive On Green		0.17	0.44	0.44		0.03	0.30	0.30	0.17	0.17	0.17	0.16
Sat Flow, veh/h		3456	3554	1581		1781	3554	1574	1781	1870	1545	1781
Grp Volume(v), veh/h		502	1185	160		39	664	148	92	123	16	210
Grp Sat Flow(s),veh/h/ln		1728	1777	1581		1781	1777	1574	1781	1870	1545	1781
Q Serve(g_s), s		14.4	28.3	6.4		2.2	16.3	7.4	4.6	6.0	0.9	11.4
Cycle Q Clear(g_c), s		14.4	28.3	6.4		2.2	16.3	7.4	4.6	6.0	0.9	11.4
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		587	1578	702		58	1076	477	296	311	257	285
V/C Ratio(X)		0.85	0.75	0.23		0.67	0.62	0.31	0.31	0.40	0.06	0.74
Avail Cap(c_a), veh/h		750	1856	826		110	1291	572	909	955	789	322
HCM Platoon Ratio		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
Uniform Delay (d), s/veh		41.1	23.6	17.5		48.7	30.4	27.3	37.4	37.9	35.8	40.8
Incr Delay (d2), s/veh		7.8	1.5	0.2		12.3	0.6	0.4	0.6	0.8	0.1	7.6
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln		6.4	10.9	2.2		1.1	6.6	2.7	2.1	2.8	0.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		48.8	25.1	17.7		61.1	31.1	27.7	37.9	38.7	35.9	48.4
LnGrp LOS		D	C	B		E	C	C	D	D	D	D
Approach Vol, veh/h			1847				851			231		
Approach Delay, s/veh			30.9				31.9			38.2		
Approach LOS			C				C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	51.4		20.9	22.4	37.1		21.5				
Change Period (Y+Rc), s	* 4.7	6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	* 6.3	53.2		18.4	22.1	37.0		52.0				
Max Q Clear Time (g_c+I1), s	4.2	30.3		15.2	16.4	18.3		8.0				
Green Ext Time (p_c), s	0.0	8.9		1.1	0.9	4.3		1.1				

### Intersection Summary

HCM 6th Ctrl Delay	35.0
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.



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 2: Grizzly Island Road/Sunset Avenue & Highway 12




Existing Friday PM  
07/22/2022



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	100	253
Future Volume (veh/h)	100	253
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	250	275
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	299	507
Arrive On Green	0.16	0.16
Sat Flow, veh/h	1870	3170
Grp Volume(v), veh/h	250	275
Grp Sat Flow(s),veh/h/ln	1870	1585
Q Serve(g_s), s	13.2	8.1
Cycle Q Clear(g_c), s	13.2	8.1
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	299	507
V/C Ratio(X)	0.84	0.54
Avail Cap(c_a), veh/h	338	573
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	41.5	39.4
Incr Delay (d2), s/veh	15.1	0.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.2	3.2
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	56.6	40.3
LnGrp LOS	E	D
Approach Vol, veh/h	735	
Approach Delay, s/veh	48.1	
Approach LOS	D	
Timer - Assigned Phs		

HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing Friday PM  
07/21/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	60	603	110	0	596
Future Vol, veh/h	0	60	603	110	0	596
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	64	641	117	0	634

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	379	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	619	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	619	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		




















Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	619
HCM Lane V/C Ratio	-	-	0.103
HCM Control Delay (s)	-	-	11.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3



# HCM 6th Signalized Intersection Summary

Existing Friday PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	93	30	106	117	32	35	28	141	436	62	2	106
Future Volume (veh/h)	93	30	106	117	32	35	28	141	436	62	2	106
Initial Q (Qb), veh	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
Parking Bus, Adj	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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	96	31	109	121	33	36		145	449	64		109
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		0.97	0.97	0.97		0.97
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	348	87	286	502	148	161		198	860	122		170
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18		0.11	0.28	0.28		0.10
Sat Flow, veh/h	876	481	1585	1378	818	892		1781	3125	443		1781
Grp Volume(v), veh/h	127	0	109	121	0	69		145	254	259		109
Grp Sat Flow(s),veh/h/ln	1358	0	1585	1378	0	1710		1781	1777	1791		1781
Q Serve(g_s), s	1.8	0.0	2.0	0.0	0.0	1.1		2.6	4.0	4.1		2.0
Cycle Q Clear(g_c), s	3.0	0.0	2.0	2.0	0.0	1.1		2.6	4.0	4.1		2.0
Prop In Lane	0.76		1.00	1.00		0.52		1.00		0.25		1.00
Lane Grp Cap(c), veh/h	435	0	286	502	0	309		198	489	493		170
V/C Ratio(X)	0.29	0.00	0.38	0.24	0.00	0.22		0.73	0.52	0.52		0.64
Avail Cap(c_a), veh/h	1514	0	1480	1540	0	1596		928	1701	1715		660
HCM Platoon Ratio	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	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	12.4	0.0	12.0	12.0	0.0	11.6		14.3	10.2	10.2		14.5
Incr Delay (d2), s/veh	0.4	0.0	0.8	0.2	0.0	0.4		5.2	0.9	0.9		4.0
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
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.6	0.7	0.0	0.4		1.1	1.2	1.2		0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	12.8	12.2	0.0	12.0		19.5	11.0	11.1		18.5
LnGrp LOS	B	A	B	B	A	B		B	B	B		B
Approach Vol, veh/h	236		190				658					
Approach Delay, s/veh	12.8		12.1				12.9					
Approach LOS	B		B				B					
Timer - Assigned Phs	1	2	4		5	6	8					
Phs Duration (G+Y+Rc), s	7.9	14.2	11.1		8.4	13.7	11.1					
Change Period (Y+Rc), s	* 4.7	5.1	5.1		* 4.7	5.1	5.1					
Max Green Setting (Gmax), s	* 12	31.8	31.0		* 17	26.8	31.0					
Max Q Clear Time (g_c+I1), s	4.0	6.1	5.0		4.6	5.5	4.0					
Green Ext Time (p_c), s	0.1	3.1	1.1		0.3	2.5	0.7					

### Intersection Summary

HCM 6th Ctrl Delay 12.7

HCM 6th LOS B

### 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

Existing Friday PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	372	55
Future Volume (veh/h)	372	55
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	384	57
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	2	2
Cap, veh/h	807	119
Arrive On Green	0.26	0.26
Sat Flow, veh/h	3107	458
Grp Volume(v), veh/h	218	223
Grp Sat Flow(s),veh/h/ln	1777	1788
Q Serve(g_s), s	3.4	3.5
Cycle Q Clear(g_c), s	3.4	3.5
Prop In Lane		0.26
Lane Grp Cap(c), veh/h	462	465
V/C Ratio(X)	0.47	0.48
Avail Cap(c_a), veh/h	1434	1443
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	10.4	10.4
Incr Delay (d2), s/veh	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	11.1	11.2
LnGrp LOS	B	B
Approach Vol, veh/h	550	
Approach Delay, s/veh	12.6	
Approach LOS	B	
Timer - Assigned Phs		

HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

Existing Friday + Project AM

07/21/2022

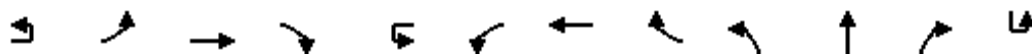
Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	455	38	0	978	123	0	0	11	0	0	70
Future Vol, veh/h	0	455	38	0	978	123	0	0	11	0	0	70
Conflicting Peds, #/hr	0	0	0	0	0	10	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	469	39	0	1008	127	0	0	11	0	0	72
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	-	-	-	514
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	505
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	500
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			13.4		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	-	-	-	-	500							
HCM Lane V/C Ratio	-	-	-	-	0.144							
HCM Control Delay (s)	0	-	-	-	13.4							
HCM Lane LOS	A	-	-	-	B							
HCM 95th %tile Q(veh)	-	-	-	-	0.5							

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday + Project AM

07/21/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBU
Lane Configurations		↗↘	↗↗	↗		↘↗	↗↗	↗	↘	↗	↗	
Traffic Volume (veh/h)	13	197	414	50	5	12	923	79	61	43	8	1
Future Volume (veh/h)	13	197	414	50	5	12	923	79	61	43	8	1
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.99	1.00		0.97	
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	
Adj Flow Rate, veh/h		207	436	53		13	972	83	64	45	8	
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	
Percent Heavy Veh, %		2	2	2		2	2	2	2	2	2	
Cap, veh/h		301	1374	610		146	1407	624	261	274	225	
Arrive On Green		0.09	0.39	0.39		0.08	0.40	0.40	0.15	0.15	0.15	
Sat Flow, veh/h		3456	3554	1579		1781	3554	1577	1781	1870	1540	
Grp Volume(v), veh/h		207	436	53		13	972	83	64	45	8	
Grp Sat Flow(s),veh/h/ln		1728	1777	1579		1781	1777	1577	1781	1870	1540	
Q Serve(g_s), s		4.5	6.7	1.7		0.5	17.6	2.6	2.5	1.6	0.3	
Cycle Q Clear(g_c), s		4.5	6.7	1.7		0.5	17.6	2.6	2.5	1.6	0.3	
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	
Lane Grp Cap(c), veh/h		301	1374	610		146	1407	624	261	274	225	
V/C Ratio(X)		0.69	0.32	0.09		0.09	0.69	0.13	0.25	0.16	0.04	
Avail Cap(c_a), veh/h		561	2464	1095		146	2098	931	1194	1253	1032	
HCM Platoon Ratio		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	
Uniform Delay (d), s/veh		34.4	16.6	15.1		32.9	19.5	14.9	29.3	29.0	28.4	
Incr Delay (d2), s/veh		2.8	0.1	0.1		0.3	0.6	0.1	0.5	0.3	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	
%ile BackOfQ(50%),veh/ln		1.9	2.4	0.5		0.2	6.3	0.8	1.1	0.7	0.1	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		37.2	16.8	15.2		33.2	20.1	15.0	29.8	29.2	28.5	
LnGrp LOS		D	B	B		C	C	B	C	C	C	
Approach Vol, veh/h			696				1068			117		
Approach Delay, s/veh			22.7				19.9			29.5		
Approach LOS			C				B			C		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.6	36.2		12.9	11.8	36.9		16.0				
Change Period (Y+Rc), s	6.2	* 6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	5.0	* 54		19.1	12.6	45.8		52.0				
Max Q Clear Time (g_c+I1), s	2.5	8.7		7.0	6.5	19.6		4.5				
Green Ext Time (p_c), s	0.0	2.9		1.2	0.3	7.0		0.5				

### Intersection Summary

HCM 6th Ctrl Delay	23.7
HCM 6th LOS	C

### Notes

User approved volume balancing among the lanes for turning movement.

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 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday + Project AM  
07/21/2022






Movement	SBL	SBT	SBR
Lane Configurations			
Traffic Volume (veh/h)	99	50	203
Future Volume (veh/h)	99	50	203
Initial Q (Qb), veh	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00
Work Zone On Approach		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870
Adj Flow Rate, veh/h	78	89	214
Peak Hour Factor	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2
Cap, veh/h	190	199	337
Arrive On Green	0.11	0.11	0.11
Sat Flow, veh/h	1781	1870	3170
Grp Volume(v), veh/h	78	89	214
Grp Sat Flow(s),veh/h/ln	1781	1870	1585
Q Serve(g_s), s	3.2	3.5	5.0
Cycle Q Clear(g_c), s	3.2	3.5	5.0
Prop In Lane	1.00		1.00
Lane Grp Cap(c), veh/h	190	199	337
V/C Ratio(X)	0.41	0.45	0.63
Avail Cap(c_a), veh/h	438	460	780
HCM Platoon Ratio	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.4	32.5	33.2
Incr Delay (d2), s/veh	1.4	1.6	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	1.6	2.0
Unsig. Movement Delay, s/veh			
LnGrp Delay(d),s/veh	33.8	34.1	35.2
LnGrp LOS	C	C	D
Approach Vol, veh/h		381	
Approach Delay, s/veh		34.7	
Approach LOS		C	
Timer - Assigned Phs			

HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing Friday + Project AM  
07/21/2022

Intersection

Int Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	50	277	59	0	323
Future Vol, veh/h	0	50	277	59	0	323
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	53	292	62	0	340

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	177	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	835	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	835	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	835
HCM Lane V/C Ratio	-	-	0.063
HCM Control Delay (s)	-	-	9.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

# HCM 6th Signalized Intersection Summary

Existing Friday + Project AM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↩	↩	↩	↩			↩	↩		↩	↩
Traffic Volume (veh/h)	17	7	41	82	15	17	18	73	209	29	48	198
Future Volume (veh/h)	17	7	41	82	15	17	18	73	209	29	48	198
Initial Q (Qb), veh	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	
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
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
Adj Flow Rate, veh/h	18	7	44	87	16	18		78	222	31	51	211
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2	2	2
Cap, veh/h	367	100	229	489	116	131		148	673	93	106	606
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14		0.08	0.21	0.21	0.06	0.19
Sat Flow, veh/h	866	692	1585	1409	804	904		1781	3137	432	1781	3174
Grp Volume(v), veh/h	25	0	44	87	0	34		78	124	129	51	117
Grp Sat Flow(s),veh/h/ln	1558	0	1585	1409	0	1708		1781	1777	1793	1781	1777
Q Serve(g_s), s	0.0	0.0	0.6	1.1	0.0	0.4		1.1	1.5	1.6	0.7	1.5
Cycle Q Clear(g_c), s	0.3	0.0	0.6	1.4	0.0	0.4		1.1	1.5	1.6	0.7	1.5
Prop In Lane	0.72		1.00	1.00		0.53		1.00		0.24	1.00	
Lane Grp Cap(c), veh/h	467	0	229	489	0	247		148	381	385	106	339
V/C Ratio(X)	0.05	0.00	0.19	0.18	0.00	0.14		0.53	0.33	0.33	0.48	0.34
Avail Cap(c_a), veh/h	2158	0	2034	2093	0	2192		924	2281	2301	646	2003
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
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.5	0.0	9.6	9.9	0.0	9.6		11.3	8.5	8.5	11.7	9.0
Incr Delay (d2), s/veh	0.0	0.0	0.4	0.2	0.0	0.3		2.9	0.5	0.5	3.4	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.2	0.3	0.0	0.1		0.4	0.4	0.4	0.3	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.6	0.0	10.0	10.1	0.0	9.8		14.2	9.0	9.0	15.0	9.6
LnGrp LOS	A	A	B	B	A	A		B	A	A	B	A
Approach Vol, veh/h		69			121				331			289
Approach Delay, s/veh		9.9			10.0				10.2			10.6
Approach LOS		A			B				B			B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	10.6		8.8	6.8	10.0		8.8				
Change Period (Y+Rc), s	* 4.7	5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s	* 9.3	32.9		32.9	* 13	28.9		32.9				
Max Q Clear Time (g_c+I1), s	2.7	3.6		2.6	3.1	3.5		3.4				
Green Ext Time (p_c), s	0.0	1.4		0.2	0.1	1.3		0.4				

### Intersection Summary

HCM 6th Ctrl Delay 10.3

HCM 6th LOS B

### Notes

User approved ignoring U-Turning movement.

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	25
Future Volume (veh/h)	25
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1870
Adj Flow Rate, veh/h	27
Peak Hour Factor	0.94
Percent Heavy Veh, %	2
Cap, veh/h	77
Arrive On Green	0.19
Sat Flow, veh/h	401
Grp Volume(v), veh/h	121
Grp Sat Flow(s),veh/h/ln	1798
Q Serve(g_s), s	1.5
Cycle Q Clear(g_c), s	1.5
Prop In Lane	0.22
Lane Grp Cap(c), veh/h	343
V/C Ratio(X)	0.35
Avail Cap(c_a), veh/h	2027
HCM Platoon Ratio	1.00
Upstream Filter(l)	1.00
Uniform Delay (d), s/veh	9.0
Incr Delay (d2), s/veh	0.6
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(50%),veh/ln	0.4
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	9.6
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	



HCM 6th TWSC  
1: Lawler Center Drive/Project Driveway & Highway 12

Existing Friday + Project PM

07/21/2022

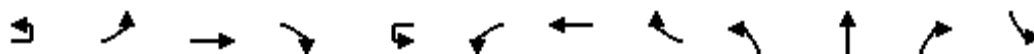
Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗			↗			↗
Traffic Vol, veh/h	0	1246	72	0	828	133	0	0	106	0	0	85
Future Vol, veh/h	0	1246	72	0	828	133	0	0	106	0	0	85
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	Free	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	500	-	-	260	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1326	77	0	881	141	0	0	113	0	0	90
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	-	-	-	0	-	-	-	-	-	441
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	0	0	-	-	0	0	0	0	0	564
Stage 1	0	-	0	0	-	-	0	0	0	0	0	-
Stage 2	0	-	0	0	-	-	0	0	0	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	-	-	-	-	564
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			12.6		
HCM LOS							A			B		
Minor Lane/Major Mvmt	NBLn1	EBT	WBT	WBR	SBLn1							
Capacity (veh/h)	-	-	-	-	564							
HCM Lane V/C Ratio	-	-	-	-	0.16							
HCM Control Delay (s)	0	-	-	-	12.6							
HCM Lane LOS	A	-	-	-	B							
HCM 95th %tile Q(veh)	-	-	-	-	0.6							

# HCM 6th Signalized Intersection Summary

## 2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday + Project PM

07/22/2022



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		RT	LT	RT		RT	LT	RT	RT	LT	RT	RT
Traffic Volume (veh/h)	10	470	1090	147	31	36	620	137	85	113	15	286
Future Volume (veh/h)	10	470	1090	147	31	36	620	137	85	113	15	286
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.99	1.00		0.97	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1870		1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h		511	1185	160		39	674	149	92	123	16	210
Peak Hour Factor		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
Cap, veh/h		595	1582	704		58	1072	475	295	310	256	284
Arrive On Green		0.17	0.45	0.45		0.03	0.30	0.30	0.17	0.17	0.17	0.16
Sat Flow, veh/h		3456	3554	1581		1781	3554	1574	1781	1870	1545	1781
Grp Volume(v), veh/h		511	1185	160		39	674	149	92	123	16	210
Grp Sat Flow(s),veh/h/ln		1728	1777	1581		1781	1777	1574	1781	1870	1545	1781
Q Serve(g_s), s		14.7	28.4	6.4		2.2	16.7	7.5	4.6	6.0	0.9	11.5
Cycle Q Clear(g_c), s		14.7	28.4	6.4		2.2	16.7	7.5	4.6	6.0	0.9	11.5
Prop In Lane		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		595	1582	704		58	1072	475	295	310	256	284
V/C Ratio(X)		0.86	0.75	0.23		0.67	0.63	0.31	0.31	0.40	0.06	0.74
Avail Cap(c_a), veh/h		747	1849	823		110	1286	570	906	951	786	321
HCM Platoon Ratio		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
Uniform Delay (d), s/veh		41.1	23.6	17.5		48.9	30.8	27.5	37.5	38.1	35.9	40.9
Incr Delay (d2), s/veh		8.2	1.5	0.2		12.4	0.7	0.4	0.6	0.8	0.1	7.7
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
%ile BackOfQ(50%),veh/ln		6.6	11.0	2.2		1.1	6.8	2.7	2.1	2.8	0.3	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		49.3	25.1	17.7		61.3	31.5	27.9	38.1	38.9	36.0	48.6
LnGrp LOS		D	C	B		E	C	C	D	D	D	D
Approach Vol, veh/h			1856				862			231		
Approach Delay, s/veh			31.1				32.2			38.4		
Approach LOS			C				C			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.0	51.7		20.9	22.7	37.1		21.6				
Change Period (Y+Rc), s	* 4.7	6.2		4.6	5.1	6.2		4.6				
Max Green Setting (Gmax), s	* 6.3	53.2		18.4	22.1	37.0		52.0				
Max Q Clear Time (g_c+I1), s	4.2	30.4		15.3	16.7	18.7		8.0				
Green Ext Time (p_c), s	0.0	8.8		1.1	0.9	4.3		1.1				

### Intersection Summary

HCM 6th Ctrl Delay	35.3
HCM 6th LOS	D

### Notes

User approved volume balancing among the lanes for turning movement.

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  
2: Grizzly Island Road/Sunset Avenue & Highway 12

Existing Friday + Project PM

07/22/2022



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	100	253
Future Volume (veh/h)	100	253
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	250	275
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	2	2
Cap, veh/h	299	506
Arrive On Green	0.16	0.16
Sat Flow, veh/h	1870	3170
Grp Volume(v), veh/h	250	275
Grp Sat Flow(s),veh/h/ln	1870	1585
Q Serve(g_s), s	13.3	8.2
Cycle Q Clear(g_c), s	13.3	8.2
Prop In Lane		1.00
Lane Grp Cap(c), veh/h	299	506
V/C Ratio(X)	0.84	0.54
Avail Cap(c_a), veh/h	337	570
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	41.7	39.5
Incr Delay (d2), s/veh	15.3	0.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.3	3.3
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	57.0	40.4
LnGrp LOS	E	D
Approach Vol, veh/h	735	
Approach Delay, s/veh	48.4	
Approach LOS	D	
Timer - Assigned Phs		




HCM 6th TWSC  
3: Sunset Avenue & Sunset Center South Entrance

Existing Friday + Project PM

07/21/2022

Intersection

Int Delay, s/veh 0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	61	604	118	0	596
Future Vol, veh/h	0	61	604	118	0	596
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	65	643	126	0	634

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	-	385	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	6.94	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	3.32	-
Pot Cap-1 Maneuver	0	613	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	-	613	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-





















Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	613	-
HCM Lane V/C Ratio	-	0.106	-
HCM Control Delay (s)	-	11.6	-
HCM Lane LOS	-	B	-
HCM 95th %tile Q(veh)	-	0.4	-

# HCM 6th Signalized Intersection Summary

Existing Friday + Project PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	93	30	106	117	32	35	28	141	438	62	2	108
Future Volume (veh/h)	93	30	106	117	32	35	28	141	438	62	2	108
Initial Q (Qb), veh	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
Parking Bus, Adj	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			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870		1870	1870	1870		1870
Adj Flow Rate, veh/h	96	31	109	121	33	36		145	452	64		111
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97		0.97	0.97	0.97		0.97
Percent Heavy Veh, %	2	2	2	2	2	2		2	2	2		2
Cap, veh/h	348	87	286	501	147	161		197	864	122		172
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18		0.11	0.28	0.28		0.10
Sat Flow, veh/h	876	481	1585	1378	818	892		1781	3127	440		1781
Grp Volume(v), veh/h	127	0	109	121	0	69		145	256	260		111
Grp Sat Flow(s),veh/h/ln	1357	0	1585	1378	0	1710		1781	1777	1791		1781
Q Serve(g_s), s	1.9	0.0	2.0	0.0	0.0	1.1		2.6	4.1	4.1		2.0
Cycle Q Clear(g_c), s	3.0	0.0	2.0	2.0	0.0	1.1		2.6	4.1	4.1		2.0
Prop In Lane	0.76		1.00	1.00		0.52		1.00		0.25		1.00
Lane Grp Cap(c), veh/h	434	0	286	501	0	308		197	491	495		172
V/C Ratio(X)	0.29	0.00	0.38	0.24	0.00	0.22		0.73	0.52	0.53		0.65
Avail Cap(c_a), veh/h	1509	0	1475	1535	0	1591		925	1696	1709		658
HCM Platoon Ratio	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	0.00	1.00	1.00	0.00	1.00		1.00	1.00	1.00		1.00
Uniform Delay (d), s/veh	12.5	0.0	12.0	12.0	0.0	11.7		14.3	10.2	10.2		14.5
Incr Delay (d2), s/veh	0.4	0.0	0.8	0.2	0.0	0.4		5.2	0.9	0.9		4.0
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
%ile BackOfQ(50%),veh/ln	0.7	0.0	0.6	0.7	0.0	0.4		1.1	1.2	1.2		0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	12.9	12.3	0.0	12.0		19.6	11.1	11.1		18.6
LnGrp LOS	B	A	B	B	A	B		B	B	B		B
Approach Vol, veh/h		236			190				661			
Approach Delay, s/veh		12.8			12.2				12.9			
Approach LOS		B			B				B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	14.3		11.1	8.4	13.8		11.1				
Change Period (Y+Rc), s	* 4.7	5.1		5.1	* 4.7	5.1		5.1				
Max Green Setting (Gmax), s	* 12	31.8		31.0	* 17	26.8		31.0				
Max Q Clear Time (g_c+I1), s	4.0	6.1		5.0	4.6	5.5		4.0				
Green Ext Time (p_c), s	0.1	3.1		1.1	0.3	2.5		0.7				

### Intersection Summary

HCM 6th Ctrl Delay	12.7
HCM 6th LOS	B

### 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

Existing Friday + Project PM

## 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance 07/21/2022



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	372	55
Future Volume (veh/h)	372	55
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1870	1870
Adj Flow Rate, veh/h	384	57
Peak Hour Factor	0.97	0.97
Percent Heavy Veh, %	2	2
Cap, veh/h	813	120
Arrive On Green	0.26	0.26
Sat Flow, veh/h	3107	458
Grp Volume(v), veh/h	218	223
Grp Sat Flow(s),veh/h/ln	1777	1788
Q Serve(g_s), s	3.4	3.5
Cycle Q Clear(g_c), s	3.4	3.5
Prop In Lane		0.26
Lane Grp Cap(c), veh/h	465	468
V/C Ratio(X)	0.47	0.48
Avail Cap(c_a), veh/h	1429	1438
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	10.4	10.4
Incr Delay (d2), s/veh	0.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	1.1
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	11.1	11.1
LnGrp LOS	B	B
Approach Vol, veh/h	552	
Approach Delay, s/veh	12.6	
Approach LOS	B	
Timer - Assigned Phs		

# **ATTACHMENT D**

## Weekday Queuing Analysis Worksheets



Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12

Movement	WB	WB	WB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	92	95	12	88
Average Queue (ft)	6	5	0	29
95th Queue (ft)	61	55	6	61
Link Distance (ft)	803	803		287
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			260	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	178	241	299	256	36	231	604	591	415	149	333	28
Average Queue (ft)	87	128	129	111	12	57	404	380	79	115	110	4
95th Queue (ft)	168	205	237	213	32	189	622	591	303	167	246	19
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)							1	0				
Queuing Penalty (veh)							5	3				
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)			0				33	10	0	11	2	
Queuing Penalty (veh)			0				10	10	0	14	3	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	165	180	116	116
Average Queue (ft)	69	118	55	31
95th Queue (ft)	142	182	92	77
Link Distance (ft)		171	171	
Upstream Blk Time (%)	0	2		
Queuing Penalty (veh)	0	4		
Storage Bay Dist (ft)	150			150
Storage Blk Time (%)	0	6	0	0
Queuing Penalty (veh)	0	4	0	0

Intersection: 3: Sunset Avenue & Sunset Center South Entrance

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	50	62
Average Queue (ft)	29	5
95th Queue (ft)	50	30
Link Distance (ft)	427	170
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	52	52	54	87	101	72	92	82	86	92
Average Queue (ft)	15	16	33	26	45	18	35	34	31	32
95th Queue (ft)	42	45	56	69	80	51	71	64	72	70
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			18	3	0	0				
Queuing Penalty (veh)			4	3	0	0				

Network Summary

Network wide Queuing Penalty: 60
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**Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12**

Movement	SB
Directions Served	R
Maximum Queue (ft)	57
Average Queue (ft)	23
95th Queue (ft)	43
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12**

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	415	470	572	601	295	257	406	380	161	148	224	28
Average Queue (ft)	222	275	310	304	78	87	230	209	49	73	94	6
95th Queue (ft)	367	442	539	545	272	200	363	335	127	133	174	23
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)				0								
Queuing Penalty (veh)				0								
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)		0	1	13	0	0	8	0	0	1	4	
Queuing Penalty (veh)		0	6	23	0	0	5	1	0	1	5	

**Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12**

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	170	181	78	69
Average Queue (ft)	111	147	39	20
95th Queue (ft)	190	201	67	49
Link Distance (ft)		171	171	
Upstream Blk Time (%)	0	9		
Queuing Penalty (veh)	0	21		
Storage Bay Dist (ft)	150		150	
Storage Blk Time (%)	1	16		
Queuing Penalty (veh)	2	17		

**Intersection: 3: Sunset Avenue & Sunset Center South Entrance**

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	T	T
Maximum Queue (ft)	70	42	63	154	36
Average Queue (ft)	34	3	4	31	3
95th Queue (ft)	57	23	31	115	42
Link Distance (ft)	427	171	171	170	170
Upstream Blk Time (%)				1	0
Queuing Penalty (veh)				2	0
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	112	71	57	138	139	197	177	112	138	122
Average Queue (ft)	49	35	39	49	92	76	89	49	58	47
95th Queue (ft)	90	60	61	101	151	175	173	90	109	90
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)						2	1			
Queuing Penalty (veh)						6	3			
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			29	11	7	1			0	
Queuing Penalty (veh)			17	11	16	3			0	

**Network Summary**

Network wide Queuing Penalty: 139

**Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12**

Movement	WB	WB	WB	SB
Directions Served	T	T	R	R
Maximum Queue (ft)	145	126	69	130
Average Queue (ft)	33	28	8	43
95th Queue (ft)	198	178	84	131
Link Distance (ft)	803	803		287
Upstream Blk Time (%)				1
Queuing Penalty (veh)				0
Storage Bay Dist (ft)			260	
Storage Blk Time (%)		1	0	
Queuing Penalty (veh)		2	0	

**Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12**

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	185	209	264	228	53	269	696	690	415	149	332	23
Average Queue (ft)	83	126	127	108	12	64	439	423	98	119	117	3
95th Queue (ft)	168	190	221	205	37	220	707	694	345	173	256	14
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)							4	4				
Queuing Penalty (veh)							24	23				
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)				0			37	17	0	13	1	
Queuing Penalty (veh)				0			12	17	0	16	3	

**Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12**

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	170	180	126	115
Average Queue (ft)	72	121	56	31
95th Queue (ft)	146	180	97	76
Link Distance (ft)		171	171	
Upstream Blk Time (%)	0	2	0	
Queuing Penalty (veh)	0	3	0	
Storage Bay Dist (ft)	150			150
Storage Blk Time (%)	0	4	0	0
Queuing Penalty (veh)	0	3	0	0

**Intersection: 3: Sunset Avenue & Sunset Center South Entrance**

Movement	WB	SB
Directions Served	R	T
Maximum Queue (ft)	64	64
Average Queue (ft)	29	4
95th Queue (ft)	54	30
Link Distance (ft)	427	170
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

**Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	48	56	59	95	92	53	90	62	83	77
Average Queue (ft)	14	18	33	28	41	15	36	32	32	33
95th Queue (ft)	41	47	56	76	75	43	75	56	66	65
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			16	3	0					
Queuing Penalty (veh)			4	3	0					

**Network Summary**

Network wide Queuing Penalty: 110

**Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12**

Movement	SB
Directions Served	R
Maximum Queue (ft)	67
Average Queue (ft)	25
95th Queue (ft)	46
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

**Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12**

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	412	473	654	648	295	269	360	362	108	149	218	57
Average Queue (ft)	221	275	305	309	114	86	239	221	44	75	93	8
95th Queue (ft)	383	437	539	536	331	199	350	334	88	140	177	40
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)			0									
Queuing Penalty (veh)			0									
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)	0	0	1	14	0	0	9	0		2	4	0
Queuing Penalty (veh)	1	1	6	26	0	0	6	0		3	4	0

**Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12**

Movement	SB	SB	SB	SB
Directions Served	L	LT	R	R
Maximum Queue (ft)	170	181	92	76
Average Queue (ft)	106	147	42	25
95th Queue (ft)	189	197	72	55
Link Distance (ft)		171	171	
Upstream Blk Time (%)	0	5		
Queuing Penalty (veh)	0	13		
Storage Bay Dist (ft)	150		150	
Storage Blk Time (%)	1	12		
Queuing Penalty (veh)	1	13		

**Intersection: 3: Sunset Avenue & Sunset Center South Entrance**

Movement	WB	NB	NB	SB
Directions Served	R	T	TR	T
Maximum Queue (ft)	67	29	55	118
Average Queue (ft)	31	2	4	19
95th Queue (ft)	55	23	33	80
Link Distance (ft)	427	171	171	170
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

**Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	125	74	58	114	139	180	189	120	136	99
Average Queue (ft)	51	35	39	48	87	73	88	46	56	48
95th Queue (ft)	95	62	62	96	144	166	168	88	108	85
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)						1	1			
Queuing Penalty (veh)						2	3			
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			25	12	6	2			0	
Queuing Penalty (veh)			15	12	13	3			0	

**Network Summary**

Network wide Queuing Penalty: 121



## Friday Queuing Analysis Worksheets

Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12

Movement	SB
Directions Served	R
Maximum Queue (ft)	51
Average Queue (ft)	24
95th Queue (ft)	44
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	134	161	201	162	17	182	401	393	130	106	79	24
Average Queue (ft)	56	91	81	58	2	22	243	222	25	42	28	5
95th Queue (ft)	117	147	167	137	9	93	372	352	83	88	66	21
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)							11	0	0	0		
Queuing Penalty (veh)							1	0	0	0		

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	SB	SB	SB	SB
Directions Served	UL	LT	R	R
Maximum Queue (ft)	98	131	106	79
Average Queue (ft)	30	76	48	28
95th Queue (ft)	77	123	83	61
Link Distance (ft)		171	171	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	150			150
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 3: Sunset Avenue & Sunset Center South Entrance

Movement	WB
Directions Served	R
Maximum Queue (ft)	54
Average Queue (ft)	28
95th Queue (ft)	51
Link Distance (ft)	427
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	57	52	57	81	112	69	104	65	69	99
Average Queue (ft)	14	19	33	26	46	17	39	29	24	37
95th Queue (ft)	43	46	56	67	88	50	83	55	58	76
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			16	5	1	0				
Queuing Penalty (veh)			5	4	1	0				

Network Summary

Network wide Queuing Penalty: 12
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Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12

Movement	SB
Directions Served	R
Maximum Queue (ft)	59
Average Queue (ft)	27
95th Queue (ft)	49
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	343	410	481	505	295	242	325	284	74	140	177	36
Average Queue (ft)	180	218	252	247	65	71	195	174	36	61	73	8
95th Queue (ft)	300	344	417	417	243	168	296	275	66	120	136	28
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)		0	0	8	0	0	4			1	1	
Queuing Penalty (veh)		0	1	11	0	0	2			1	1	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	SB	SB	SB	SB
Directions Served	UL	LT	R	R
Maximum Queue (ft)	170	183	96	78
Average Queue (ft)	135	163	49	34
95th Queue (ft)	196	208	81	67
Link Distance (ft)		171	171	
Upstream Blk Time (%)	1	22		
Queuing Penalty (veh)	0	64		
Storage Bay Dist (ft)	150		150	
Storage Blk Time (%)	4	32		
Queuing Penalty (veh)	10	46		

**Intersection: 3: Sunset Avenue & Sunset Center South Entrance**

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	T	T
Maximum Queue (ft)	71	44	68	186	141
Average Queue (ft)	33	2	5	73	11
95th Queue (ft)	61	18	33	194	79
Link Distance (ft)	427	171	171	170	170
Upstream Blk Time (%)				5	1
Queuing Penalty (veh)				17	2
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	116	76	55	180	140	200	181	150	258	226
Average Queue (ft)	56	35	44	72	94	83	97	56	89	71
95th Queue (ft)	100	63	63	145	153	185	179	116	210	169
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)						2	1			
Queuing Penalty (veh)						5	4			
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			39	13	8	2		0	3	
Queuing Penalty (veh)			26	16	18	4		0	3	

**Network Summary**

Network wide Queuing Penalty: 234

Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12

Movement	WB	SB
Directions Served	R	R
Maximum Queue (ft)	5	71
Average Queue (ft)	0	24
95th Queue (ft)	4	49
Link Distance (ft)		287
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	260	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	160	174	216	185	29	186	406	388	77	112	107	23
Average Queue (ft)	56	90	89	65	2	20	239	221	21	37	32	6
95th Queue (ft)	123	162	177	153	14	85	381	358	51	83	79	22
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)							11	0		0	0	
Queuing Penalty (veh)							2	0		0	0	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	SB	SB	SB	SB
Directions Served	UL	LT	R	R
Maximum Queue (ft)	112	141	104	82
Average Queue (ft)	36	80	51	26
95th Queue (ft)	92	132	90	60
Link Distance (ft)		171	171	
Upstream Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		
Storage Bay Dist (ft)	150		150	
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 3: Sunset Avenue & Sunset Center South Entrance

Movement	WB
Directions Served	R
Maximum Queue (ft)	58
Average Queue (ft)	29
95th Queue (ft)	50
Link Distance (ft)	427
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	44	45	60	81	109	88	107	66	76	80
Average Queue (ft)	14	20	30	26	44	19	37	26	25	34
95th Queue (ft)	42	46	57	66	81	58	85	54	59	67
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			14	4	0	0				
Queuing Penalty (veh)			5	3	0	0				

Network Summary

Network wide Queuing Penalty: 11
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Intersection: 1: Lawler Center Drive/Project Driveway & Highway 12

Movement	SB
Directions Served	R
Maximum Queue (ft)	68
Average Queue (ft)	29
95th Queue (ft)	53
Link Distance (ft)	287
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	EB	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB
Directions Served	UL	L	T	T	R	UL	T	T	R	L	T	R
Maximum Queue (ft)	370	479	480	454	295	263	326	282	95	127	178	82
Average Queue (ft)	198	241	254	251	56	79	191	175	37	57	74	9
95th Queue (ft)	358	407	408	405	225	177	290	269	70	110	139	48
Link Distance (ft)			998	998			705	705			782	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	500	500			270	245			390	125		125
Storage Blk Time (%)	0	0	0	8	0	0	3			1	2	
Queuing Penalty (veh)	0	1	1	12	0	0	2			1	2	

Intersection: 2: Grizzly Island Road/Sunset Avenue & Highway 12

Movement	SB	SB	SB	SB
Directions Served	UL	LT	R	R
Maximum Queue (ft)	170	182	101	76
Average Queue (ft)	130	158	50	33
95th Queue (ft)	192	203	85	63
Link Distance (ft)		171	171	
Upstream Blk Time (%)	1	15		
Queuing Penalty (veh)	0	45		
Storage Bay Dist (ft)	150		150	
Storage Blk Time (%)	4	24		
Queuing Penalty (veh)	9	34		



**Intersection: 3: Sunset Avenue & Sunset Center South Entrance**

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	T	T
Maximum Queue (ft)	68	42	61	184	70
Average Queue (ft)	33	3	6	55	3
95th Queue (ft)	58	24	34	156	37
Link Distance (ft)	427	171	171	170	170
Upstream Blk Time (%)				1	0
Queuing Penalty (veh)				5	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 4: Sunset Avenue & Heritage Shopping Center Entrance/Sunset Center Main Entrance**

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	L	TR	UL	T	TR	UL	T	TR
Maximum Queue (ft)	105	75	57	139	140	181	180	114	146	130
Average Queue (ft)	53	36	43	58	85	81	98	54	77	61
95th Queue (ft)	95	63	62	115	141	175	182	96	131	111
Link Distance (ft)	266	266		281		170	170		692	692
Upstream Blk Time (%)						1	1			
Queuing Penalty (veh)						4	5			
Storage Bay Dist (ft)			30		115			170		
Storage Blk Time (%)			34	12	4	2			0	
Queuing Penalty (veh)			23	14	10	4			0	

**Network Summary**

Network wide Queuing Penalty: 171

**Suisun City Tractor Supply Company Focused Traffic Study  
Responses to Comments on August 18, 2022 Report**

Comment #	Page # (of document)	Comment	Response
1	11	Provide summary. Existing storage length is ___, and the 95th percentile queue lengths during the weekday AM and PM peak hours are respectively __ and ___.	The requested information was added to the summary paragraph in the revised report.
2	12	Does queue back up into intersection of Sunset Avenue/main driveways to shopping centers?	No, the queue does not back up into the Sunset Avenue/Main Entrance intersection. Added storage lengths and AM/PM queue lengths in summary text as requested to provide more clarity with results.
3	12	(___ feet)	Queue length added as requested.
4	12	40-foot difference is not "slight"	The reference to "slightly longer" was referring to the PM peak hour queue length in the shared through/left turn lane compared to the exclusive left turn lane. However, it is not necessary for this reference to be in the report and so was removed in the revised.
5	12	I love how the information is conveyed in this paragraph. Is there a reason why the other paragraphs use a different format?	There wasn't any reason why the other paragraphs had a different format, and I applied the same format to all relevant paragraphs in the queuing analysis section.
6	12	(AM: ___ feet, PM: ___ feet)	Queue lengths added as requested.
7	12	(_____ feet)	Storage length added as requested.
8	13	Why are most of the queue lengths for this scenario shorter than the queue lengths for existing conditions? This question applies to Table 5 as well.	<p>An explanation of why this occurs was added to the queuing analysis section in the revised report, which is provided below:</p> <p><i>SimTraffic occasionally produces a 95th percentile queue length on a movement that is lower for the "with project" scenario than for the "without project" scenario, particularly at signalized intersections. This is due to the two scenarios being in two separate files, because the random seeding of the network varies with each new simulation run. SimTraffic 95th percentile queue lengths at signalized intersections will often be slightly different between two different files, even if the volumes are exactly the same. When this circumstance occurs after running SimTraffic for a "with project" scenario, one can infer that the additional "project" traffic at the intersection would have a negligible effect on queuing.</i></p>
9	13	Provide distance from Highway 12 to the signalized intersection north of Highway 12. 385'?	The distance from from the stop bar at Sunset Avenue/Highway 12 intersection to the Sunset Avenue/Sunset Center Main Entrance intersection was used as the storage length of the shared left-turn/through lane, which is approximately 385 feet.

## Appendix H Tribal Cultural Outreach Correspondence

CITY COUNCIL

Mayor  
Alma Hernandez, Mayor Pro-Tem  
Jane Day  
Michael Hudson  
Wanda Williams



CITY COUNCIL MEETING

First and Third Tuesday  
Every Month

CITY OF SUISUN CITY

701 Civic Center Blvd.  
Suisun City, California 94585  
Incorporated October 9, 1868

September 7, 2022

**RE: AB52 and SB18 CONSULTATION REQUEST ON THE PREPARATION OF A MODIFIED INITIAL STUDY FOR THE TRACTOR SUPPLY RETAIL STORE PROJECT.**

Dear < TRIBAL CONTACT TITLE, TRIBAL CONTACT LAST NAME:

This is an invitation for your participation to consult on the City's preparation of a Modified Initial Study for the proposed Tractor Supply Retail Store project located on Highway 12, adjacent to Sunset Shopping Center, east of Sunset Avenue and west of Snow Drive. Public Resources Code Section 21080.3.1 allows California Native American tribes to request consultation with the city on the preparation of the Modified Initial Study if written notice is provided to the city within **30 days** of receipt of this notice.

Government Code Section 65452.3(a)(s) allows California Native American tribes **90 days** from the date of receipt of this notice to request consultation with the city regarding the Modified Initial Study. Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

**Project Summary:**

Applicant: Yuba Investments Highway 12, LP (Hilbers, Inc. Sutter Development).

Project Description: The project is proposed to located on a 3.19-acre vacant site. The project is an 18,800-square-foot retail store selling farm and home hardware products, along with a 3,224-square-foot feed storage building, and a 1250 forage shed.

Zoning: CMU Commercial Mixed Use.

Entitlements requested: Site Plan and Architectural Review, Lot Line Adjustment, Variance.

Lead Agency Contact: April Wooden, Special Projects

Project location: Highway 12, adjacent to Sunset Shopping Center, east of Sunset Avenue and west of Snow Drive.



DEPARTMENTS: AREA CODE (707)

ADMINISTRATION 421-7300 ■ DEVELOPMENT SERVICES 421-7335 ■ BUILDING 421-7310 ■ FINANCE 421-7320  
FIRE 425-9133 ■ RECREATION & COMMUNITY SERVICES 421-7200 ■ POLICE 421-7373 ■ PUBLIC WORKS 421-7340  
SUCCESSOR AGENCY 421-7309 FAX 421-7366

The city adopted a comprehensive update to the General Plan in 2015, for which an EIR was certified. **The General Plan EIR covered potential impacts to tribal cultural resources and included applicable mitigation measures to reduce potential impacts. The General Plan includes policies regarding archeological resources and the preservation of those resources.** For reference purposes, the previous mitigation is attached to this letter to further assist the tribe in deciding if additional consultation regarding this project is necessary.

Should you have any questions regarding this Project or would like to consult with the city, please contact me at (831) 915-2189 or via email at [awooden@suisun.com](mailto:awooden@suisun.com).

Respectfully,

April Wooden, Special Projects






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## Goal OSC-5 Minimize Negative Impacts on Prehistoric Resources

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**Objective OSC-5:** Review and condition new developments to minimize prehistoric resource impacts.

*Policy OSC-5.1 The City will use geologic mapping and cultural and paleontological resource databases to determine the likely presence of resources and the appropriate level of cultural and paleontological resources analysis and mitigation required for new developments.*

*Policy OSC-5.2 New developments shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever feasible.*

*Policy OSC-5.3 New developments in areas underlain by Pleistocene Alluvium and the Tehama Formation shall include training, notification, and recovery procedures for fossils.*

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### Program OSC-5.1 Paleontological Resource Training and Recovery

Prior to the start of earthmoving activities that would disturb more than 1 acre of land within the Late Pleistocene alluvium or the Tehama Formation, the project applicant shall retain a paleontologist to provide a brief training session for all construction personnel involved with earthmoving activities regarding the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction, and proper notification procedures should fossils be encountered. If paleontological resources are discovered during earthmoving activities, the construction crew shall immediately cease work in the vicinity of the find and notify the Suisun City Department of Community Development. The project applicant(s) shall retain a qualified paleontologist to evaluate the resource and prepare a recovery plan. The recovery plan may include, but is not limited to, a field survey, construction monitoring, sampling and data recovery procedures, museum curation for any specimen recovered, and a report of findings. Recommendations in the recovery plan that are determined by the City to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.

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### Program OSC-5.1 Cultural Resource Review and Mitigation

New development projects that could have significant adverse impacts to prehistoric or historic resources shall be required to assess impacts and provide feasible mitigation. The following steps, or those deemed equally effective by the City, will be followed:

- Request information from the Native American Heritage Commission regarding Native American groups that may have important sites in areas that could be affected by project development.
- Involve the local Native American community in determining the appropriate mitigation of impacts to significant prehistoric sites.

- Consult updated information from the Northwest Information Center regarding cultural resource sites, structures, or landscapes that could be affected by project activities.
- Based upon the sensitivity of the subject proposed project area, additional technical work may be required. Where a cultural resources survey has not been performed:
  - a pedestrian survey may be required in areas of low sensitivity;
  - a pedestrian survey will be required in areas of moderate and high sensitivity; and
  - Based on findings of the pedestrian survey, additional technical studies may be required, such as geoarchaeological sensitivity analysis, Native American consultation, ethnographic studies, or other analysis scaled according to the nature of the individual project.
- For new developments that would alter historic structures (structures 50 years old or older), a qualified architectural historian shall conduct a record search and assess the potential for the project to result in significant impacts to historic resources that occur as part of the existing built environment.
- Determination of impacts, significance, and mitigation (i.e., site monitors, avoidance, and/or other measures) shall be made by a qualified professional archaeologist or architectural historian, as appropriate.
- If impacts cannot be avoided through project design, appropriate and feasible treatment measures are required. Such measures may consist of, but are not limited to actions, such as data recovery excavations, photographic documentation, or preparation of design drawings documenting the resource subject to significant impacts.
- Provide the Northwest Information Center with appropriate California Department of Parks and Recreation site record forms and cultural resources reports documenting resources that may be identified through technical work performed to review projects accommodated under the General Plan.
- If human remains are discovered during construction of projects occurring under General Plan buildout, the project proponent and landowner shall comply with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 7050.5.

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## **Goal OSC-6 Preserve and Enhance Suisun City's Historic Downtown**

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**Objective OSC-6: Balance the economic development and heritage resource benefits of development within Suisun City's Historic Downtown.**

*Policy OSC-6.1*

*Buildings and other resources that have historical or architectural value should be preserved, wherever feasible.*





- Policy OSC-6.2      Infill development in the Downtown Waterfront District shall be designed so that building placement and massing, shape, design, color, and detail are architecturally compatible with surrounding historic buildings.*
- Policy OSC-6.3      Infill development in the Downtown Waterfront District shall be designed to preserve the overall pedestrian-scaled environment, including building configuration, setting, and orientation.*
- Policy OSC-6.4      The City will encourage private property owners to preserve and maintain historic structures in the Downtown Waterfront District, consistent with applicable Department of the Interior historic preservation standards.*
- Policy OSC-6.5      The City will encourage adaptive reuse of historic structures where as much of the historic character as possible is preserved.*
- Policy OSC-6.6      New developments should be designed to retain as many key character-defining features as possible in the restoration or renovation of historic buildings.*
- Policy OSC-6.7      Wherever possible, new developments involving historic structures should maintain or restore original building proportions, dimensions, and elements.*
- Policy OSC-6.8      The City will provide information to property owners regarding tax incentives and other federal and state programs, including the State Historical Building Code, to encourage the rehabilitation of historic structures.*

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**Program OSC-6.1      Historic Resource Inventory**

The City will maintain an inventory of historic and potentially-historic structures and resources in the Downtown Waterfront Specific Plan Area. The inventory will include the date of construction; information regarding the architectural style and significance; information regarding significant historical figures or events that had occurred at or near the resource; and additional background about why the resource should be preserved.

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**Program OSC-6.2      Documentation of Historic Resources**

In cases where the preservation of a historic resource is not feasible, the City will require that the resource be documented and the information regarding the resource be retained in a secure, but publicly accessible location. The resource proposed for removal should be described and incorporated into historic and/or interpretive signage. The reuse and display of historic materials and artifacts from the resource is encouraged.

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**Program OSC-6.3      Historic Rehabilitation Projects**

The City will proactively research opportunities for funding that can be used to provide financial support for historic rehabilitation projects, particularly in the Downtown Waterfront District. The City will prioritize and give special emphasis to the potential for rehabilitation projects involving structures that are grouped in close proximity, particularly rural, agricultural, settlement-related structures, and structures associated with the railroad.



## 3.4 CULTURAL RESOURCES

### METHODOLOGY

Research and field methods employed for the cultural resources analysis included a records search of the Northwest Information Center (NWIC) of the California Historical Resource Information System, archival and background research, and Native American consultation. To comply with Senate-Bill 18, AECOM initiated contact with the Native American Heritage Commission on August 19, 2010 on behalf of the City of Suisun City. A list of local Native American individuals / tribes was requested, in addition to a search of their Sacred Lands File. This consultation process is currently ongoing. AECOM contacted the Solano County Historical Society by phone on August 23, 2010 in order to obtain additional information concerning the history of the area. No new information was provided.

### IMPACT ANALYSIS

<b>IMPACT</b>	<b>Potential Impacts to Historic Resources of Suisun City.</b> <i>Land use change accommodated under the 2035 General Plan could result in changes that could affect historic structures, historic districts, and the historic character of Suisun City when new development would require demolition of historically significant building or structures. This impact is <b>potentially significant</b>.</i>
<b>3.4-1</b>	

The City established the Register of Suisun City Historic Properties and all structures and sites identified in its 1976 survey and inventory prepared by the Solano County Landmarks Commission. Table CUL-1 in the Cultural Resources Background Report lists the known historic resources in the City and its sphere of influence. A total of 16 individually significant or potentially significant cultural resources and one historic district with 95 contributing resources have been identified within the City limits and the sphere of influence. These resources are buildings dating to the late-19th and early 20th century, and include such resources as a railroad depot, residences, commercial, fraternal, and religious buildings. Of the 16 individually significant buildings, two are listed on the NRHP and the other 14 were determined eligible for listing in the National Register of Historic Places (NRHP). The historic district and its contributing resources were also determined eligible for the NRHP.

#### Relevant Policies and Programs of the 2035 General Plan

- **Policy OSC-6.1:** Buildings and other resources that have historical or architectural value should be preserved, wherever feasible.
- **Policy OSC-6.2:** Infill development in the Downtown Waterfront District shall be designed so that building placement and massing, shape, design, color, and detail are architecturally compatible with surrounding historic buildings.
- **Policy OSC-6.3:** Infill development in the Downtown Waterfront District shall be designed to preserve the overall pedestrian-scaled environment, including building configuration, setting, and orientation.
- **Policy OSC-6.4:** The City will encourage private property owners to preserve and maintain historic structures in the Downtown Waterfront District, consistent with applicable Department of the Interior historic preservation standards.



- ▶ **Policy OSC-6.5:** The City will encourage adaptive reuse of historic structures where as much of the historic character as possible is preserved.
- ▶ **Policy OSC-6.6:** New developments should be designed to retain as many key character-defining features as possible in the restoration or renovation of historic buildings.
- ▶ **Policy OSC-6.7:** Wherever possible, new developments involving historic structures should maintain or restore original building proportions, dimensions, and elements.
- ▶ **Policy OSC-6.8:** The City will provide information to property owners regarding tax incentives and other federal and state programs, including the State Historical Building Code, to encourage the preservation and rehabilitation of historic structures.
- ▶ **Program OSC-6.1: Historic Resource Inventory.** The City will maintain an inventory of historic and potentially-historic structures and resources in the Downtown Waterfront Specific Plan Area. The inventory will include the date of construction; information regarding the architectural style and significance; information regarding significant historical figures or events that had occurred at or near the resource; and additional background about why the resource should be preserved.
- ▶ **Program OSC-6.2: Documentation of Historic Resources.** In cases where the preservation of a historic resource is not feasible, the City will require that the resource be documented and the information regarding the resource be retained in a secure, but publicly accessible location. The resource proposed for removal should be described and incorporated into historic and/or interpretive signage. The reuse and display of historic materials and artifacts from the resource is encouraged.
- ▶ **Program OSC-6.3: Historic Rehabilitation Projects.** The City will proactively research opportunities for funding that can be used to provide financial support for historic rehabilitation projects, particularly in the Downtown Waterfront District. The City will prioritize and give special emphasis to the potential for rehabilitation projects involving structures that are grouped in close proximity, particularly rural, agricultural, settlement-related structures, and structures associated with the railroad.

## Conclusion

The City has developed policies and programs in the 2035 General Plan to help preserve and enhance Suisun City's Historic Downtown by maintaining an inventory of historic and potentially-historic structures and resources in the Downtown Waterfront Specific Plan Area; encouraging preservation of buildings, building features, and other elements that have historical or architectural value; encouraging design and placement of development to be compatible with adjacent historical buildings and features; exploring tax and financial programs to encourage preservation of historical resources; and requiring documentation of historical resources when preservation is not feasible. While these policies and programs would encourage and enhance preservation of significant historical resources, it is possible that new development could require demolition of historically significant resources. While documentation of resources prior to demolition would reduce the magnitude of the impact, the loss of the historical resource would result in a **significant** impact.



## Mitigation Measure

The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. The impact is considered **significant and unavoidable**.

**IMPACT 3.4-2** **Destruction or Damage to Archaeological Resources, Paleontological Resources, or Human Remains.**  
*Land use change contemplated under the 2035 General Plan would involve grading, excavation, and potentially other ground-disturbing activities that could disturb or damage any previously unidentified archaeological resources or human remains. This impact is **potentially significant**.*

The NWIC records search did not indicate any known archaeological resources or sites within the City's Planning Area that are listed or eligible for listing on the NRHP or CRHR. General observations about archaeological sensitivity, i.e., the possible occurrence of archaeological deposits, can be made based on the characteristics and distribution of known cultural resources. Areas in which prehistoric archaeological sites are likely to be present within the Planning Area include, but are not limited to, areas adjacent or near to year-round or seasonal water courses. Areas in which historic archaeological resources are likely present include, but are not limited to, areas with large, old eucalyptus trees or any other stand or grouping of non-native trees that appear old (such as orchards); near railroads; historic farms and ranches; historic downtowns; and places where old structures are indicated on historic maps but are no longer standing.

Land use change accommodated under the 2035 General Plan would involve grading, excavation, and potentially other ground-disturbing activities which could disturb or damage as-yet-undiscovered archaeological resources, paleontological resources, or human remains. It is possible that resources have been covered by deposits that could be removed, exposing the cultural deposits during project-related construction activities.

### Relevant Policies and Programs of the 2035 General Plan

- ▶ **Policy OSC-5.1:** The City will use geologic mapping and cultural resource databases to determine the likely presence of resources and the appropriate level of cultural resources analysis and mitigation required for new developments.
- ▶ **Policy OSC-5.2:** New developments shall be designed to avoid adverse impacts to any known archaeological and paleontological resources, wherever feasible.
- ▶ **Program OSC-5.1: Cultural Resource Review and Mitigation.** New development projects that could have significant adverse impacts to prehistoric or historic resources shall be required to assess impacts and provide feasible mitigation. The following steps, or those deemed equally effective by the City, will be followed:
  - ▶ Request information from the Native American Heritage Commission regarding Native American groups that may have important sites in areas that could be affected by project development.
  - ▶ Involve the local Native American community in determining the appropriate mitigation of impacts to significant prehistoric sites.
  - ▶ Consult updated information from the Northwest Information Center regarding cultural resource sites, structures, or landscapes that could be affected by project activities.



- ▶ Based upon the sensitivity of the subject proposed project area, additional technical work may be required. Where a cultural resources survey has not been performed:
  - a pedestrian survey may be required in areas of low sensitivity;
  - a pedestrian survey will be required in areas of moderate and high sensitivity; and
  - Based on findings of the pedestrian survey, additional technical studies may be required, such as geoarchaeological sensitivity analysis, Native American consultation, ethnographic studies, or other analysis scaled according to the nature of the individual project.
- ▶ Determination of impacts, significance, and mitigation (i.e., site monitors, avoidance, and/or other measures) shall be made by a qualified professional archaeologist or architectural historian, as appropriate.
- ▶ If impacts cannot be avoided through project design, appropriate and feasible treatment measures are required. Such measures may consist of, but are not limited to actions, such as data recovery excavations, photographic documentation, or preparation of design drawings documenting the resource subject to significant impacts.
- ▶ Provide the Northwest Information Center with appropriate California Department of Parks and Recreation site record forms and cultural resources reports documenting resources that may be identified through technical work performed to review projects accommodated under the General Plan.
- ▶ If human remains are discovered during construction of projects occurring under General Plan buildout, the project proponent and landowner shall comply with California Health and Safety Code Section 7050.5 and California Public Resources Code Section 7050.5.

## Conclusion

The City has developed policies and programs in the 2035 General Plan to minimize impacts to archaeological resources, including requiring cultural and paleontological resource investigations to be conducted for new development that has the potential to inadvertently damage or destroy archaeological resources, paleontological resources, or human remains during construction activities. While the actions encouraged and required by these policies and programs would, in most cases, avoid or minimize impacts on archaeological resources, paleontological resources, or human remains, it is not always feasible to preserve significant resources in place. The impact is **significant**.

## Mitigation Measure

The policies and programs of the 2035 General Plan and compliance with other relevant requirements represent all feasible mitigation. Because it is possible that all significant archaeological and paleontological resources will not be feasibly preserved, and because there is not additional feasible mitigation, the impact would be **significant and unavoidable**.

**Native American Heritage Commission  
Native American Contacts List  
December 28, 2021**

Cachil DeHe Band of Wintun Indians of the Colusa Indian Community Daniel Gomez, Chairman 3730 Highway 45 Colusa, CA 95932 dgomez@colusa-nsn.gov (530) 458-8231 (530) 458-4186	Wintun (Patwin)	The Confederated Villages of Lisjan Corrina Gould, Chairperson 10926 Edes Avenue Oakland, CA 94603 cvltribe@gmail.com (510) 575-8408	Ohlone/Costanoan
Cortina Rancheria - Kletsel Dehe Band of Wintun Indians Charlie Wright, Chairperson P.O. Box 1630 Williams, CA 95987 (530) 473-3274 Office (530) 473-3301 Fax	Wintun / Patwin	Yocha Dehe Wintun Nation Anthony Roberts, Chairperson P.O. Box 18 Brooks, CA 95606 thpo@yochadehe-nsn.gov (530) 796-3400	Wintun (Patwin)
Guidiville Indian Rancheria Donald Duncan, Chairperson P.O. Box 339 Talmage, CA 95481 admin@guidiville.net (707) 462-3682 (707) 462-9183 Fax	Pomo		
Muwekma Ohlone Indian Tribe of the SF Bay Area Charlene Nijmeh, Chairperson 20885 Redwood Road, Suite 232 Castro Valley, CA 94546 cnijmeh@muwekma.org (408) 464-2892 (408) 205-9714	Ohlone / Costanoan		
North Valley Yokuts Tribe Katherine Erolinda Perez, Chairperson P.O. Box 717 Linden, CA 95236 canutes@verizon.net (209) 887-3415	Ohlone/Costanoan Northern Valley Yokuts Bay Miwok		

**From:** [April Wooden](#)  
**To:** [Abraham, Christine](#); [Medler, Emily](#)  
**Cc:** [John Kearns](#)  
**Subject:** Information regarding tribal consultations  
**Date:** Tuesday, December 20, 2022 1:52:47 PM  
**Attachments:** [image001.png](#)  
[Treatment Protocol.pdf](#)  
[Yocha Dehe Wintun Nation Standard Monitoring Agreement.docx](#)  
[SB18 AB52 Consultation letter Confederated Villages of Lisjan 9 28 2022.docx](#)  
[NAHC tribes list 12 2021.pdf](#)  
**Importance:** High

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Christine,  
Attached please find the list of tribes contacted, a sample letter, and two documents forwarded by the Yocha Dehe Wintun Nation.

The City engaged in two consultations with the Yocha Dehe Wintun Nation and with the Confederated Villages of Lisjan nation.

Corrina Gould is the Tribal Chair for the Confederated Villages of Lisjan Nation. After consultation, this tribe was comfortable that the City had mitigation measures in place to adequately address their potential concerns.

Eric Hernandez is the Site Protection Manager for the Yocha Dehe Wintun Nation. During consultation, Eric determined that a standard monitoring agreement (draft document attached above) should be executed. I am in the process of preparing that document for execution. In addition, he asked that a specific treatment protocol be included as a condition of approval. That treatment protocol is attached hereto.

Contact information for the tribes is:

Eric Hernandez  
Site Protection Manager  
Yocha Dehe Wintun Nation  
PO Box 18 | Brooks, CA 95606  
p 530.796.2029 | c 530.723.3313  
f 530.796.2143  
[ehernandez@yochadehe.gov](mailto:ehernandez@yochadehe.gov)  
[www.yochadehe.org](http://www.yochadehe.org)

Corrina Gould  
Tribal Chair  
The Confederated Villages of Lisjan Nation  
10926 Edes Ave  
Oakland, CA 94603  
[cvltribe@gmail.com](mailto:cvltribe@gmail.com)

Please let me know if you need further information in order to complete the relevant section of the modified initial study. I am available all afternoon.

Sincerely,

**April Wooden**  
Special Projects, Development Services Department



701 Civic Center Blvd. | Suisun City, CA 94585  
Mobile: 831-915-2189



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CITY COUNCIL

Mayor  
Alma Hernandez, Mayor Pro-Tem  
Jane Day  
Michael Hudson  
Wanda Williams



CITY COUNCIL MEETING

First and Third Tuesday  
Every Month

## CITY OF SUISUN CITY

701 Civic Center Blvd.  
Suisun City, California 94585  
Incorporated October 9, 1868

September 28, 2022

### **RE: AB52 and SB18 CONSULTATION REQUEST ON THE PREPARATION OF A MODIFIED INITIAL STUDY FOR THE TRACTOR SUPPLY RETAIL STORE PROJECT.**

Corrina Gould, Chairperson  
**THE CONFEDERATED VILLAGES OF LISJAN**  
10926 Edes Ave  
Oakland, CA 94603

Dear Ms. Gould:

This is an invitation for your participation to consult on the City's preparation of a Modified Initial Study for the proposed Tractor Supply Retail Store project located on Highway 12, adjacent to Sunset Shopping Center, east of Sunset Avenue and west of Snow Drive. Public Resources Code Section 21080.3.1 allows California Native American tribes to request consultation with the city on the preparation of the Modified Initial Study if written notice is provided to the city within **30 days** of receipt of this notice.

Government Code Section 65452.3(a)(s) allows California Native American tribes **90 days** from the date of receipt of this notice to request consultation with the city regarding the Modified Initial Study. Below please find a description of the proposed project, a map showing the project location, and the name of our project point of contact, pursuant to PRC § 21080.3.1 (d).

#### **Project Summary:**

Applicant: Yuba Investments Highway 12, LP (Hilbers, Inc. Sutter Development).

Project Description: The project is proposed to located on a 3.19-acre vacant site. The project is an 18,800-square-foot retail store selling farm and home hardware products, along with a 3,224-square-foot feed storage building, and a 1250 forage shed.

Zoning: CMU Commercial Mixed Use.

Entitlements requested: Site Plan and Architectural Review, Lot Line Adjustment, Variance.

Lead Agency Contact: April Wooden, Special Projects

DEPARTMENTS: AREA CODE (707)

ADMINISTRATION 421-7300 ■ DEVELOPMENT SERVICES 421-7335 ■ BUILDING 421-7310 ■ FINANCE 421-7320  
FIRE 425-9133 ■ RECREATION & COMMUNITY SERVICES 421-7200 ■ POLICE 421-7373 ■ PUBLIC WORKS 421-7340  
SUCCESSOR AGENCY 421-7309 FAX 421-7366



Project location: Highway 12, adjacent to Sunset Shopping Center, east of Sunset Avenue and west of Snow Drive.



The city adopted a comprehensive update to the General Plan in 2015, for which an EIR was certified. **The General Plan EIR covered potential impacts to tribal cultural resources and included applicable mitigation measures to reduce potential impacts. The General Plan includes policies regarding archeological resources and the preservation of those resources.** For reference purposes, the previous mitigation is attached to this letter to further assist the tribe in deciding if additional consultation regarding this project is necessary.

Should you have any questions regarding this Project or would like to consult with the city, please contact me at (831) 915-2189 or via email at [awooden@suisun.com](mailto:awooden@suisun.com).

Respectfully,

*April Wooden*

April Wooden, Special Projects



YOCHA DEHE  
CULTURAL RESOURCES

**Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation**

The purpose of this Protocol is to formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items, and items of cultural patrimony, in the event that any are found in conjunction with development, including archaeological studies, excavation, geotechnical investigations, grading, and any ground disturbing activity. This Protocol also formalizes procedures for Tribal monitoring during archaeological studies, grading, and ground-disturbing activities.

**I. Cultural Affiliation**

The Yocha Dehe Wintun Nation (“Tribe”) traditionally occupied lands in Yolo, Solano, Lake, Colusa and Napa Counties. The Tribe has designated its Cultural Resources Committee (“Committee”) to act on the Tribe's behalf with respect to the provisions of this Protocol. Any human remains which are found in conjunction with Projects on lands culturally-affiliated with the Tribe shall be treated in accordance with Section III of this Protocol. Any other cultural resources shall be treated in accordance with Section IV of this Protocol.

**II. Inadvertent Discovery of Native American Human Remains**

Whenever Native American human remains are found during the course of a Project, the determination of Most Likely Descendant (“MLD”) under California Public Resources Code Section 5097.98 will be made by the Native American Heritage Commission (“NAHC”) upon notification to the NAHC of the discovery of said remains at a Project site. If the location of the site and the history and prehistory of the area is culturally-affiliated with the Tribe, the NAHC contacts the Tribe; a Tribal member will be designated by the Tribe to consult with the landowner and/or project proponents.

Should the NAHC determine that a member of an Indian tribe other than Yocha Dehe Wintun Nation is the MLD, and the Tribe is in agreement with this determination, the terms of this Protocol relating to the treatment of such Native American human remains shall not be applicable; however, that situation is very unlikely.

**III. Treatment of Native American Remains**

In the event that Native American human remains are found during development of a Project and the Tribe or a member of the Tribe is determined to be MLD pursuant to Section II of this Protocol, the following provisions shall apply. The Medical Examiner shall immediately be notified, ground disturbing activities in that location shall cease and the Tribe shall be allowed, pursuant to California Public Resources Code Section 5097.98(a), to (1) inspect the site



YOCHA DEHE  
CULTURAL RESOURCES

of the discovery and (2) make determinations as to how the human remains and grave goods should be treated and disposed of with appropriate dignity.

The Tribe shall complete its inspection and make its MLD recommendation within forty-eight (48) hours of getting access to the site. The Tribe shall have the final determination as to the disposition and treatment of human remains and grave goods. Said determination may include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be disturbed in the future.

The Tribe may wish to rebury said human remains and grave goods or ceremonial and cultural items on or near the site of their discovery, in an area which will not be subject to future disturbances over a prolonged period of time. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b).

The term "human remains" encompasses more than human bones because the Tribe's traditions call for the burial of associated cultural items with the deceased (funerary objects), and/or the ceremonial burning of Native American human remains, funerary objects, grave goods and animals. Ashes, soils and other remnants of these burning ceremonies, as well as associated funerary objects and unassociated funerary objects buried with or found near the Native American remains are to be treated in the same manner as bones or bone fragments that remain intact.

#### **IV. Non-Disclosure of Location of Reburials**

Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 *et seq.* The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). The Tribe will require that the location for reburial is recorded with the California Historic Resources Inventory System ("CHRIS") on a form that is acceptable to the CHRIS center. The Tribe may also suggest that the landowner enter into an agreement regarding the confidentiality of site information that will run with title on the property.

#### **V. Treatment of Cultural Resources**

Treatment of all cultural items, including ceremonial items and archeological items will reflect the religious beliefs, customs, and practices of the Tribe. All cultural items, including ceremonial items and archeological items, which may be found at a Project site should be turned over to the Tribe for appropriate treatment, unless otherwise ordered by a court or agency of competent jurisdiction. The Project Proponent should waive any and all claims to ownership of



YOCHA DEHE  
CULTURAL RESOURCES

Tribal ceremonial and cultural items, including archeological items, which may be found on a Project site in favor of the Tribe. If any intermediary, (for example, an archaeologist retained by the Project Proponent) is necessary, said entity or individual shall not possess those items for longer than is reasonably necessary, as determined solely by the Tribe.

**VI. Inadvertent Discoveries**

If additional significant sites or sites not identified as significant in a Project environmental review process, but later determined to be significant, are located within a Project impact area, such sites will be subjected to further archeological and cultural significance evaluation by the Project Proponent, the Lead Agency, and the Tribe to determine if additional mitigation measures are necessary to treat sites in a culturally appropriate manner consistent with CEQA requirements for mitigation of impacts to cultural resources. If there are human remains present that have been identified as Native American, all work will cease for a period of up to 30 days in accordance with Federal Law.

**VIII. Work Statement for Tribal Monitors**

The description of work for Tribal monitors of the grading and ground disturbing operations at the development site is attached hereto as Addendum I and incorporated herein by reference.



YOCHA DEHE  
CULTURAL RESOURCES

**ADDENDUM I**

**Yocha Dehe Wintun Nation  
Tribal Monitors  
Description of Work and Treatment Protocol**

**I. Preferred Treatment**

The preferred protocol upon the discovery of Native American human remains is to (1) secure the area, (2) cover any exposed human remains or other cultural items, and (3) avoid further disturbances in the area.

**II. Comportment**

All parties to the action are strongly advised to treat the remains with appropriate dignity, as provided in Public Resource Code Section 5097.98. We further recommend that all parties to the action treat tribal representatives and the event itself with appropriate respect. For example, jokes and antics pertaining to the remains or other inappropriate behavior are ill advised.

**III. Excavation Methods**

If, after the Yocha Dehe Tribal representative has been granted access to the site and it is determined that avoidance is not feasible, an examination of the human remains will be conducted to confirm they are human and to determine the position, posture, and orientation of the remains. At this point, we recommend the following procedures:

*(A) Tools.* All excavation in the vicinity of the human remains will be conducted using fine hand tools and fine brushes to sweep loose dirt free from the exposure.

*(B) Extent of Exposure.* In order to determine the nature and extent of the grave and its contents, controlled excavation should extend to a full buffer zone around the perimeter of the remains.

*(C) Perimeter Balk.* To initiate the exposure, a perimeter balk (especially, a shallow trench) should be excavated, representing a reasonable buffer a minimum of 10 cm around the maximum extent of the known skeletal remains, with attention to counter-intuitive discoveries or unanticipated finds relating to this or other remains. The dirt from the perimeter balk should be bucketed, distinctly labeled, and screened for cultural materials.

*(D) Exposure Methods.* Excavation should then proceed inward from the walls of the balk as well as downward from the surface of the exposure. Loose dirt should be scooped out and brushed off into a dustpan or other collective device. Considerable care should be



given to ensure that human remains are not further impacted by the process of excavation.

*(E) Provenience.* Buckets, collection bags, notes, and tags should be fully labeled per provenience, and a distinction should be made between samples collected from: (1) **Perimeter Balk** (described above), (2) **Exposure** (dirt removed in exposing the exterior/burial plan and associations, and (3) **Matrix** (dirt from the interstices between bones or associations). Thus, each burial may have three bags, “Burial 1 Perimeter Balk,” “Burial 1 Exposure Balk,” “Burial 1 Matrix.”

Please note the provisions below with respect to handling and conveyance of records and samples.

*(F) Records.* The following records should be compiled in the field: (1) a detailed scale drawing of the burial, including the provenience of and full for all human remains, associated artifacts, and the configuration of all associated phenomena such as burial pits, evidence for preinterment grave pit burning, soil variability, and intrusive disturbance, (2) complete a formal burial record using the consultants proprietary form or other standard form providing information on site #, unit or other proveniences, level depth, depth and location of the burial from a fixed datum, workers, date(s), artifact list, skeletal inventory, and other pertinent observations, (3) crew chief and worker field notes that may supplement or supercede information contained in the burial recording form, and (4) photographs, including either or standard photography or high-quality (400-500 DPI or 10 MP recommended) digital imaging.

*(G) Stipulations for Acquisition and Use of Imagery.* Photographs and images may be used only for showing location or configuration of questionable formation or for the position of the skeleton. They are not to be duplicated for publication unless a written release is obtained from the Tribe.

*(H) Association.* Association between the remains and other cultural materials should be determined in the field in consultation with an authorized Tribal representative, and may be amended per laboratory findings. Records of provenience and sample labels should be adequate to determine association or degree of likelihood of association of human remains and other cultural materials.

*(I) Samples.* For each burial, all **Perimeter Balk** soil is to be 1/8”-screened. All **Exposure** soil is to be 1/8”-screened, and a minimum of one 5-gallon bucket of excavated but unscreened Exposure soil is to be collected, placed in a plastic garbage bag in the bucket. All **Matrix** soil is to be carefully excavated, screened as appropriate, and then collected in plastic bags placed in 5-gallon buckets.



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*(J) Human remains are not to be cleaned in the field.*

*(K) Blessings.* Prior to any physical action related to human remains, a designated tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring that individuals and tools involved in the action are available for traditional blessings and prayers, as necessary.

#### **IV. Lab Procedures**

No laboratory studies are permitted without consultation with the tribe. Lab methods are determined on a project-specific basis in consultation with Yocha Dehe Wintun Nation representatives. The following procedures are recommended:

*(A) Responsibility.* The primary archaeological consultant will be responsible for insuring that all lab procedures follow stipulations made by the Tribe.

*(B) Blessings.* Prior to any laboratory activities related to the remains, a designated tribal representative will conduct prayers and blessings over the remains. The archaeological consultant will be responsible for insuring that individuals and tools involved in the action are available for traditional blessings and prayers, as necessary.

*(C) Physical Proximity of Associations.* To the extent possible, all remains, associations, samples, and original records are to be kept together throughout the laboratory process. In particular, **Matrix** dirt is to be kept in buckets and will accompany the remains to the lab. The primary archaeological consultant will be responsible for copying all field records and images, and insuring that the original notes and records accompany the remains throughout the process.

*(E) Additional Lab Finds.* Laboratory study should be done making every effort to identify unanticipated finds or materials missed in the field, such as objects encased in dirt or human remains misidentified as faunal remains in the field. In the event of discovery of additional remains, materials, and other associations the tribal representatives are to be contacted immediately.

#### **V. Re-internment without Further Disturbance**

No laboratory studies are permitted on human remains and funerary objects. The preferred treatment preference for exhumed Native American human remains is reburial in an area not subject to further disturbance. Any objects associated with remains will be reinterred with the remains.



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#### **VI. Curation of Recovered Materials**

Should all, or a sample, of any archaeological materials collected during the data recovery activities – with the exception of Human Remains – need to be curated, an inventory and location information of the curation facility shall be given to tribe for our records.



Standard Monitoring Agreement  
Between  
Yocha Dehe Wintun Nation  
And

This MONITORING AGREEMENT ("Agreement") is made and entered into as of \_\_\_\_\_, \_\_\_\_\_, by and between the **Yocha Dehe Wintun Nation**, a federally recognized Indian tribe ("Yocha Dehe" or "Tribe") on the one hand, and \_\_\_\_\_ (**hereinafter "Contractor"**) on the other hand. Yocha Dehe and Contractor are collectively referenced hereinafter as the "Parties".

**I. RECITALS**

**A. Subject Matter:** This Agreement concerns the use and/or development of real property located within the area of \_\_\_\_\_, and which is the subject of development by Contractor. The development is commonly known as \_\_\_\_\_, hereinafter referenced as the "Project" and is described in Attachment I of this Agreement. As used herein, the Area of Potential Effect (or APE) includes \_\_\_\_\_.

**B. Purpose:** The purpose of this Agreement is to establish fee schedules and terms for the use of Yocha Dehe tribal monitors for the Project; establish protocols for the relationship between Yocha Dehe and the Contractor; formalize procedures for the treatment of Native American human remains, grave goods, ceremonial items and any cultural artifacts, in the event that any are found in conjunction with the Project's development, including archaeological studies, excavation, geotechnical investigations, grading and any ground disturbing activity. This Agreement is entered into as mitigation under the California Environmental Quality Act ("CEQA") and/or the National Environmental Policy Act ("NEPA") and Section 106 of the National Historic Preservation Act ("Section 106"), and any such mitigation may be a condition of approval for said Project.

**C. Cultural Affiliation:** The Tribe traditionally occupied, and can trace its historical ties to, land in the Project's Area of Potential Effect ("APE" or "Project Area"). The Project is within the boundaries of the Yocha Dehe Linguistic Territory. Thus, cultural resources identified in the APE are related to the history and tradition of the Yocha Dehe Wintun Nation and Patwin speaking peoples. Yocha Dehe has designated its Cultural Resources Department to act on its behalf with respect to the provisions of this Agreement. Any Native American human remains, grave goods, ceremonial items, and cultural items or artifacts that are found in conjunction with the development of this Project shall be treated in accordance with the Provisions of this Agreement.

**II. TERMS**

**A. Incorporation of Recitals:** All of the foregoing recitals are accurate and are incorporated in this Agreement by reference.

**B. Term:** This Agreement shall be effective as of the date of execution and it shall remain in effect until the Project's completion.

**C. Scope of Services and Specifications:** Given the nature and sensitivity of archaeological sites and cultural resources that are or may be within the Project area (a map of which is shown and attached hereto as Attachment I). Yocha Dehe shall provide tribal monitoring and consultation for the Project during the archaeological investigations and all ground disturbing activities required for the Project. Yocha Dehe monitors will work in collaboration with the archaeologists, inspectors, project managers and other consultants hired/employed by the Contractor.

**D. Fee Schedule:**

The fee schedule for the use of Yocha Dehe Wintun Nation monitors and staff is as follows;

Native American Monitoring	\$82.50 hourly rate (per monitor)
Overtime (over 8 hrs in a day)	\$123.75 hourly rate (per monitor)
Weekend and Holiday Hours	\$123.75 hourly rate Saturday; and \$165.00 hourly rate Sunday and Holiday
Cultural Resources Manager (4 hour minimum)	\$192.50 (per hour)
Tribal Historic Preservation Officer/ Cultural Resources Director (4 hour minimum)	\$220.00 (per hour)
Tribal Executives (4 hour minimum)	\$220.00 (per hour)
Cultural Sensitivity Training	\$300.00
Tribal Records Search	\$150.00
Ground Penetrating Radar	\$1,000 (per day)
Administrative Fee	15% of Invoice

Yocha Dehe's monitors will bill for time spent traveling to and from any Project site. In addition, Yocha Dehe shall be reimbursed for all costs associated with travel to and from the Project. Eligible items for cost reimbursement shall include, but not be limited to, mileage (or fuel purchases, at the submitter's election), hotel, and per diem (GSA rate).

**E. Coordination with County Coroner's Office.** In the event human remains are discovered on or near the Project site during its development, Contractor shall immediately contact the Coroner, the Yocha Dehe Director of Cultural Resources, Cultural Resources Manager, the Cultural Resources Committee Chairperson, and the Tribal Chairman. In order to facilitate this Agreement's implementation, the appropriate County Coroner's Office shall be provided a copy of this

Agreement either before any earth disturbing activities or upon request of the Tribe. Yocha Dehe agrees to provide Contractor the needed contact information in order to comply with this provision. The Coroner shall be asked by the Contractor to determine if the remains are (1) human, (2) prehistoric, and further, the Contractor shall request the Coroner notify the State of California's Native American Heritage Commission in the event the remains are determined to be Native American. The Contractor will compensate the Coroner for reasonable fees and costs, if applicable and required by the County Coroner's office.

**F. Most Likely Descendant (MLD):** The Yocha Dehe Wintun Nation as the MLD for any Human Remains, Associated Funerary Objects and Artifacts found within the exterior boundaries of the Yocha Dehe Wintun Nation Linguistic Territory. Human Remains have been discovered within the Yocha Dehe Wintun Nation Linguistic Territory on occasion and in all of those cases, the Native American Heritage Commission ("NAHC") designated the Yocha Dehe Wintun Nation as the Most Likely Descendant ("MLD") under California Public Resources Code section 5097.98.

**G. Treatment and Disposition of Remains.** Where Native American human remains are discovered during the Project's development, and where Yocha Dehe has been designated the Most Likely Descendant (MLD), the following provisions shall apply to the Parties:

I. The Tribe shall be allowed, under California Public Resources Code sections 5097.98 (a) and 21083.2 and State CEQA Guidelines section 15064.5 (e), to: (1) inspect the site of the discovery; and (2) make recommendations as to how the human remains and grave goods shall be treated and disposed of with appropriate dignity.

II. The Tribe shall complete its inspection within twenty-four (24) hours of receiving notification from either the Contractor or the NAHC, as required by California Public Resources Code section 5097.98 (a). The Parties agree to discuss, in good faith, what constitutes "appropriate dignity" as that term is used in the applicable statutes.

III. Reburial of human remains shall be accomplished in compliance with the California Public Resources Code sections 5097.98 (a) and (b) and 21083.2 and State CEQA Guidelines section 15064.5 (e).

IV. The Parties are aware that Yocha Dehe may wish to rebury the human remains and associated ceremonial and cultural items (artifacts) on or near the site of their discovery, in an area that shall not be subject to future subsurface disturbances. Should Yocha Dehe recommend reburial of the human remains and associated ceremonial and cultural items (artifacts) on or near the site of their discovery, the Contractor shall make good faith efforts to accommodate the Tribe's request.

V. The term "human remains" encompasses more than human bones because Yocha Dehe's traditions periodically necessitated the ceremonial burning of human remains, and monitors shall make recommendations for removal of cremations. Grave goods are those artifacts associated with any human remains. These items and the soil, in an area encompassing up to two (2) feet in diameter around the burial, and other funerary remnants and their ashes, are to be treated in the same manner as human bone fragments or bones that remain intact

**H. Treatment and Disposition of Cultural Items (Artifacts).** Ceremonial items and items of cultural patrimony reflect traditional religious beliefs and practices of the Tribe. Contractor agrees to return all Native American ceremonial items and items of cultural patrimony that may be found on the Project site to the MLD for appropriate treatment, unless Contractor is ordered to do otherwise by a court or agency of competent jurisdiction. In addition, the Tribe requests the return of all other cultural items (artifacts) that are recovered during the course of archaeological investigations on or adjacent to the Project site. Where appropriate (from the perspective of Yocha Dehe), and agreed upon in advance by Yocha Dehe, certain analyses of certain artifact types will be permitted, which may include, but which may not necessarily be limited to, shell, bone, ceramic, stone and/or other artifacts.

**I. Ownership Relinquishment.** Contractor waives any and all claims to ownership of Native American ceremonial and cultural artifacts that may be found on the Project site. If examination of cultural artifacts by an entity or individual other than the MLD is necessary, that entity or individual shall return said artifacts to the MLD within thirty (30) days, or any other agreed upon time frame from the initial recovery of the items.

**J. The Description of Work.** Description of work for Yocha Dehe monitors for the grading and ground disturbing operations at the Project site is provided in **Attachment II** to this Agreement and incorporated herein by this reference. **Section I of Attachment II specifies the duties and responsibilities of the identified tribal monitoring crew and other specified parties. Section II of Attachment II identifies the geographical area over which the tribal monitoring crew shall oversee cultural resource mitigation and monitoring in accordance with California Public Resources Code section 21083.2 (c) and (k). Sections III and IV of Attachment II mandate compensation of the tribal monitoring crew by the Contractor.**

**K. Confidentiality.** Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed and will not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq. The County Coroner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r). Moreover, all records relative to consultation between the Parties shall be confidential and not subject to public disclosure as required by the California Public Records Act, Cal. Govt. Code § 6250 et seq.

Executed by:

**Yocha Dehe Wintun Nation**

**(Company Name)**

Signature: \_\_\_\_\_

Signature: \_\_\_\_\_

Print Name: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: Tribal Historic Preservation Officer

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Date: \_\_\_\_\_

## ATTACHMENT I

[Insert Tract Map for Project Name]

## Attachment II

### NATIVE AMERICAN MONITORING OF GRADING AND GROUND DISTURBING ACTIVITIES

- I. **Specifications:** Given the nature and sensitivity of the archaeological sites and cultural resources that are in or may be within the Project area, the Yocha Dehe Wintun Nation, a federally recognized Indian tribe and the Most Likely Descendant as identified by the Native American Heritage Commission, shall provide the tribal monitoring, consultation and facilitation for this Project during the archeological investigations, and all ground disturbing activities for the Project. Yocha Dehe's monitors will work in concert with the archaeologists and Project engineers hired/employed by Contractor. The tribal monitors or Project archaeologists will be empowered to halt all earthmoving equipment in the immediate area of discovery when cultural items or features are identified until further evaluation can be made in determining their significance. It is understood that all surface and subsurface artifacts of significance shall be collected and mapped during this operation following standard archaeological practices.

After discovery of cultural items or features' discussions between the tribal monitors and project archaeologist will occur to determine the significance of the situation and best course of action for avoidance, protection of resources, and/or data recovery, as applicable.

- II. **Project to be Monitored:** Monitoring shall encompass the area known as \_\_\_\_\_ and shall be known as the Project area. It is agreed that monitoring shall be allowed for all archaeological studies, excavations, and groundbreaking activities occurring in conjunction with the development of the Project.
- III. **Project Crew Size:** The Parties to this Agreement project the need for a tribal monitoring crew size to be determined by the Cultural Resource Manager, in accordance with Yocha Dehe Wintun Nation Cultural Law. If the scope of the work changes (*e.g.*, inadvertent discoveries of cultural resources or simultaneous grading of area that requires multiple tribal monitors), additional tribal monitors may be required. Developer agrees to directly compensate Yocha Dehe for all of the work performed by the tribal monitors. The compensation rate shall be made directly from Contractor to the Tribe in accordance with Section IV. If human remains are found, the coordination of the reburial of those remains and any associated cultural and ceremonial items shall be conducted in accordance with Sections III and IV of this Agreement.
- IV. **Insurance and Indemnity:** Yocha Dehe shall provide the tribal monitoring crew for the Project and shall be responsible for coordinating the tribal monitors' activities on the Project. The Tribe recognizes that dangerous conditions may exist on the work site, particularly during grading operations, and agrees to assume responsibility for the safety of the tribal monitoring crew while the crew remains on the Project site. The Tribe possesses the necessary insurance to cover any bodily injury or property damage that

may be suffered by the tribal monitors and proof of such insurance shall be made available to Contractor upon request.

- V. **Compensation:** Contractor shall directly compensate the Tribe in accordance with the following compensation rates and procedures. Invoices will be submitted on a monthly basis and shall be paid within 30 days of submittal to assure timely tribal monitor compensation and to further assure that tribal monitoring will not be terminated for the Project.

A minimum half-day charge ("show up" time) shall be charged to Contractor for unannounced work stoppages of the tribal monitors that are not due to actions by Yocha Dehe.

- VI. **Rights of Access/Stoppage/Consultation Upon Discovery:** Contractor shall provide Yocha Dehe tribal monitors with unencumbered access to the Project site as reasonably necessary for the monitors to effectively perform the services required by this Agreement. The tribal monitors and/or project archaeologist will be empowered to halt all earthmoving equipment in the immediate area of discovery when cultural items or features are identified until further evaluation can be made in determining their significance. It is understood that all surface and subsurface artifacts, Native American human remains, funerary objects, items of cultural patrimony, and any other cultural items shall be treated in accordance with an agreed upon artifact treatment and disposition plan.

After discovery of cultural items or features, discussions between the tribal monitors and project archaeologist will occur to determine its significance and the best course of action for avoidance, protection of resources, and/or data recovery, as applicable. While determinations will be mostly in the field, Yocha Dehe's tribal monitors may need to seek further guidance from the Most Likely Descendent, Yocha Dehe Tribal Council and/or the Cultural Resources Committee. If this rare occurrence should arise, Yocha Dehe reserves the right to request a 30-day stoppage of work.

Where circumstances warrant, the Contractor may be required, at its sole expense, to provide security personnel or remove unnecessary persons from the Project site. For example, where the safety of tribal monitors is at risk due to controversy or other circumstances surrounding a particular Project's development, security personnel would be provided at the Contractor's expense and members of the public excluded from the site. Likewise, where the protocol for the treatment of Native American human remains, funerary objects, artifacts, or items of cultural patrimony deems culturally required or appropriate, Contractor agrees unnecessary personnel will leave the site during the relevant time period.