DRAFT INITIAL STUDY WITH PROPOSED MITIGATED NEGATIVE DECLARATION

AGAVE RESIDENTIAL DEVELOPMENT PROJECT

Prepared by

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

Prepared for Bright Development
and the City of Stockton

October 2024

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GENERAL INFORMATION ABOUT THIS DOCUMENT

What's in this document:

Bright Development has prepared this Initial Study, which examines the potential environmental impacts of the proposed 93-lot single family residential subdivision on an approximately 13.6-acre parcel within the City of Stockton. The document explains the proposed Project details, the existing environment that could be affected by the Agave Residential Development Project (Project), potential impacts, and proposed avoidance, minimization, and/or mitigation measures.

Project Description

The proposed Project would subdivide a portion of the parcel into 93 single family residential lots, various open space lots and landscape strips, off-site basin and extension of Tam O' Shanter Drive, new private streets, and a primary gated entry off Ronald E. McNair Way. Secondary access to the Project would be via emergency vehicle access located at the existing West Lane Frontage Road. The proposed Project entitlements consist of a vesting tentative map and Planned Development Permit.

What you should do:

- Please read the document. Hard copies of the document are available for review at:

  City of Stockton, Community Development Department

  345 N. El Dorado Street

  Stockton, CA 95202

  An electronic copy of the document is also available for review under the Project name at: https://

  www.stocktonca.gov/business/planning___engineering/other_projects_environmental.php

- Please submit your comments via e-mail to nicole.moore.CTR@stocktonca.gov no later than ~~January 6, 2025.~~ Please include the Project title in the subject line and include the commentor's name and mailing address.

  You may also submit your comments in writing to:

  City of Stockton, Community Development Department
  ATTN: Nicole Moore
  345 N. El Dorado Street
  Stockton, CA 95202

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LIST OF ABBREVIATIONS

AB	Assembly Bill
ACE	Areas of Conservation Emphasis
ACHP	Advisory Council on Historic Preservation
AIA	Air Impact Assessment
AIRFA	American Indian Religious Freedom Act
BAU	Business as Usual
BIOS	Biogeographic Information and Observation System
BMPs	Best Management Practices
BPS	Best Performance Standards
BSA	Biological Study Area
BTU	British Thermal Units
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CalNAGPRA	California Native American Graves Protection and Repatriation Act
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAP	Climate Change Action Plan
CCIC	California Cultural Information Center
CDOC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CGP	Construction General Permit
City	City of Stockton
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
County	San Joaquin County
CRHR	California Register of Historical Resources
CWA	Clean Water Act
dB	Decibel
dBA	A-Weighted Decibel
DCP	Dust Control Plan
District	San Joaquin Valley Air Pollution Control District
DTSC	California Department of Toxic Substances
DWR	California Department of Water Resources
EIA	United States Energy Information Association
EIR	Environmental Impact Report

EOP	Emergency Operations Plan
EPA	United States Environmental Protection Agency
°F	Degrees Fahrenheit
FDS	Fee Deferral Schedule
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FGC	California Fish and Game Code
FIP	Federal Implementation Plan
FIRM	Flood Insurance Rates Maps
FMMP	Farmland Mapping and Monitoring Program
GAMAQI	Guide for Assessing and Mitigating Air Quality Impacts
GHG	Greenhouse Gases
IBC	International Building Code
IPaC	Information for Planning and Consultation
IPCC	Intergovernmental Panel on Climate Change
IS/MND	Initial Study with Mitigated Negative Declaration
ISR	Indirect Source Rule
ITA	Indian Trust Assets
ITMM	Incidental Take Minimization Measure
ITP	Incidental Take Permit
IWR	Institute of Water Research
LAFCO	Local Agency Formation Commission
LED	Light Emitting Diode
LOS	Level of Service
LUSD	Lodi Unified School District
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MRS	Monitoring and Reporting Schedule
MS4	Municipal Separate Storm Sewer System
MT	Metric Tons
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
OES	Office of Emergency Services
OPR	Governor's Office of Planning and Research

OSHA	Occupational Safety and Health Administration
PD	Planned Development Permit
PFF	Public Facilities Fee
PG&E	Pacific Gas and Electric
Porter-Cologne Act	Porter-Cologne Water Quality Act
PRC	Public Resources Code
Project	Agave Residential Development Project
RL	Residential, Low Density
RTP/SCS	Regional Transportation Plan and Sustainable Communities Strategy
RWCF	Regional Wastewater Control Facility
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
s.f.	Square Foot
SIP	State Implementation Plan
SJCOG	San Joaquin Council of Governments
SJMSCP	San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan
SMC	Stockton Municipal Code
SSC	Species of Special Concern
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWQCCP	Storm Water Quality Control Criteria Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TCL	Traditional Cultural Landscapes
TCP	Traditional Cultural Properties
TCR	Tribal Cultural Resource
TIA	Transportation Impact Analysis
UCMP	University of California Museum of Paleontology
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VMT	Vehicle Miles Traveled
WEI	Wind Erodibility Index
WoS	Waters of the State
WOTUS	Waters of the United States
WSS	Web Soil Survey

1.0 Introduction

Bright Development proposes to develop a 93-lot single-family residential subdivision on an approximately 13.6-acre parcel within the City of Stockton (City), as the Agave Residential Development Project (Project). The parcel is currently a vacant lot with a few trees located on site, and a row of trees located at the southerly boundary.

1.1 Project Description

The proposed Project would subdivide the parcel into a gated community containing 93 single-family residential lots, various open space lots and landscape strips, an off-site basin, the extension of Tam O' Shanter Drive, new private streets, and a primary gated entry off Ronald E. McNair Way. Secondary access to the Project would be via a gated emergency vehicle access (EVA) located at the existing West Lane Frontage Road. There is a separate parcel, which includes one (1) single family residence, that is located within the interior of the Project area. Access to this property will be provided by the proposed street improvements along Aloe Road. However, this privately-owned parcel is not part of the Project and is therefore not included in this Initial Study analysis. The proposed Project entitlements consist of a vesting tentative map, Design Review, Planned Development (PD) Permit, and heritage tree permit.

Open Space: The Project has several common area landscape lots that will serve as amenities, as well as storm drainage treatment. Lots A, B, and D contain usable open space, as well as storm treatment swales that will be integrated into the landscaping. Lot C will remain an open lot with minimal ground covering. Lot F is an open space lot that may be developed in the future with APN 084-060-13. The Project provides 2.72 acres including front yards and open space lots (the off-site basin (Lot E), Lot C and Lot F are not included in this calculation).

Gated Entry: The Project's gated entry has been designed using City of Stockton standards for cross section design and stacking distance.

Off-site Improvements: The Project applicant proposes the extension of Tam O' Shanter Drive from the existing stub to the southwest of the Project, to the intersection on Ronald E. McNair Way. A portion of the extension runs through the Agave project area, and the remaining portion is located on APN 084-060-13. The extension of Tam O' Shanter Drive would partially occur within unincorporated San Joaquin County, outside of the limits of the City of Stockton; however, the Project proposes to annex this area into the City. This Initial Study is intended to cover the minor boundary change associated with annexation of the ROW needed for construction of Tam O' Shanter Drive, in coordination with the San Joaquin Local Agency Formation Commission (LAFCO). The Project also proposed the expansion and completion of the southerly portion of Ronald McNair Way along the Project's frontage.

Off-site Basin: The Project proposes an off-site basin, defined as Lot E, between the Project's boundary, and proposed Tam O' Shanter extension. The basin will contain a metering station that will control the flows from the basin to the existing City of Stockton drainage system. Lot E is currently located within unincorporated San Joaquin County; however, the Project proposes to annex this 0.34-acre area into the City.

Planned Development Design Standards

The Project will mostly be designed in accordance with City of Stockton Residential, Low (RL) Density Zoning District, with the following exceptions as listed below. Deviations from the RL standards necessitate the use of a PD (SMC 16.144) which the Project is seeking.

- Lot Size:
  The minimum lot size proposed is 45' wide by 70' deep. No minimum lot square footage is proposed but will not fall below 3,000 square feet (s.f.). The City's minimum lot square footage is 5,000 s.f. for the RL zoning designation. The Project will seek a deviation from the Stockton Municipal Code (SMC) for lot size minimum requirements.

- Building Setbacks:
  All setbacks, including side and rear, will be in accordance with the SMC Table 2-3.A with the exception of the front setbacks. The Project proposes a 12' setback from the front to the livable area and porch, and a minimum of 15' to the garage face. The Project will seek a deviation from the SMC for front yard setback requirements.

- Private Streets:
  The private streets will be between 35' and 38' wide with a single lane in each direction. Parking will be allowed on one side of the street, with the other side's curb and gutter painted red with "no parking" signage. Private streets may be designed to be super-elevated; this is to be determined during the future site grading design. The Project will seek a deviation from the SMC for street width requirements.

- Lot Coverage:
  The Project proposes a higher lot coverage of 65% which is higher than the RL zoning standard of 50%. This is to allow more flexibility with single-story home designs that include covered patio areas and to allow for greater number of single-story homes to be plotted throughout the Project site. The Project will seek a deviation from the SMC for lot coverage minimum.

1.2 Purpose

The purpose of the Project is to provide housing for current and future City residents.

1.3 Need

The Project is needed to support future growth within the City of Stockton projected within the City's 2040 General Plan.

1.4 Permits and Approvals Needed

The following permits, licenses, agreements, and certifications are required for Project construction:

Table 1. Permits and Approvals Needed

Agency	Permit/Approval	Status
State Water Resources Control Board	Construction General Permit	To be obtained prior to construction
Regional Water Quality Control Board	Clean Water Act Section 402 NPDES General Construction Permit	To be obtained prior to construction
San Joaquin Valley Air Pollution Control District	Authority to Construct Permit	To be obtained prior to construction
San Joaquin Council of Governments	San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan Coverage	To be obtained prior to construction
City of Stockton	Planned Development Permit, Tentative and Final Maps, Design Review, & Heritage Tree Permit, Building Permits	To be obtained prior to construction

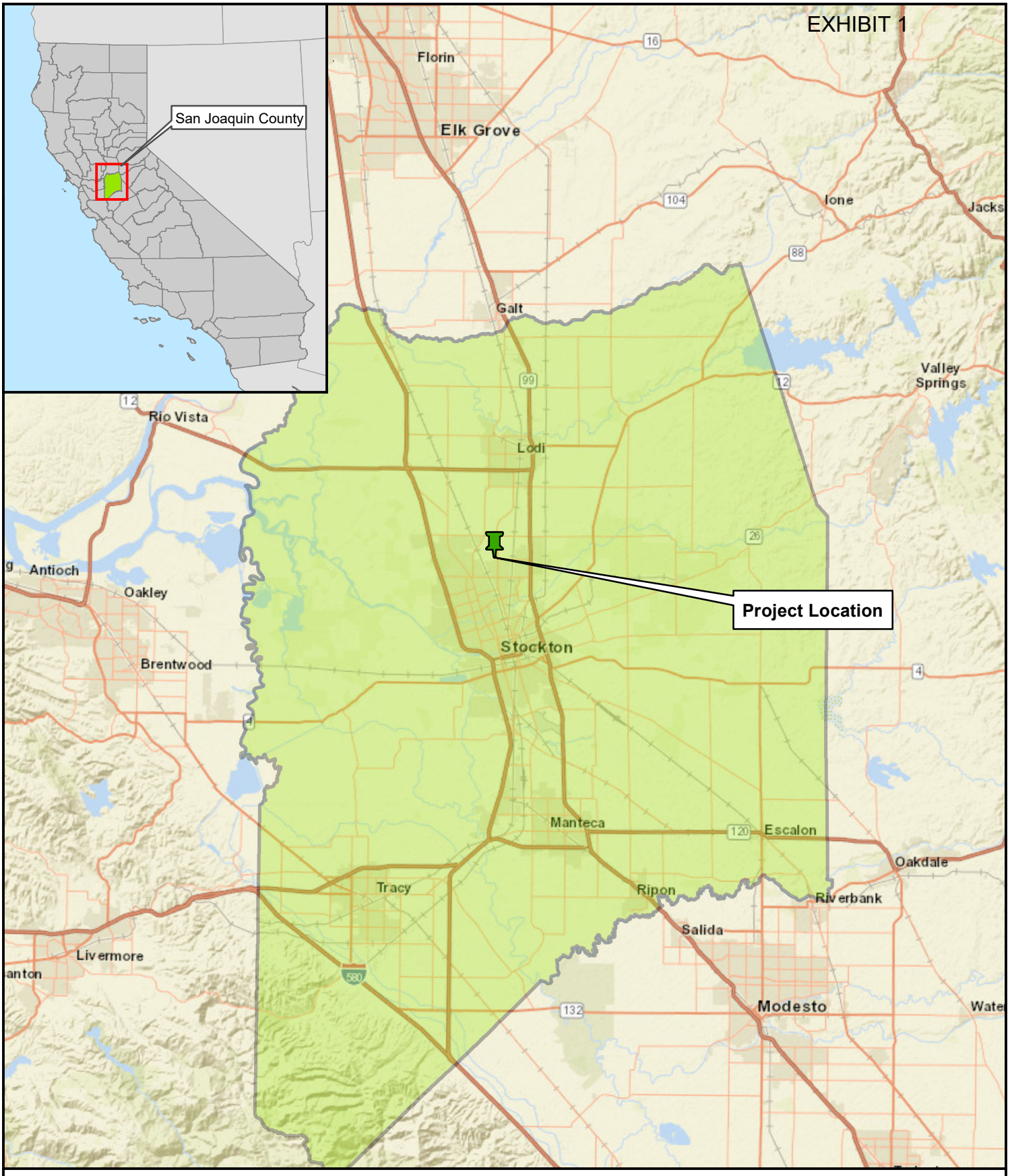


FIGURE 1

PROJECT VICINITY

AGAVE RESIDENTIAL DEVELOPMENT PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

APRIL 2024

0 2.5 5 10

Miles

NORTH

WOOD RODGERS

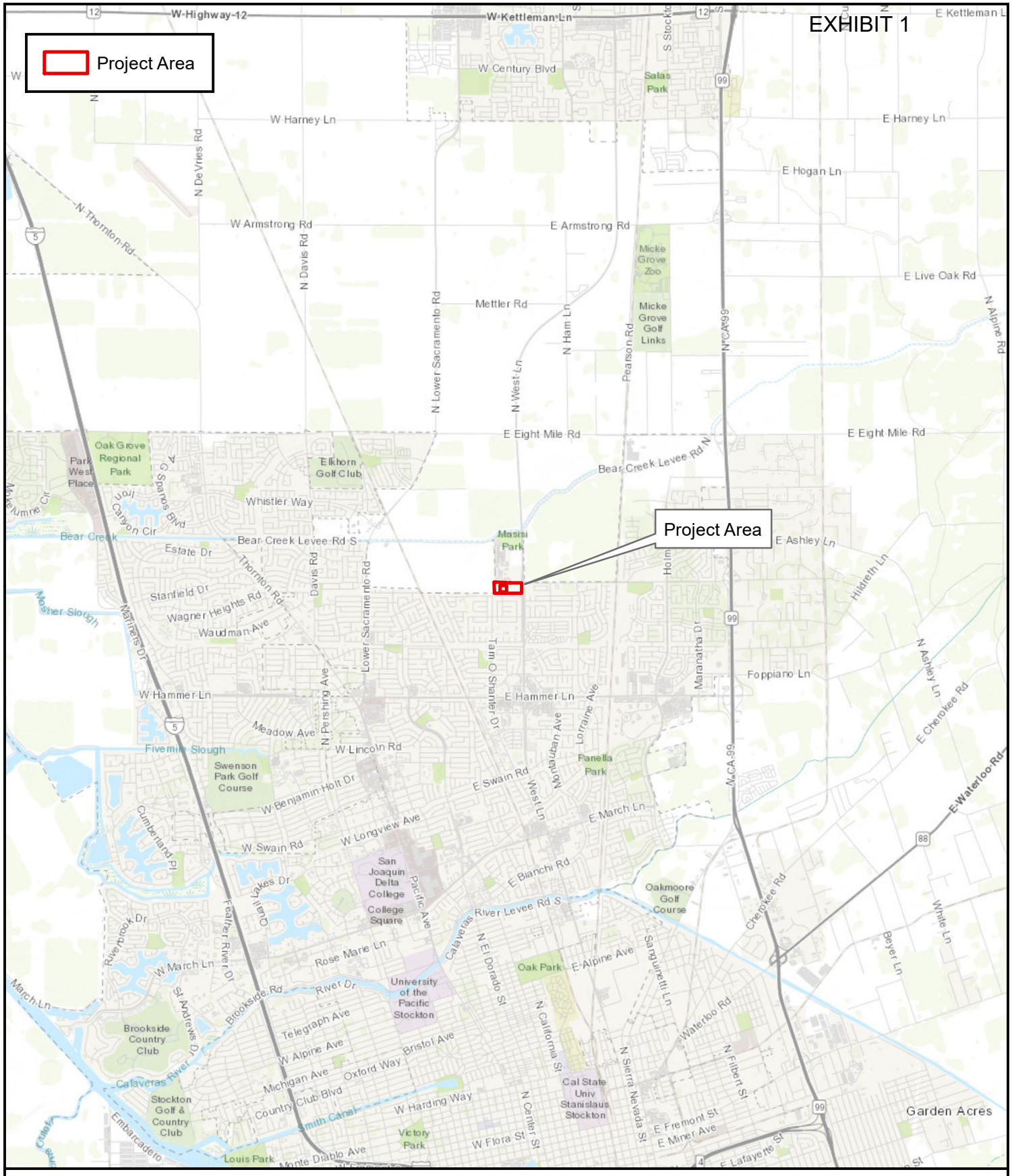


FIGURE 2

PROJECT LOCATION

AGAVE RESIDENTIAL DEVELOPMENT PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA

APRIL 2024

0 0.5 1 2

Miles

NORTH

WOOD RODGERS

EXHIBIT 1

FIGURE 3

PROJECT AREA

AGAVE RESIDENTIAL
DEVELOPMENT PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA
APRIL 2024

Project Area
Parcels

0 62.5 125 250
Feet

NORTH

WOOD RODGERS

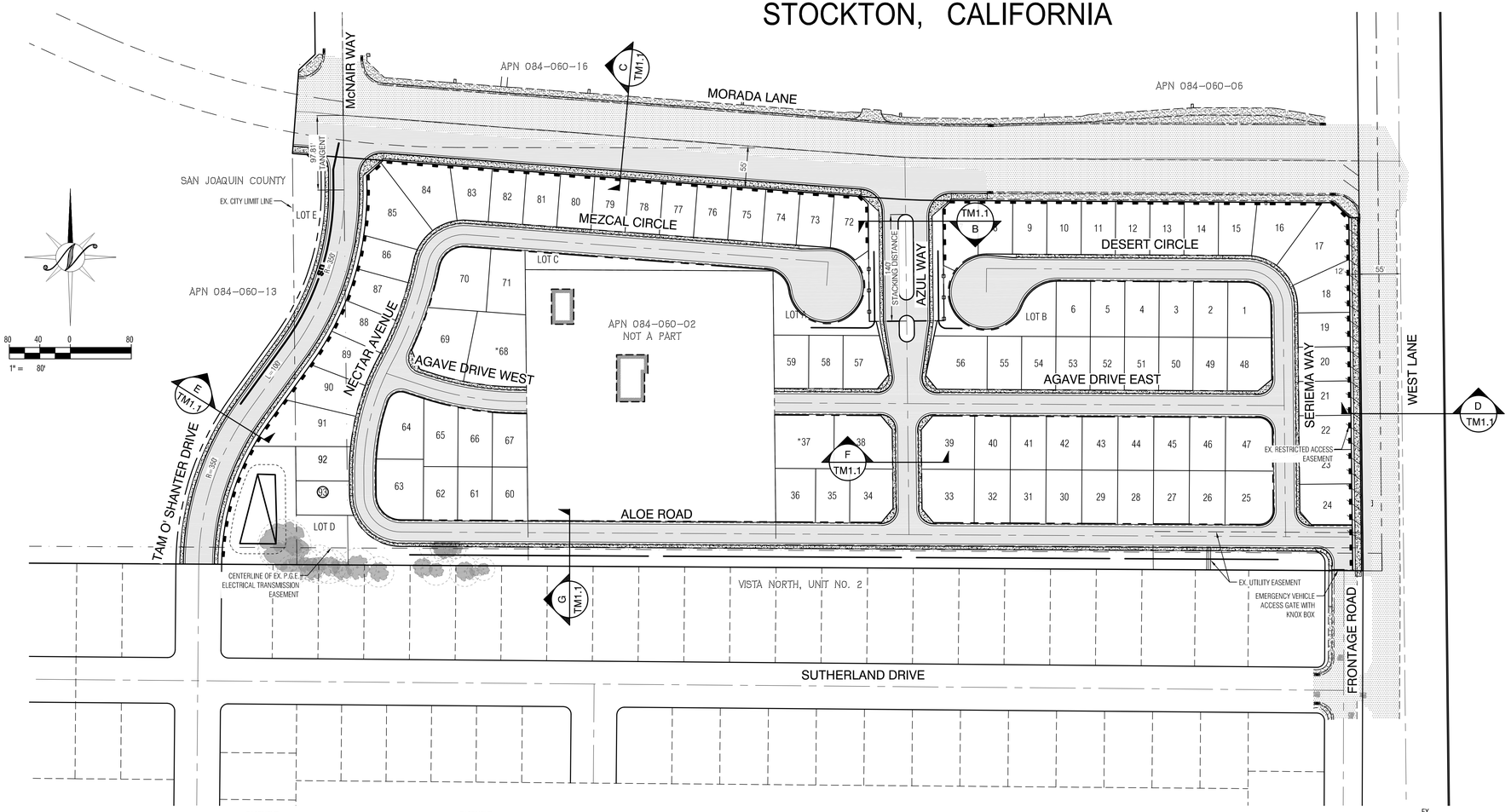
\\woodrodgers.loc\ProductionData\Jobs\4000-s\4405001_Bear_Creek_Ph1\GIS\ArcGISPro\Bear_Creek_Environmental\JN4405001_Bear_Creek_Ph1\JN4405001_Bear_Creek_Ph1.aprx 1/29/2024 1:01 PM espokely

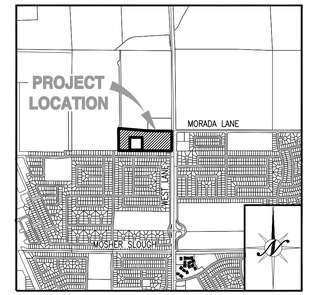
EXHIBIT 1

AGAVE SUBDIVISION

VESTING TENTATIVE SUBDIVISION MAP

STOCKTON, CALIFORNIA





VICINITY MAP

SHEET INDEX

PROJECT INFORMATION

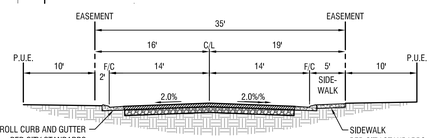
A. REGULATORY AGENCY:	CITY OF STOCKTON 425 N. EL DORADO STREET STOCKTON, CA 95202 T: (209) 937-8444 CONTACT: DODGIE VIDAD
B. APPLICANT:	BRIGHT DEVELOPMENT 1620 N CARPENTER ROAD MODESTO, CA. 95351 T: (209) 526-8242 CONTACT: DAVID BUTZ
C. ENGINEER:	NORTHSTAR ENGINEERING GROUP, INC 620 12th STREET MODESTO CA, 95354 T.: (209) 524-3525 CONTACT: PAMELA HURBAN
D. ASSESSOR'S PARCEL NUMBERS:	084-060-10
E. EXISTING LAND USE:	VACANT LAND
F. PROPOSED LAND USE:	SINGLE FAMILY HOMES
G. EXISTING ZONING/GP:	LOW DENSITY RESIDENTIAL (R-1)/ RESIDENTIAL, LOW DENSITY (RL)
H. PROPOSED ZONING/GP:	R-1/ PD
I. TOTAL PROJECT SIZE:	13.6± ACRES
J. NET ACREAGE:	12.9± ACRES
K. TOTAL NUMBER OF LOTS:	93
L. DENSITY:	6.8 UNITS/ GROSS DU, 7.2 UNITS/ NET DU
M. TYPICAL LOT SIZE:	45' WIDE X 70' DEEP
N. MAXIMUM FOOTPRINT COVERAGE:	60%
O. OPEN SPACE PROVIDED:	2.72 ACRES (INCLUDING FRONT YARDS AND OPEN SPACE LOTS)
P. PARKING:	MINIMUM TWO CAR GARAGE, AND TWO DRIVEWAY SPACES PER LOT
Q. CONTOURS:	1.0-FOOT INTERVALS, SURVEY PREFORMED ON JULY 31, 2019
R. RETURNS:	PER CITY OF STOCKTON STANDARDS
S. UTILITIES:	WATER SYSTEM - CITY OF STOCKTON SANITARY SEWER - CITY OF STOCKTON STORM DRAINAGE - PRIVATE SYSTEM GAS - PG&E ELECTRIC - PG&E TELEPHONE - AT&T SCHOOL DISTRICT - LODI UNIFIED SCHOOL DISTRICT

GENERAL NOTES

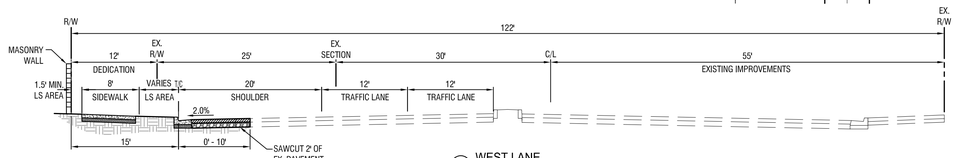
1. ALL IMPROVEMENTS SHALL BE CONSTRUCTED AS PER THE CITY OF STOCKTON STANDARD PLANS AND SPECIFICATIONS EXCEPT AS NOTED.
2. STORM DRAINAGE TO BE CONVEYED TO AN ON-SITE STORM DRAIN BASIN AND STORM DRAINAGE METERING STATION WHICH WILL DISCHARGE TO CITY OF STOCKTON STORM DRAINAGE SYSTEM. ALL IMPROVEMENTS TO BE CONSTRUCTED TO THE CITY OF STOCKTON STANDARDS.
3. ALL STORM DRAINAGE IMPROVEMENTS AS PART OF FUTURE IMPROVEMENTS PLANS AND STUDIES SHALL CONFORM TO THE REQUIREMENTS SET FORTH IN NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT 2013-0001-DWQ AND THE MULTI-AGENCY POST-CONSTRUCTION STORMWATER STANDARDS MANUAL APPROVED OR ADOPTED PRIOR TO THE TIME OF THIS TENTATIVE MAP APPLICATION BEING DEEMED COMPLETE.
4. SANITARY SEWER TO BE CONSTRUCTED TO THE CITY OF STOCKTON STANDARDS AND SPECIFICATIONS.
5. WATER SYSTEM TO BE CONSTRUCTED TO THE CITY OF STOCKTON STANDARDS AND SPECIFICATIONS.
6. STREET LIGHTING SHALL BE INSTALLED PER CITY OF STOCKTON STANDARD SPECIFICATIONS.
7. PUBLIC UTILITIES ARE TO BE INSTALLED UNDER GROUND IN EASEMENTS.
8. THE SUBDIVIDER HEREBY RESERVES THE RIGHT TO FILE "MULTIPLE SUBDIVISION MAPS" AS SET FORTH BY THE SUBDIVISION MAP ACT, ARTICLE 4, SECTION 66456.1., AND FILE PARCEL MAPS FOR REASON OF SALE. ALL PARCEL LINES SHALL CONFORM TO THIS TENTATIVE MAP.
9. PUBLIC UTILITY EASEMENTS WILL BE PROVIDED ALONG ALL STREET IN-TRACT FRONTAGES.
10. ALL EXISTING STRUCTURES AND TREES ARE TO BE REMOVED UNLESS OTHERWISE NOTED. SEPTIC TANKS, LEACH FIELDS, AND WELLS ON SITE WILL BE REMOVED OR ABANDONED AS PER CITY OF STOCKTON REQUIREMENTS.
11. APPLICANT SHALL PROVIDE ACCESS AGREEMENT IN PERPETUITY FOR CITY TO INSPECT ALL POST-CONSTRUCTION BMP'S.
12. ALL LOT SETBACK REQUIREMENTS AND LOT SIZES ARE TO BE IN ACCORDANCE WITH THE BEAR CREEK PLANNED DEVELOPMENT DOCUMENT.
13. ALL PRIVATE STREETS ARE TO BE DEDICATED AS EASEMENTS FOR PUBLIC UTILITIES.
14. LOTS 37 AND 68 WILL CONSTRUCT TEMPORARY TURN AROUNDS FOR EMERGENCY VEHICLE USE. THEY ARE DENOTED WITH AN ASTERISK.

LEGAL DESCRIPTION

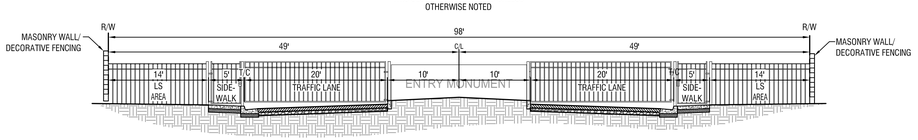
THE LAND DESCRIBED HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SAN JOAQUIN, CITY OF STOCKTON, AND IS DESCRIBED AS FOLLOWS: THE NORTHEAST QUARTER OF SECTION 10, TOWNSHIP 2 NORTH, RANGE 6 EAST, MOUNT DIABLO BASE AND MERIDIAN.



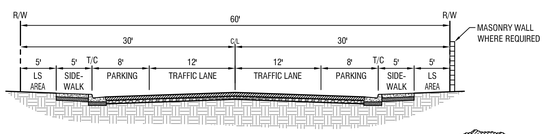
A PRIVATE STREET 35' R/W
TYPICAL RESIDENTIAL STREET
THIS SECTION TO BE UTILIZED UNLESS OTHERWISE NOTED



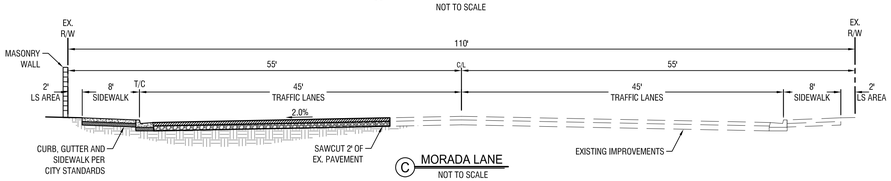
D WEST LANE
NOT TO SCALE



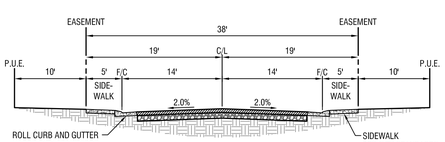
B ENTRY STREET 98' R/W
STREET "A"
NOT TO SCALE



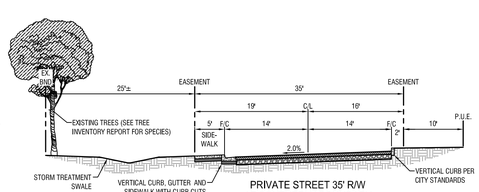
E TAM O' SHANTER 60' R/W
NOT TO SCALE



C MORADA LANE
NOT TO SCALE



F PRIVATE STREET 38' R/W
NOT TO SCALE



G PRIVATE STREET 35' R/W AT SOUTHERLY BOUNDARY
NOT TO SCALE

CALL BEFORE YOU DIG 811 USA 800-227-2600

PRELIMINARY: NOT FOR CONSTRUCTION

REVISIONS NO.	DESCRIPTIONS	DATE	APPROVED

COVER AND CROSS SECTIONS SHEET

VESTING TENTATIVE SUBDIVISION MAP
AGAVE SUBDIVISION
STOCKTON, CALIFORNIA

NorthStar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA. 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	19-2394
DATE:	08/26/2024
SCALE:	1" = 80'
DRAWN:	PMH
DESIGN:	PMH
CHK'D:	TPD

SHEET NUMBER

TM1.1

PLOTTED: 08/26/2024 15:51 PLOTTED BY: Phuthan
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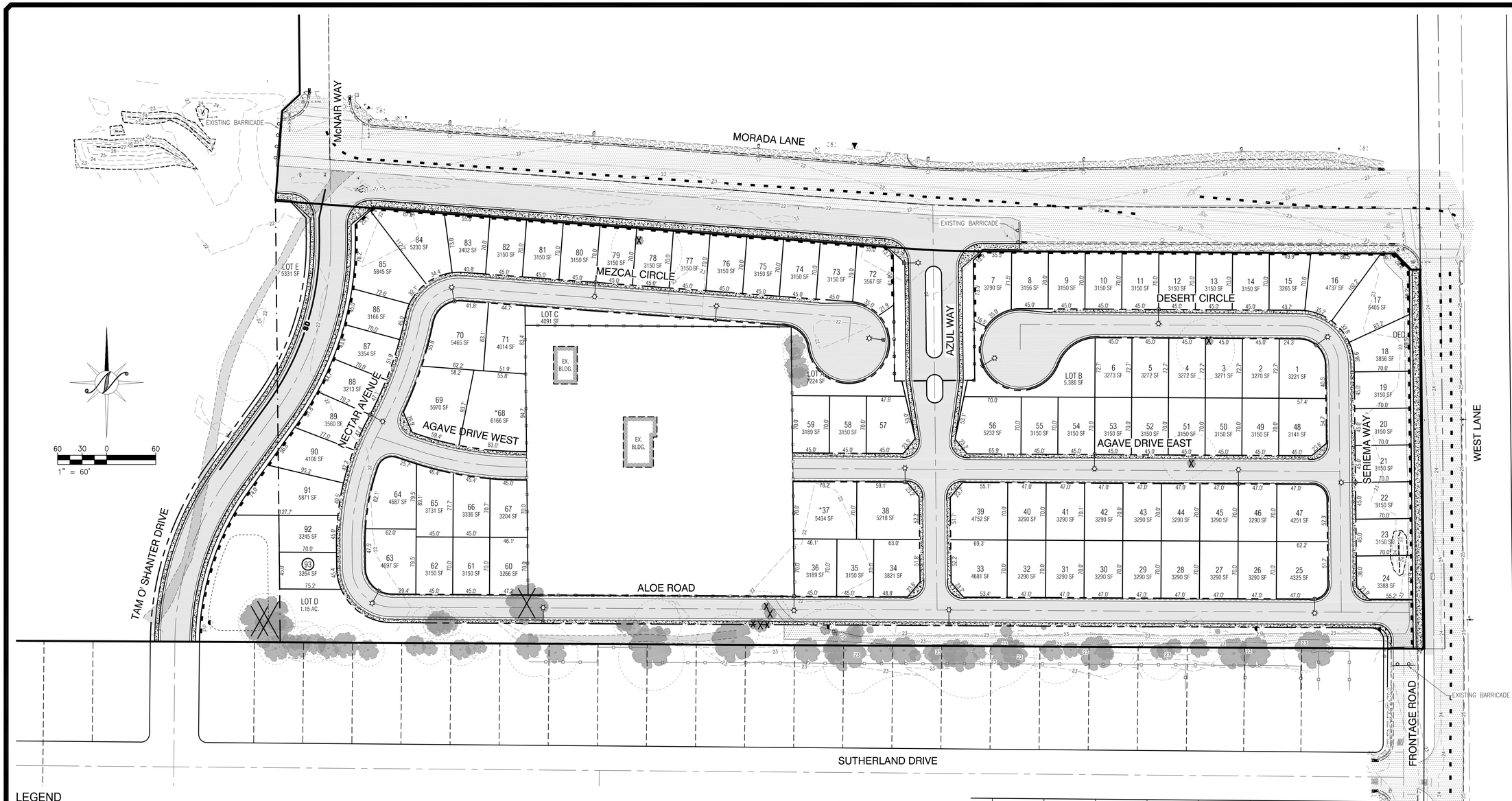
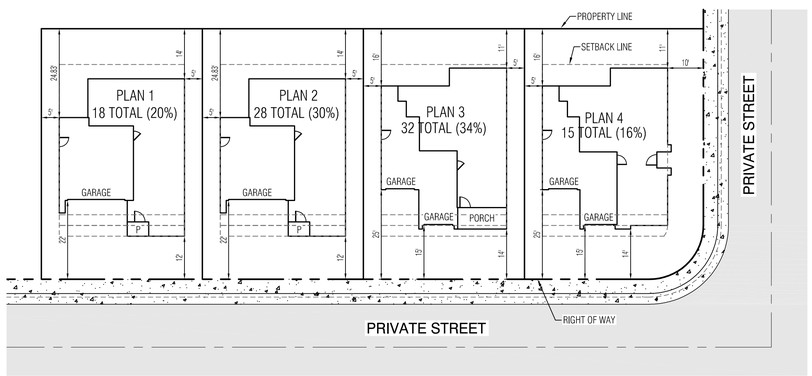
EXHIBIT 1



LEGEND

	EXISTING	PROPOSED
BOUNDARY LINE	N/A	
CENTERLINE		
RIGHT-OF-WAY		
PARCEL LINE		
CURB, GUTTER, AND SIDEWALK		
EDGE OF PAVEMENT		
EXISTING PAVEMENT		N/A
OVER HEAD ELECTRICAL	OHE	N/A
GAS LINE	G	N/A
ORIGINAL GROUND	106.82	N/A
CONTOURS	32	32
WALL (SEE LABEL FOR TYPE)		
FENCE (CHAINLINK OR VINYL)		N/A
FENCE (WIRE OR HOGWIRE)		N/A
FENCE (WROUGHT IRON)		
BARRICADE		N/A
TREE OR SHRUB/TO BE REMOVED		N/A
SIGN	SIGN	
SERVICE POLE	SP	N/A



FOOTPRINTS AND TYPICAL SETBACKS

SCALE: 1" = 20'

PLOTTED: 08/26/2024 1:45 PLOTTED BY: Phuthan
DWGNAME: F:\19-2394 Boar Creek\Planning\Tentative Map\TM 2.1.dwg

CALL BEFORE YOU DIG 811 800-227-2600

PRELIMINARY: NOT FOR CONSTRUCTION

REVISIONS NO.	DESCRIPTIONS	DATE	APPROVED

DIMENSION AND TOPOGRAPHIC PLAN

VESTING TENTATIVE SUBDIVISION MAP
AGAVE SUBDIVISION
STOCKTON, CALIFORNIA

NorthStar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	19-2394
DATE:	08/26/2024
SCALE:	AS SHOWN
DRAWN:	PMH
DESIGN:	PMH
CHK'D:	TPD

SHEET NUMBER

TM2.1

EXHIBIT 1

EX-SDMH(7654)
±20.54RIM
±14.99FL(36")N,S
±12.49FL(12")E
±8.14FL(12")W

EX-SDCB(7653)
±19.85RIM
±15.63FL(12")E

FIRE HYDRANT

EX-SDCB(7652)
±19.74RIM
±13.38FL(12")W

EX-SSMH(6670)
±24.51RIM
LOCKED

McNAIR WAY

MORADA LANE

FIRE HYDRANT

EX-SSMH(6434)
±21.44RIM
±7.75FL(8")N
±6.64FL(8")S

EX-SDMH(6435)
±21.55RIM
±15.97FL(36")NW
±15.53FL(36")SE

EX-SDCB(6180)
±20.48RIM
±14.07FL(12")S

EX-SDMH(6178)
±21.63RIM
±15.65FL(12")S
±12.46FL(12")N
±10.66FL(15")E
±9.83FL(36")S
±9.59FL(36")NW

EX-SDCB(6182)
±22.63RIM
±18.63FL(12")SE

EX-SSMH(7320)
±23.47RIM
LOCKED

EX-SDCB(6183)
±22.78RIM
±17.78FL(12")NE

EX-SDMH(6181)
±23.92RIM
±17.59FL(12")NW,N
±16.82FL(12")SW
±14.41FL(12")S
±11.43FL(15")W

CONNECT TO EX

CONNECT TO EX SD W/ MH

EX-SSMH(6500)
±21.54RIM
LOCKED

EX-SSMH(6433)
±21.46RIM
LOCKED

CONNECT TO EX SS STUB

EX-SDCB(6179)
±20.68RIM
±16.49FL(12")N

LOT E

LOT C

LOT A

LOT B

MEZCAL CIRCLE

DESERT CIRCLE

AZUL WAY

NECTAR AVENUE

AGAVE DRIVE WEST

AGAVE DRIVE EAST

SERIEMA WAY

WEST LANE

TAM O' SHANTER DRIVE

EX. BLDG.

EX. BLDG.

8"W STUB

8"SS STUB

SD DRAIN

SD BUBBLE UP

LOT D

SD NUISANCE PUMP STATION

SD NUISANCE FORCE MAIN AND OUTFALL

CONNECT TO EX. 12" WATER MAIN

ALOE ROAD

EXISTING AIR RELEASE VALVE

EX-SDMH(8269)
±23.39RIM
±17.14FL(30")W,E

EX-SDMH(6214)
±23.65RIM
±17.44FL(30")W,E

CONNECT TO EX

EX-SDCB(7895)
±20.31RIM
±17.65FL(10")S

FIRE HYDRANT

FRONTAGE ROAD

SUTHERLAND DRIVE

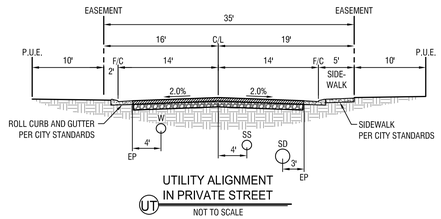
EX-SDMH(7897)
±20.99RIM
±17.19FL(10")N
±17.21FL(10")S
±17.16FL(10")E
±17.06FL(15")W

EX-SDCB(7896)
±20.33RIM
±17.18FL(10")N

60 30 0 60
1" = 60'

LEGEND

	EXISTING	PROPOSED
BOUNDARY LINE	N/A	
CENTERLINE		
RIGHT-OF-WAY		
PARCEL LINE		
FLOW LINE		
EDGE OF PAVEMENT		
PRIVATE STORM DRAIN (MAIN)	SD Ex12"SD	12"SD
PUBLIC STORM DRAIN (MAIN)	SD Ex12"SD	12"SD
STORM DRAIN MAINTENANCE HOLE	SD	SD
CURB INLET		
STORM PUMP STATION	N/A	
STORM OUTFALL STRUCTURE	N/A	
STORM DRAIN OUTLET	N/A	
WATER (MAIN)	W Ex8"W	8"W
WATER VALVE	WV	WV
FIRE HYDRANT	N/A	
SEWER MAINTENANCE HOLE	S	S
SEWER (MAIN)	SS Ex12"SS	12"SS
SERVICE POLE		N/A



UTILITY ALIGNMENT IN PRIVATE STREET
UT
NOT TO SCALE

PLOTTED: 09/06/2024 16:11 PLOTTED BY: Pradhan
DWGNAME: I:\19-2394 Boar Creek\Planning\Tentative Map\TM 2.2.dwg

CALL BEFORE YOU DIG 811 800-227-2600

PRELIMINARY: NOT FOR CONSTRUCTION

NO.	REVISIONS DESCRIPTIONS	DATE	APPROVED

UTILITY PLAN

VESTING TENTATIVE SUBDIVISION MAP FOR
AGAVE SUBDIVISION
STOCKTON, CALIFORNIA

Northstar Engineering Group, Inc.
• CIVIL ENGINEERING • SURVEYING • PLANNING •
620 12th Street Modesto, CA 95354
(209) 524-3525 Phone (209) 524-3526 Fax

JOB #:	19-2394
DATE:	08/26/2024
SCALE:	AS SHOWN
DRAWN:	PMH
DESIGN:	PMH
CHK'D:	TPD

SHEET NUMBER

TM2.2

2.0 CEQA Initial Study Environmental Checklist Form

1. **PROJECT NAME:** Agave Residential Development Project

2. **LEAD AGENCY / PROJECT APPLICANT**

   Lead Agency - City of Stockton
   Applicant – Bright Development

3. **LEAD AGENCY CONTACT PERSON:**

   Nicole Moore, LEED-AP
   Nicole.Moore.CTR@stocktonca.gov
   Community Development Department
   City of Stockton

4. **PROJECT LOCATION:** The Project is located at 9473 West Lane in the City of Stockton, San Joaquin County, California, APN 084-060-10. The parcel located at 9441 West Lane is not included in the Project area, APN 084-060-02.

5. **GENERAL PLAN LAND USE DESIGNATION:** Low Density Residential

6. **ZONING: Residential, Low (RL) Density**

7. **PROJECT DESCRIPTION:** The proposed Project would subdivide the parcel into a gated community containing 93 single-family residential lots, various open space lots and landscape strips, an off-site basin, the extension of Tam O' Shanter Drive, new private streets, and a primary gated entry off Ronald E. McNair Way. Secondary access to the Project would be via a gated emergency vehicle access (EVA) located at the existing West Lane Frontage Road. There is a separate parcel, which includes one (1) single family residence, that is located within the Project area, and access to this property will be provided by the proposed street improvements. However, this privately-owned parcel is not currently part of the Project and is therefore not included in this Initial Study. The proposed Project entitlements consist of a vesting tentative map, design review, Planned Development (PD) Permit, and heritage tree permit.

8. **ENVIRONMENTAL SETTING/SURROUNDING LAND USES:** The Project area encompasses an approximately 13.6-acre vacant parcel located at 9473 West Lane. The Project site is located on the northern limits of the City of Stockton and is surrounded by Ronald E. McNair High School, which is zoned as Public Facilities, and areas to the west zoned as General Agriculture in unincorporated San Joaquin County, and an established single-family residential neighborhood within the City of Stockton located directly to the south of the Project. Land use surrounding the proposed Project is primarily Low Density Residential, Medium Density Residential, and Institutional. There is one residence located in the center of the site; however, this is a separate parcel and is not included in the Project area at this time.

9. **OTHER REQUIRED AGENCY APPROVALS (e.g., permits, financing approval, or participation agreement.):** United States Fish and Wildlife Service, California Department of Fish and Wildlife, Central Valley Regional Water Quality Control Board, San Joaquin Valley Air Pollution

Control District, State Water Resources Control Board, San Joaquin County, City of Stockton, and San Joaquin Local Agency Formation Commission.

10. CALIFORNIA NATIVE AMERICAN TRIBES CONSULTATION:

a. Have California Native American Tribes traditionally and culturally affiliated with the Project area requested consultation pursuant to Public Resources Code Section 21080.3.1?

☒ Yes **☐ No**

b. If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

☒ Yes **☐ No**

11. PREVIOUS ENVIRONMENTAL DOCUMENTATION: None

12. SUMMARY OF ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The summary of environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a "Potentially Significant Impact" or a "Less-Than-Significant Impact with Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ **Aesthetics**	☐ **Greenhouse Gas Emissions**	☐ **Public Services**
☐ **Agriculture & Forestry Resources**	☐ **Hazards/Hazardous Materials**	☐ **Recreation**
☐ **Air Quality**	☐ **Hydrology/Water Quality**	☐ **Transportation**
☒ **Biological Resources**	☐ **Land Use & Planning**	☒ **Tribal Cultural Resources**
☒ **Cultural Resources**	☐ **Mineral Resources**	☐ **Utilities/Service Systems**
☐ **Energy**	☒ **Noise**	☐ **Wildfire**
☒ **Geology/Soils**	☐ **Population & Housing**	☒ **Mandatory Findings of Significance**

13. PREPARATION: This Initial Study for the subject Project was prepared by:

Andrew Dellas, PWS, Senior Biologist / Environmental Planner Date
Wood Rodgers, Inc.

14. DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

Based on the initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR of NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

A copy of the Initial Study documenting reasons to support the Mitigated Negative Declaration is on file at the City of Stockton, Community Development Department, 345 N. El Dorado Street, Stockton, CA 95202.

Nicole Moore, LEED-AP
City of Stockton
Community Development Department

Date

Evaluation of Environmental Impacts

This checklist identifies physical, biological, social, and economic factors that might be affected by the proposed project. Potential impact determinations include Potentially Significant Impact, Less Than Significant with Mitigation, Less Than Significant Impact, and No Impact. In many cases, background investigation performed in connection with a project will indicate that there are no impacts to a particular resource. A No Impact answer reflects this determination. The questions in this checklist are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Less than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from "Earlier Analyses," as described in (5) below, may be cross-referenced).

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where they are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used, or individuals contacted should be cited in the discussion.

8. The explanation of each issue should identify:

   a. The significance criteria or threshold, if any, used to evaluate each question; and
   b. The mitigation measure identified, if any, to reduce the impact to less than significant.

9. Tribal consultation, if requested as provided in Public Resources Code Section 21080.3.1, must begin prior to release of a negative declaration, mitigated negative declaration, or environmental impact report for a project. Information provided through tribal consultation may inform the lead agency's assessment as to whether tribal cultural resources are present, and the significance of any potential impacts to such resources. Prior to beginning consultation, lead agencies may request information from the Native American Heritage Commission regarding its Sacred Lands File, per Public Resources Code sections 5097.9 and 5097.94, as well as the California Historical Resources Information System administered by the California Office of Historic Preservation.

2.1 AESTHETICS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
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?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

DISCUSSION

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

No impact. No designated scenic vistas are located within or near to the Project site. Additionally, the nearest designated river within the Wild and Scenic Rivers System is the Lower American River, approximately 38.8 miles north of the Project area in the City of Sacramento (Wild and Scenic Rivers 2023). Therefore, the Project would not have an adverse effect on scenic vistas and no impact would occur.

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

No impact. The Project is not within a state scenic highway and would not substantially damage scenic resources within a state scenic highway. The nearest officially designated State Scenic Highway is Route 580 within San Joaquin County, located approximately 26.5 miles south of the Project area (Caltrans 2018). Therefore, no impact would occur.

c) Would the project, 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?

Less Than Significant Impact. The Project area is incorporated within the City of Stockton and is located within an urbanized area. Additionally, the Project would not conflict with any applicable zoning or land use designation. The Project, once developed, would be consistent with the urban landscape surrounding the site to the north, east, and south. The site is currently vegetated primarily with non-native grass and weeds, along with several scattered trees; therefore, construction of new residential structures with landscaping along street frontages would generally improve aesthetics of the area. The Project would construct a wall along West Lane and Ronald E. McNair Lane and along the extended Tam O' Shanter Drive, separating the residential development from travelers on the roadway or viewers in the agricultural areas west of the site. Therefore, the Project would have a less than significant impact on visual character and quality in the area.

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

Less Than Significant Impact. The Project would involve the installation of streetlights along the proposed private street alignments, spaced according to City standards. New streetlights would not be concentrated in a particular portion of the Project area and are not anticipated to adversely affect day or nighttime views in the vicinity. Furthermore, street lighting would be constructed consistent with the City Standard Specifications to ensure lights are adequately shielded and lighting is directed down towards the roadway and not into adjacent residences, per Stockton Municipal Code (SMC) 16.32.070. Where necessary, construction lighting would be temporary, intermittent, and would be directed only into the active construction area to avoid potential light pollution to adjacent residences. Therefore, the Project would not cause adverse effects to the day or nighttime views in the area, and Project impacts would be considered less than significant.

FINDINGS

The Project would not impact any designated scenic resource or vista, nor would it adversely affect the current visual environment. The Project would have a **Less Than Significant Impact** relating to aesthetics.

2.2 AGRICULTURE AND FOREST RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 Dept. 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 the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) 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) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The land use within the Project area is designated by the City of Stockton General Plan as Low Density Residential. According to the San Joaquin County Farmland Mapping and Monitoring Program (FMMP) Important Farmland Map (2018) produced by the California Department of Conservation (CDOC), the Project area is designated as Farmland of Local Importance.

Farmland of Local Importance is defined as all farmable land within San Joaquin County not meeting the definitions of Prime Farmland, Farmland of Statewide Importance, and Unique Farmland. This includes land that is or has been used for irrigated pasture, dryland farming, confined livestock or dairy facilities, aquaculture, poultry facilities, and dry grazing. It also includes soils previously designated by soil characteristics as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland that has since become idle (CDOC 2018).

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 non-agricultural use?

No Impact. Soil within the Project area is classified by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) as Farmland of Statewide Importance. However, according to the San Joaquin County FMMP Important Farmland Map (2018), the Project area does not

contain CDOC-designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The Project area is mapped by the FMMP as Farmland of Local Importance; however, the site is zoned for low-density residential use and no active production farmland is present onsite. A review of aerial imagery indicates that the site has not been utilized for active agricultural use for at least 20 years (approximately 2002) Therefore, the Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use and no impact would occur.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. Based on a review of the existing zoning within the Project area and San Joaquin County FMMP Map (CDOC 2018), the Project area is not within existing zoning for agricultural use and is not under Williamson Act contract. Therefore, the proposed Project would not conflict with existing zoning for agricultural use or Williamson Act contract, and no impact would occur.

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))?

No Impact. The Project area is not zoned as 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)). Therefore, the Project would have no conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned as Timberland Production, and no impact would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. There are no designated forest lands or forest resources located within the Project area. Therefore, the Project would not result in the loss of forest land or conversion of forest land to non-forest use, and no impact would occur.

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

No Impact. The Project area is designated as Farmland of Local Importance by the FMMP; however, the Project area is not zoned for agricultural or forest use. Therefore, the Project would not involve changes in the existing environment that would result in the conversion of farmland or forest land to non-agricultural or non-forest use. The Project would have no effects to farmland or forest land resources, and no impact would occur.

FINDINGS

The Project area contains soils designated by the NRCS as Farmland of Statewide Importance; however, the Project would be located entirely within an area designated as Farmland of Local Importance by the CDOC. Agricultural land onsite is fallow with a General Plan designation of Low Density Residential and zoned for residential use; therefore, the Project would not directly or indirectly cause the conversion of farmland, forest land, or timberland. The Project would have **No Impact** to agricultural and forest resources.

2.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

REGULATORY SETTING

Federal Regulations

The Clean Air Act (CAA), as amended in 1990, is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be found in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six (6) criteria pollutants that have been linked to potential health concerns. These criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2).

State Regulations

Responsibility for achieving California's air quality standards, which are more stringent than federal standards, is placed on the California Air Resources Board (CARB) and local air districts, and these standards are to be achieved through district-level air quality management plans that will be incorporated into the State Implementation Plan (SIP). In California, the United States Environmental Protection Agency (EPA) has delegated authority to prepare SIPs to the CARB, which, in turn, has delegated that authority to individual air districts.

The CARB has traditionally established state air quality standards while maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving state implementation plans.

The responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality-related sections of the environmental documents required by CEQA.

Local Regulations

The Project, located within the City of Stockton in San Joaquin County, is situated in the San Joaquin Valley Air Basin and is subject to the San Joaquin Valley Air Pollution Control District (District) requirements and regulations. The District implements the federal and state Clean Air Acts and the applicable attainment

and maintenance plans through local rules and regulations. The District rules and regulations that would be applicable to development projects such as the proposed Project are summarized below:

> *Regulation VIII (Fugitive Dust PM_{10} Prohibitions)*
> Rules 8011-8081, which comprise Regulation VIII are designed to reduce PM_{10} emissions (predominantly dust/dirt) generated by human activity, including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, carryout and track out, landfill operations, etc.
>
> *Rule 4101 (Visible Emissions)*
> This rule prohibits emissions of visible air contaminants to the atmosphere and applies to any source operation that emits or may emit air contaminants.
>
> *Rule 9510 (Indirect Source Review)*
> Rule 9510, also known as the Indirect Source Rule (ISR), is intended to reduce or mitigate construction and operational emission of NO_x and PM_{10} generated by new development. This rule requires specific percentage reductions in estimated on-site construction and operation emissions, and/or payment of off-site mitigation fees for required reductions that cannot be met on the project site. Construction emissions of NO_x and PM_{10} exhaust must be reduced by 20% and 45%, respectively. Operational emission of NO_x and PM_{10} must be reduced by 33.3% and 50%, respectively. The rule applies to development projects of 50 residential units and larger. Based on these criteria, the proposed Project would be subject to Rule 9510.

The District adopted the *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) in 2015 to provide technical guidance for the review of air quality impacts from proposed projects within the boundaries of the District. The GAMAQI was used to analyze the Project in consideration of District and CEQA thresholds of significance.

DISCUSSION

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

Less Than Significant Impact. As described above, the District implements the federal and California Clean Air Acts and the applicable attainment and maintenance plans through local rules and regulations. The Air Quality & Greenhouse Gas Emissions Assessment (ECORP 2023a) prepared for the Project, examined operational and construction outputs for the proposed Project. The report determined the Project would not exceed District CEQA thresholds of significance for operation or construction (see Discussion "b" below for further details). The District has attainment plans for ozone and particulate matter. As Project emissions would not exceed the significance thresholds for these pollutants, the Project would not interfere with the objectives of these attainment plans. Project impacts related to air quality plans would be less than significant.

The Project would be required to comply with District Regulation VIII, which would reduce generation of particulate matter emissions, specifically dust, during Project construction. The Project would also be required to comply with the ISR, which requires reductions in NOx and PM10 construction and operational emissions. Implementation of these rules would further reduce the amount of Project emissions that are already considered less than significant.

Therefore, the Project would not conflict with or obstruct implementation of any regional air quality plan, SIP, or Federal Implementation Plan (FIP).

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?

Less Than Significant Impact. The CARB is required to designate areas of the State of California as attainment, non-attainment, or unclassified for any state standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once within a calendar year. The area air quality attainment status of San Joaquin County is shown below on Table 2.

Table 2. NAAQS and CAAQS Attainment Status for San Joaquin County

Pollutant	Designation/Classification	
	Federal Standards	**State Standards**
Ozone – 8-Hour	Nonattainment – Extreme	Nonattainment
PM_{10}	Maintenance – Serious	Nonattainment
$PM_{2.5}$	Nonattainment – Moderate	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Unclassified/Attainment	Attainment
Lead	Attainment	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified
Sources: CARB 2020; District 2023		

Construction Emissions

Construction activities associated with the Project would result in temporary incremental increases in air pollutants (such as ozone precursors and particulate matter) due to the operation of gas-powered equipment and earth-moving activities. Construction-related emissions attributable to the Project are identified in Table 3 and compared to construction emission thresholds set forth by the District**.**

Table 3. Construction-Related Emissions

Construction Year	Pollutant (tons per year)					
	ROG	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Construction – Calendar Year One	0.17	1.61	1.66	<0.00	0.54	0.29
Construction – Calendar Year Two	0.72	1.24	1.67	<0.00	0.09	0.06
District Significance Threshold	*10 tons/year*	*10 tons/year*	*100 tons/year*	*27 tons/year*	*15 tons/year*	*15 tons/year*
Exceed District Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Source: CalEEMod version 2022.1						

To reduce construction emissions, the GAMAQI recommends that an approved Dust Control Plan (DCP) or Construction Notification form be prepared before issuance of the first grading permit for projects disturbing equal to or greater than 1-acre of surface area. These plans would be prepared in accordance with District Regulation VIII in order to reduce ambient concentrations of fine particulate matter (PM_{10}) and fugitive dust resulting from construction activities. District Regulation VIII describes specific Best

Management Practices (BMPs) for controlling particulate matter, including the use of dust suppressants, and ceasing construction when winds produce visible dust emissions of 20% opacity, as well as specifying all information that must be contained in the Project's DCP. The District sets forth further BMPs to minimize air quality impacts resulting from the construction process. Construction vehicle emissions would be mitigated by utilizing construction-related equipment powered by engines meeting emission standards, as outlined in Section 2423 of Title 13 of the California Code of Regulations and Part 89 of Title 40 of the Code of Federal Regulations (District 2015). Vehicle operation hours would also be limited in accordance with the City's noise ordinance outlined in SMC 16.60.

As a development project of over 50 residential units, the Project would additionally be required to comply with District Rule 9510 in order to minimize emissions of NO_x and PM_{10} resulting from Project construction or operations. Pursuant to this rule, the Project must submit an Air Impact Assessment (AIA) application to the District. The AIA would additionally require an On-Site Emission Reduction Checklist, a Monitoring and Reporting Schedule (MRS), and an Off-Site Fee Deferral Schedule (FDS). According to the rule, the necessary reductions in NOx and PM10 emissions can be achieved with the use of less polluting construction equipment, which may include utilizing add-on controls, cleaner fuels, or newer lower-emitting equipment.

With incorporation of District construction phase BMPs and compliance with Rule 9510, Project impacts related to construction emissions would be considered less than significant in accordance with District Air Quality Guidelines and performance standards.

Operational Emissions

The Air Quality and Greenhouse Gas Emissions Assessment (ECORP 2023a) prepared for the Project determined that Project implementation would result in long-term operational emissions of criteria pollutants, including PM_{10}, $PM_{2.5}$, CO, SO_2, and O_3 precursors such as ROGs and NO_x. When the project is fully constructed and homes are inhabited by residents, emissions would be predominantly associated with private owner-occupied motor vehicle use, as there are no stationary sources associated with the operations of the Project and construction would be completed. Additionally, as a residential development project, the Project would not attract additional heavy-duty truck sources that spend long periods queuing and idling at the site. Long-term operational emissions attributable to the Project are identified in Table 4 and compared to operational significance thresholds set forth by the District.

Table 4. Operational-Related Emissions

Emissions Source	Pollutant (tons per year)					
	ROG	**NO_x**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
	Annual Emissions					
Area	0.81	0.04	0.49	<0.00	<0.00	<0.00
Energy	0.01	0.12	0.05	<0.00	0.01	0.01
Mobile	0.63	0.71	5.16	0.01	1.11	0.29
Total:	**1.45**	**0.87**	**5.70**	**0.01**	**1.12**	**0.30**
District Significance Threshold	*10 tons/year*	*10 tons/year*	*100 tons/year*	*27 tons/year*	*15 tons/year*	*15 tons/year*
Exceed District Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1.

According to the results of the CalEEMod Emissions Model prepared for the Project, operational emissions would not exceed District thresholds for any criteria air pollutants during operations.

As previously mentioned, the Project is subject to District Rule 9510. District Rule 9510 is intended to fulfill the region's emission reduction commitments in the District PM_{10} and Ozone Attainment Plans. The proposed Project would be required to consult with the District regarding the specific applicability of Rule 9510 in relation to Project operations. In accordance with Rule 9510, the Project applicant would be required to prepare a detailed AIA for submittal to the District demonstrating the reduction from the Project's baseline of NOx and PM_{10} emissions. Specifically, the AIA will demonstrate how operational emissions of NOx are reduced by a minimum of 33.3 percent and operational emissions of PM_{10} are reduced by a minimum of 50 percent over a period of ten (10) years. The Project would be required to demonstrate compliance with Rule 9510, including payment of all applicable fees, prior to the issuance of the first building permit through the City of Stockton.

The Project would not exceed District operational emissions thresholds of significance and would comply with emission reduction standards of Rule 9510. Therefore, Project impacts related to operational emissions would be considered less than significant in accordance with District Air Quality Guidelines and performance standards.

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

Less Than Significant Impact. Sensitive receptors are defined by the District as people who have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include schools, parks, playgrounds, day care centers, nursing homes, hospitals, and residential dwelling units. The Project area entirely surrounds an existing residential parcel that contains one (1) single-family residence, and is directly adjacent to Ronald E. McNair High School, as well as an established residential area to the south of the site.

Project construction may generate dust emissions that could reach sensitive receptors. Implementation of District Regulation VIII and the ISR would reduce particulate matter emissions from construction activities, and the Project would not exceed District significance thresholds. With compliance with all applicable District rules and regulations and dust control BMPs outlined above section (a), impacts associated with the generation of dust would be considered less than significant.

Project construction would also generate emissions of diesel particulate matter, which is considered a toxic air contaminant (TAC). As shown in Discussion b) above, PM exhaust emissions, which include diesel particulate matter, are small in total when compared with the District significance thresholds. Health impacts related to TACs such as diesel particulate matter are associated with long-term exposure; however, construction emissions of diesel particulate matter are temporary and would cease once Project construction is completed. Additionally, Project operational emissions of PM exhaust are minimal and well below the District significance thresholds. Overall, impacts of diesel particulate matter emissions would be considered less than significant.

<u>Carbon Monoxide Hot Spots</u>

The proposed Project would cause an increased traffic volume on surrounding roadways. The main pollutant of concern associated with increased traffic and new road intersections is carbon monoxide (CO). The primary cause of CO exceedances is vehicular emissions, particularly when idling at intersections. Therefore, CO concentrations are a direct function of number of vehicles, length of delay, and traffic flow conditions, and hot spots, or areas of high CO concentrations, are associated with intersections operating at unacceptable levels of service (LOS) during peak hours. The District's GAMAQI includes the following CO hot spot criteria:

If neither of the following criteria are met at all intersections affected by the developmental project, the project will result in no potential to create a violation of the CO standard:

- A traffic study for the project indicates that the LOS on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at one or more intersections in the project vicinity.

The Transportation Impact Analysis (TIA; Wood Rodgers 2024) prepared for the Project indicates that the intersection of West Lane and East Morada Lane currently operates at an unacceptable LOS E during A.M. and P.M. peak hour conditions. Additionally, the intersection of the High SchoolParking Lot and Ronald E. McNair Way, and the intersection of the Library Driveway and Ronald E. McNair Way, currently operate at LOS E during A.M. peak hour conditions. Following the completion of Project, the intersection of West Lane and East Morada Lane, and the intersection of the High School Parking Lot and Ronald E. McNair Way are anticipated to continue operating at an LOS E. However, the intersection of the Library Driveway and Ronald E. McNair Way is anticipated to be improved to LOS D during A.M. peak hour conditions due to rerouted traffic at the Tam O'Shanter Drive extension.

Rerouted traffic at the Tam O'Shanter Drive extension would result in an increase in traffic volumes at the intersections of Tam O'Shanter Drive and Sutherland Drive, and Tam O'Shanter Drive and Prospector Drive, which currently experience limited traffic from the surrounding neighborhoods. With the Tam O'Shanter Drive Extension in place, these intersections would experience increased local through traffic primarily consisting of re-routed high school trips with additional residential-based trips that would use the new extension to access West Lane. However, some re-routed trips traveling to and from the high school or West Lane currently already travel south on Tam O'Shanter Drive in order to access West Lane and would not be considered new trips at the intersections. Due to the residential setting and limited existing through traffic, the re-routed trips would not cause the intersections of Tam O'Shanter Drive & Sutherland Drive and Tam O'Shanter Drive & Prospector Drive to exceed capacity (Wood Rodgers 2024). The LOS of these intersections would not be reduced to an unacceptable LOS E or F; therefore, the extension of Tam O'Shanter Drive would not result in a violation of the District CO Standard.

The project would not generate additional traffic in quantities that would worsen the existing LOS of any surrounding intersections and no violation of the District CO standard would occur. Project impacts relating to CO exposure to sensitive receptors would be considered less than significant.

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

Less Than Significant Impact. During construction, the proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the Project area. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people due to odor emissions. Furthermore, according to the District, land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The proposed Project does not include any uses identified by the District as being associated with odors; therefore, Project impacts would be considered less than significant.

BEST MANAGEMENT PRACTICES

Prior to construction, the Project proponent or contractor shall obtain a District approved Authority to Construct and a Permit to Operate, as well as an approved DCP, and shall implement all District construction phase BMPs where applicable. Additionally, the Project would be required to submit a District AIA including all required documentation.

FINDINGS

The Project would not cause operational long-term air quality impacts; however, the Project would cause temporary incremental emissions from construction. With the implementation of District construction BMPs, the Project would comply with all federal, state, and District regulations, and would result in a **Less Than Significant Impact** relating to air quality.

2.4 BIOLOGICAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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 U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☒	☐	☐
b) 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 US Fish and Wildlife Service?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
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?	☐	☒	☐	☐

AFFECTED ENVIRONMENT

This section describes the natural resources present within and immediately surrounding the Project area designated as the Project Biological Study Area (BSA). The Project BSA was defined as the area necessary for all Project activities, plus an additional 100-foot buffer around the Project site. The Project BSA encompasses approximately 23.9 acres.

This section provides the following: 1) discussion on the special-status species and sensitive habitats that have been identified or are potentially occurring in the Project BSA; 2) an analysis of the impacts that could occur to biological resources due to implementation of the Project; and 3) appropriate avoidance and minimization measures to reduce or avoid significant impacts. The analysis of biological resources presented in this section is based on a review of the current Project description, literature research, and a biological reconnaissance survey conducted by a Wood Rodgers qualified biologist.

The Project occurs in the City of Stockton in San Joquin County, in the California Dry Steppe Province ecological subregion, Great Valley Section, and ecological subsection 262Aj (Delta Basins) of California (USDA 2007). The region receives an average of 17.77 inches of precipitation annually in the form of rain. The average annual high temperature is 76 degrees Fahrenheit (°F), and the average annual low temperature is 48 °F (U.S. Climate Data 2023).

San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan (SJMSCP)

The Project is located within the Central Zone of the San Joaquin County Multi-Species Habitat Conservation Plan and Open Space Plan (SJMSCP; SJCOG 2000). The Plan Area of the SJMSCP encompasses the entirety of San Joaquin County. The Project is a "Permitted Activity" under the SJMSCP categorized as *Urban Development*. As a Permitted Activity, the SJMSCP may be used by the project proponent to provide compensation to offset the land cover impacts resulting from the conversion of open

space, including providing incidental take coverage for SJMSCP "Covered Species". The City of Stockton is a SJMSCP Plan Permittee and will monitor Project compliance through the SJMSCP Compliance Monitoring Program. The Project area does not contain modeled habitat for Covered Species; therefore, no incidental take coverage for Covered Species is anticipated.

The SJMSCP Plan Area is classified into categories and subsequent Pay Zones to determine potential habitat conservation fees associated with different habitat types, including agricultural lands, multi-purpose open space land, and vernal pool habitat. Category A/No-Pay Zone includes parcels where conversions of open space have already occurred, and no development fee would be required for SJMSCP Permitted Activities. However, the SJMSCP Habitat Map designates the Project site as Agricultural Habitat Land. Therefore, the Project area would be classified under Category C/Pay Zone B, requiring the payment of a $1,500 per acre fee for the conversion of Agricultural Habitat Land associated with SJMSCP Permitted Activities.

Physical Conditions

Topography
The BSA is located within the United States Geological Survey (USGS) *Lodi South* 7.5-Minute Quadrangle. The Project area occurs within a single distinct topographic region of the San Joaquin Valley floor, and the natural elevation within the Project area is approximately 8 feet above mean sea level.

Soils
The Natural Resource Conservation Service (NRCS) Web Soil Survey (WSS) for the Project (NRCS 2023) identifies soils within the BSA as:

- Jacktone clay, 0 to 2 percent slopes

Hydrological Resources
The BSA does not include any hydrological resources. The nearest hydrological resource is Bear Creek, located approximately 0.5 miles north of the Project area. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), the entire Project site falls within FEMA Zone X, designated as an Area with Reduced Flood Risk due to Levee (see Appendix A).

Vegetation Communities

The BSA is located within a previously disturbed agricultural area and is therefore dominated by vegetation communities established through human action. According to the SJMSCP, the primary land use designation within the BSA is Agricultural Habitat Land, with limited Urban Land in surrounding residential areas and roadways (see Figure 7).

Agricultural Habitat Lands
SJMSCP Agricultural Habitat Lands include perennial and annual croplands and some ruderal vegetation types. Agricultural Habitat Lands are found primarily on the County's valley floor and in the Delta. Although agricultural, rangelands are primarily classified as Natural Lands since they are primarily grasslands or vernal pool grasslands. Orchards and vineyards are classified as Multi-Purpose Open Space Land. Within the BSA, Agricultural Lands are present within the fallow agricultural parcel on which the Project is located, as well the CDOC-designated Farmland of Statewide Importance bordering the Project area to the west.

FIGURE 7 EXHIBIT 1

VEGETATION COMMUNITIES

AGAVE RESIDENTIAL
DEVELOPMENT PROJECT

SAN JOAQUIN COUNTY, CALIFORNIA
APRIL 2024

Project Area
Biological Study Area

Vegetation Communities

Agricultural
Urban

0 62.5 125 250
Feet

NORTH

WOOD RODGERS

Urban Lands
Urban Lands are those lands which are already converted from open space use to urban uses. This land type includes the vegetation subcategories of Urban/Industrial/Built and Scraped/Paved, both of which have low habitat value according to the SJMSCP.

Within the BSA, Urban Lands consist of Urban/Industrial/Built areas, such as Ronald E. McNair High School and surrounding properties north of the Project area, residential areas south of Project area, the residential parcel surrounded by the Project area and the roadways of West Lane and Ronald E. McNair Way.

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 Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?

Less Than Significant with Mitigation. Prior to field work, literature research was conducted through the United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) official species list generator, the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB), and the California Native Plant Society (CNPS) Electronic Inventory of Rare and Endangered Plants. The BSA does not contain any hydrological resources or potential fish habitat; therefore, research through the National Marine Fisheries Service (NMFS) was not conducted. Literature and database searches (see Appendix B) were completed to identify habitats and special-status species that have the potential to occur in the Project vicinity.

Field investigations for the proposed Project included wildlife and botanical surveys conducted on January 26, 2024 by Wood Rodgers, Inc. biologists. Biological reconnaissance surveys consisted of walking meandering transects throughout the BSA, identifying vegetation communities, and assessing habitat conditions for listed and covered species requirements.

The potential for each special status species to occur within the BSA was determined by analyzing the habitat requirements for each species, comparing them to available habitat within the BSA, and analyzing the regional occurrences of the species (see Appendix C, Species Potential Determinations). Based on these analyses, it was determined that Swainson's hawk (*Buteo swainsoni*) would have a moderate to high potential to occur within the BSA and burrowing owl (*Athene cunicularia*) would have a low potential to occur within the BSA. No special status plant species were determined to have the potential to occur within the BSA.

The following is a discussion of these special status species, potential Project effects, and any avoidance, minimization and/or mitigation measures required to reduce Project impacts to a less than significant level.

Discussion of Special Status Wildlife Species

Swainson's Hawk
Swainson's hawk is state listed as threatened. Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, the western U.S., and Mexico. In California, Swainson's hawks nest throughout the Sacramento Valley in large trees in riparian habitats and in isolated trees in or adjacent to agricultural fields. The breeding season extends from late March through late August, with peak activity from late May through July (England et al. 1997). In the Sacramento Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (CDFW 1994). The

breeding population in California has declined by an estimated 91% since 1900; this decline is attributed to the loss of riparian nesting habitats and the conversion of native grassland and woodland habitats to agriculture and urban development (CDFW 1994).

Burrowing Owl

Burrowing owl is not a federally or state listed species, but it is a CDFW Species of Special Concern (SSC). Burrowing owls are capable of inhabiting landscapes that are highly altered by human activity. The species can be found in abandoned agricultural lands, deserts, grasslands, and disturbed open habitats. In agricultural settings, burrowing owls are known to nest along roadsides and ditches surrounded by crops or sparse vegetation. Nests are most commonly in old small mammal holes, such as those dug by ground squirrels, but owls are also known to nest in anthropogenic structures like culverts, pipes, or piles of rubble. Burrowing owl populations are threatened by habitat loss and degradation due to the urbanization of farmland and open spaces in the Central Valley. Extermination of ground squirrels, pesticides, disease, and traffic mortalities are additional threats to the species (Shuford et al. 2008)

Special Status Species Survey Results

Swainson's Hawk Survey Results

No Swainson's hawk individuals were observed within the BSA during biological surveys conducted January 26, 2024. However, two (2) potential nests were identified within a large heritage oak tree onsite and an oak tree in the agricultural field west of the site, approximately 600 feet from the Project area. The BSA additionally contains potential foraging habitat and prey for Swainson's hawk, as ground squirrel populations are present onsite. The nearest recent (2009) CNDDB occurrence of the species is located approximately 1.5 miles west of the Project area, and the nearest recent (2017) ebird.org occurrence is located approximately 0.6 miles east of the Project area. Swainson's hawk is considered to have a moderate to high potential to occur within the BSA due to the presence of potentially suitable nesting and foraging habitat within the BSA and the close proximity of recent regional occurrences.

Burrowing Owl Survey Results

No burrowing owl individuals or burrows were observed within the BSA during biological surveys; however, active ground squirrel burrows were found in several locations throughout the BSA. Burrowing owls are not likely to inhabit active ground squirrel burrows but may take over vacated burrows. Additionally, the presence of ground squirrels constitutes potential prey base for the species. The nearest recent (2006) CNDDB occurrence of the species is located approximately 7.6 miles south of the Project area, yet there are numerous recent ebird.org occurrences of the species approximately one (1) mile from the Project area. The SJMSCP indicates that most burrowing owl habitat is located in the Southwest Zone of the Plan Area; however, due to the presence of known burrowing owl habitat characteristics and the close proximity of recent occurrences, the species is considered to have a low potential to occur within the BSA.

Project Impacts to Special Status Wildlife Species

Project Effects to Swainson's Hawk

The Project would require the removal of several large oak trees onsite; however, no sensitive natural vegetation communities were determined to be present within the Project area. Additionally, Swainson's hawk is known to be sensitive to construction noise and the presence of the human form near nesting sites. The Project will incorporate mitigation measures BIO-1 and BIO-2, which include a pre-construction nesting survey for Swainson's hawk and other migratory birds and raptors and the implementation of all applicable SJMSCP Incidental Take Minimization Measures (ITMMs). With the inclusion of these measures, the Project is not anticipated to have direct or indirect effects to nesting sites, and no take would occur. With the absence of take of Swainson's hawk, no Incidental Take Permit (ITP) for Project effects to the species is anticipated.

Project Effects to Burrowing Owl

The Project would result in full development of the agricultural land cover within the Project area, which may contain potential burrowing owl nesting and foraging habitat. However, with the incorporation of mitigation measure BIO-2, which would limit the impacts of development on burrowing owl through the implementation of SJMSCP ITMMs, the Project is not anticipated to have direct or indirect effects to burrowing owl individuals or burrows, and no take would occur. With the absence of take of burrowing owl, no ITP for Project effects to the species is anticipated.

Project Effects to Migratory Birds

Native birds, protected under the Migratory Bird Treaty Act (MBTA) and similar provisions under California Fish and Game Code (FGC) have the potential to nest within the Project area. To avoid and minimize potential impacts to migratory birds, mitigation measure BIO-1 and construction BMPs would be implemented and incorporated into the Project. Therefore, no take is anticipated of migratory birds or raptors protected under the MBTA and FGC Code.

With the incorporation of species-specific mitigation measures, any potentially significant impacts to special status species would be reduced to a less than significant level. Therefore, the Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status. Project impacts would be considered less than significant with mitigation incorporated.

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 Wildlife or U.S. Fish and Wildlife Service?

No Impact. No sensitive natural communities were identified within the BSA, and all Project construction and operations would occur within a previously disturbed area. No impact would occur to any riparian areas or other sensitive habitats in the vicinity.

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?

No Impact. There are no state or federally protected wetlands within the Project impact area. The Project would have no substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. No impact would occur.

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?

No Impact. The Project site consists primarily of agricultural land cover and does not contain modeled habitat for any native wildlife species. Additionally, according to CDFW's Biogeographic Information and Observation System (BIOS), the Project area lies within a "Terrestrial Connectivity, Area of Conservation Emphasis (ACE) level 1 hexagon supporting "Limited Connectivity Opportunity" (CDFW 2023). The Project does not include any permanent impoundments or barriers to native wildlife migration within the Project area. Therefore, the Project would not interfere substantially with the movement of any native resident, migratory fish, or wildlife species, and no impact would occur.

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

Less Than Significant Impact. The Envision Stockton 2040 General Plan (2018) defers primary authority for the protection of biological resources to the San Joaquin Council of Governments (SJCOG) and the SJMSCP. The SJMSCP contains policies to preserve the diverse sensitive natural communities throughout the County, including oak woodlands and riparian corridors. However, the BSA primarily consists of vegetation previously disturbed by human activity and does not contain any sensitive habitats protected by the SJMSCP.

Several large trees are present throughout the Project area and would require removal during construction. A Tree Inventory conducted on March 22, 2022, identified 48 heritage trees located onsite, which are defined by the SMC (Division 8, Glossary) as any valley oak (*Quercus lobata*), coast live oak (*Quercus agrifolia*), or interior live oak (*Quercus wislizenii*) with a trunk diameter of 16 inches or more. Pursuant to SMC Chapter 16.130, the City requires that a permit be filed with the Community Development Department for the removal of one (1) or more heritage trees, also requiring the replacement of the trees on a three (3) to one (1) basis, with a minimum of 15-gallon container stock, at the discretion of the Stockton Community Development Director. With compliance with the heritage tree regulations and permitting requirements set forth in the SMC, Project impacts would be less than significant.

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?

Less Than Significant with Mitigation. The Project is located within the SJMSCP's Central Zone, which includes all of the County's seven (7) incorporated cities. According to the SJMSCP, the majority of existing urban development and proposed new development in the County exists or will exist within this zone. The Project would be considered a SJMSCP Permitted Activity under the category of Urban Development, and the Project area is located within the City of Stockton's boundaries for planned urban development, as documented in the SJMSCP Planned Land Use Map.

Although no production agricultural land is present, the Project site is designated by the SJMSCP as Agricultural Habitat Land classified under Category C/Pay Zone B. Therefore, the Project proponent will be required to pay a $1,500 per acre fee for the conversion of agricultural land associated with SJMSCP Permitted Activities. The Project will implement mitigation measure BIO-2 to ensure that the appropriate ITMMs are properly implemented and monitored and that the appropriate fees are paid in compliance with the SJMSCP. With the inclusion of this measure, the Project would be consistent with the SJMSCP and would have a less than significant impact with mitigation incorporated.

MITIGATION MEASURES

BIO-1 Vegetation removal or earthwork shall be minimized during the nesting season (February 1 – August 31). If vegetation removal and/or ground disturbance is required during the nesting season, a pre-construction nesting bird and raptor survey (to encompass all migratory birds and raptors, including the Swainson's hawk) must be conducted within three (3) days prior to commencement of construction activities.…….

The pre-construction nesting bird and raptor survey shall extend up to 500-feet from the Project site to ensure that nesting raptors are not indirectly affected by construction noise, and 1,320 feet for Swainson's hawks. If no active nests are detected during the survey, no additional mitigation is required, and construction can proceed.

If migratory birds or raptors are found to be nesting in or adjacent to the Project site, a 250-foot no-disturbance buffer shall be established around raptor nests (500-foot for Swainson's hawk) and a 50-foot buffer around non-raptor nests to avoid disturbance and/or avoid take. Contractor shall direct construction resources to perform other construction activities in other areas of the Project at no additional cost. The buffer shall be maintained around the nest until the end of the breeding season or until a qualified biologist determines that the young have fledged and are foraging on their own. The extent of these buffers shall be determined by the biologist and shall depend on the species identified, level of noise or construction disturbance, line of sight between nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers.

BIO-2 The Project proponent shall apply to the San Joaquin Council of Governments (SJCOG) for coverage under the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP). The Project site will be inspected by the SJMSCP biologist, who will recommend any Incidental Take Minimization Measures (ITMMs) set forth in the SJMSCP that should be implemented. The Project proponent shall be responsible for the implementation of any specified ITMMs and the payment of all applicable SJMSCP habitat conservation fees prior to the issuance of the first building permit.

FINDINGS

Considering the information obtained for literature search, biological surveys, and analysis of potential impacts from Project design, and in conjunction with the implementation of construction BMPs, Project effects relating to biological impacts would be considered **Less Than Significant with Mitigation**.

2.5 CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

REGULATORY SETTING

Federal Regulations

National Historic Preservation Act
Section 106 of the National Historic Preservation Act (NHPA) requires federal undertakings to consider the effects of the action on historic properties. Historic properties are defined by the Advisory Council on Historic Preservation (ACHP) regulations (36 Code of Federal Regulations [CFR] Part 800) and consist of any prehistoric or historical archaeological site, building, structure, historic district, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP) maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to Native American tribes or Native Hawaiian organizations that meet the National Register criteria (36 CFR Part 800.16[l]).

To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, historical, and architectural properties) must be inventoried and evaluated for listing in the NRHP. For a property to be considered for inclusion in the NRHP, it must be at least 50 years old and meet the criteria for evaluation set forth in 36 CFR Part 60.4.

The quality of significance in American history, architecture, archaeology, engineering, and culture must be present in districts, sites, buildings, structures, and objects that possess integrity of design, setting, materials, workmanship, feeling, and association. For inclusion on the NRHP, these properties must also meet one or more of the four criteria listed here:

1. Criterion A – They are associated with events that have made a significant contribution to the broad patterns of our history;
2. Criterion B – They are associated with the lives of persons significant in our past;
3. Criterion C – They embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
4. Criterion D – They have yielded or may be likely to yield, information important in prehistory or history.

If a cultural resources professional meeting the Secretary of Interior's Qualification Standards determines that a particular resource meets one of these criteria, it is considered as an eligible historic property for listing in the NRHP. Among other criteria considerations, a property that has achieved significance within

the last 50 years is not considered eligible for inclusion in the NRHP unless certain exceptional conditions are met.

Resources listed on the NRHP, or that are eligible to be listed on the NRHP are automatically considered historical resources for the purposes of CEQA.

Native American Graves Protection and Repatriation Act of 1990 (PL 101-601; 25 U.S.C. 3001)
Under the Native American Graves Protection and Repatriation Act (NAGPRA) (25 U.S.C. 3001) and implementing regulations 43 CFR Part 10, federal agencies are responsible for the protection of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are discovered on lands under the agency's jurisdiction. All human remains and potential human remains must be treated with respect and dignity at all times.

State Regulations

California Register of Historical Resources: Public Resources Code (PRC) Section 5024
The term "historical resource" includes, but is not limited to, 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 PRC (PRC Section 5020.1[j]).

Historical resources may be designated as such through three different processes:

1. Official designation or recognition by a local government pursuant to local ordinance or resolution (PRC Section 5020.1[k]);
2. A local survey conducted pursuant to PRC Section 5024.1(g); or
3. The property is listed in or eligible for listing in the NRHP (PRC Section 5024.1[d][1]).

The process for identifying historical resources is typically accomplished by applying the criteria for listing in the California Register of Historical Resources (CRHR), which states that a historical resource must be significant at the local, state, or national level under one or more of the four criteria listed below. It is associated with events that have made a significant contribution to the broad patterns of:

1. It is associated with California's history and cultural heritage;
2. It is associated with the lives of persons important in our past;
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master, or possesses high artistic values; or
4. It has yielded, or may be likely to yield, information important in prehistory or history. (CCR 14 Section 4852).

To be considered a historical resource for the purpose of CEQA, the resource must also have integrity, which is the authenticity of a resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Resources, therefore, must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. It must also be judged with reference to the particular criteria under which a resource is eligible for listing in the CRHR (CCR 14 Section 4852[c]).

Unique Archeological Resources
The PRC also requires the Lead Agency to determine whether or not a project would have a significant effect on unique archaeological resources (PRC Section 21083.2[a]).

The PRC defines a unique archaeological resource as follows.

- 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:
    - Contains information needed to answer important scientific research questions and that 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; or
    - Is directly associated with a scientifically-recognized important prehistoric or historic event or person (PRC Section 21083.2).

In most situations, resources that meet the definition of a unique archaeological resource also meet the definition of a historical resource. As a result, it is current professional practice to evaluate cultural resources for significance based on their eligibility for listing in the CRHR.

Assembly Bill 52 (Gatto) and Consultation
The lead agency for CEQA is responsible for consultation with Native American tribes regarding the potential for a project to impact TCRs, pursuant to Assembly Bill 52 and PRC §§ 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, 21084.3, and 5097.94(m). Consultation efforts with California Native American tribes are described in Section **2.18 Tribl Cultural Resources**.

Local Regulations

San Joaquin County
The Natural and Cultural Resources Element of the San Joaquin County 2035 General Plan (2016) outlines goals and policies intended to protect the County's valuable architectural, historical, archaeological, and cultural resources. Through the implementation of these measures, the County will ensure that no cultural or historical resources are knowingly destroyed, new resources are documented and registered, and existing resources are preserved. Additionally, the Natural and Cultural Resources Element contains provisions for the inclusion and consultation of Native American tribes during the planning process for development projects.

City of Stockton
The Land Use Element of the City of Stockton 2040 General Plan (2018) includes Policy LU-5.2 to protect natural resource areas, fish and wildlife habitat, open space areas, agricultural lands, parks, and other cultural or historical resources from encroachment or destruction by incompatible development. Under this policy, the City mandates the retention of a qualified archaeologist or paleontologist to perform record searches, surveys, and treatment plans where necessary to preserve paleontological and archaeological resources. In addition, the Stockton Municipal Code Chapter 16.220 Cultural Resources further outlines the importance of preserving sites and structures of architectural, cultural, and/or historical significance. Lastly, the City requires consultation with Native American tribal representatives to identify culturally significant locations in relation to proposed development.

METHODOLOGY

A review of cultural resources and technical memorandum was completed for the Project by ECORP Consulting, Inc. (ECORP 2023b). The review included a cultural resources records search, literature review, and field survey for the proposed Project. Official record searches for archaeological sites and surveys within the Project area were requested through the Central California Information Center (CCIC) of the California Historical Resources Information System at California State University, Stanislaus on October 31, 2023. Additionally, the California Native American Heritage Commission (NAHC) was contacted on November 4, 2023 to determine the presence of Sacred Lands within the Project Area. Furthermore, an intensive pedestrian survey of the site was conducted on November 9, 2023 to assess the ground surface for indications of surface or subsurface cultural resources or deposits.

DISCUSSION

a) Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

No Impact. The Project site is located on a vacant parcel. According to the cultural resources analysis conducted for the Project, the record search and field survey did not yield any historical resources outlined by the California Register of Historical Resources, or the Stockton General Plan within the Project area. Record searches indicated that the parcel surrounded by the Project area contains a historic-era ranch complex dating to approximately 1949. However, no construction would occur within this property and the historic-era ranch complex would not be affected. Therefore, the Project would not cause a substantial adverse change in the significance of a known or listed historic resource as defined in §15064.5, and no impact would occur.

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

Less Than Significant with Mitigation. The Project area has been heavily disturbed by prior agricultural activity. No evidence of archaeological resources was observed during field surveys of the Project area, and Project improvements are not expected to require deep excavation that would increase the potential for an unexpected sub-surface discovery. Based on the soil makeup, underlying geological composition, and the Project area's proximity to water, the likelihood of any undiscovered pre-contact cultural resources buried within the Project area is considered low to moderate (ECORP 2023b). However, there always remains the potential for ground disturbing activity to expose previously unrecorded cultural resources. With the inclusion of mitigation measure **CR-1 and CR-2,** any potential impacts resulting from an unexpected discovery of subsurface archaeological material would be reduced to a less than significant level. Should such a scenario occur during Project implementation, all work would cease within 100 feet of the find and a qualified archaeologist would determine the appropriate next steps to identify the found materials. Therefore, Project impacts are considered less than significant with mitigation.

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

Less Than Significant Impact. There is no evidence of the presence of human remains in the Project area. However, this does not preclude the possibility of the existence of buried human remains. California law recognizes the need to protect historic-era and Native American human burials, skeletal remains, and items associated with Native American interments from vandalism and inadvertent destruction.

Damage to or destruction of human remains during Project construction or other Project-related activities would be considered a significant impact. However, in accordance with the California Health and Safety

Code Sections 7050.5 and 7052, Public Resources Code Section 5097.98, and CEQA Section 15064.5, if human remains are uncovered during ground-disturbing activities, all such activities in the vicinity of the find would be halted immediately, and San Joaquin County's designated representative would be notified. The County's representative would immediately notify the San Joaquin County Coroner and a qualified professional archaeologist. The County Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (Health and Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]).

The County's responsibilities for acting upon notification of a discovery of Native American Human remains are identified in detail in the California Public Resources Code Section 5097.9. The County or its appointed representative and the professional archaeologist would contact the Most Likely Descendent (MLD), as determined by the NAHC, regarding the remains. The MLD, in cooperation with San Joaquin County, would determine the ultimate disposition of the remains. Since the proposed Project would be in compliance with the existing regulations of the California Health and Safety Code, the Public Resources Code, and CEQA, impacts to human remains would be less than significant and no mitigation is required.

MITIGATION MEASURES

CR-1 If development could affect a tribal cultural resource, require the developer to contact an appropriate tribal representative to train construction workers on appropriate avoidance and minimization measures, requirements for confidentiality and culturally appropriate treatment, and other applicable regulations, and consequences of violating State laws and regulations.

CR-2 If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgement. The following notifications of the find shall apply, depending on the nature of the find:

If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately, and no agency notifications are required.

If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined by CEQA or a Historic Property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.

FINDINGS

Project impacts to cultural resources would be **Less Than Significant with Mitigation** incorporated.

2.6 ENERGY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

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?

Less Than Significant Impact. The primary sources of energy consumption attributed to the Project would be construction activity and residential energy uses. Operation of construction equipment would require fuel consumption, typically diesel fuel or gasoline. However, energy consumption during construction would be temporary and intermittent, and would cease upon completion of the Project. Project construction is not expected to involve substantially inefficient, wasteful, or unnecessary consumption of energy.

Project operation would involve a substantial increase in energy usage compared to existing conditions. The Project proposes to develop 93 single-family residential units. According to United States Energy Information Administration (EIA) data on average residential fuel consumption, the average single-family residence in the Pacific Census Division (California, Oregon, Washington, Alaska, and Hawaii) consumed approximately 57.4 million British Thermal Units (BTUs) of energy annually (EIA 2020). Based on these factors, the proposed development of the Project site would consume approximately 5.3 billion BTUs annually. However, all newly constructed homes would be required to comply with building energy efficiency standards set forth in the California Energy Code, which would reduce energy consumption associated with residential uses to a less than significant level. Additionally, all street lighting within the City is operated and maintained by the Pacific Gas and Electric Company (PG&E); therefore, new street lighting within the subdivision would be required to comply with energy efficiency standards for PG&E-owned street and highway lighting, which would mandate the use of energy efficient Light Emitting Diode (LED) lamps.

Project operation would also involve new roadways and contribute to an increase of Vehicle Miles Traveled (VMT) of vehicles within the area. The TIA conducted for the Project (Wood Rodgers 2023) compared the Project VMT against the City's VMT threshold, presented within the City of Stockton Transportation Impact Analysis Guidelines (2023), to determine if the Project would have a significant VMT impact. It was determined that the Project would be 2.4% lower that the City threshold; therefore, the increased VMT resulting from the Project would be less than significant, and is not anticipated to cause a significant environmental impact related to wasteful, inefficient or unnecessary consumption of energy resources.

The Project would comply with standard construction BMPs and the Stockton General Plan relating to the efficient use of energy resources. Therefore, the Project would not result in significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation, and impacts would be considered less than significant.

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

No Impact. California has implemented numerous energy efficiency and conservation programs that have resulted in substantial energy savings. Comprehensive energy efficiency standards have been adopted as part of the California Building Standards Code, California Codes of Regulations, Part 6 of Title 24, also known as the California Energy Code contain energy conservation standards applicable to residential and non-residential building throughout California. The City of Stockton has also adopted the 2022 version of the California Energy Code as part of its building codes. The Project would be required to comply with all applicable building energy efficiency standards and applicable state and local plans; therefore, the Project would not contain elements that would conflict with or obstruct any state or local plan for renewable energy or energy efficiency. No impact would occur.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to energy or energy resources.

2.7 GEOLOGY AND SOILS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) 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?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
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 off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☒	☐	☐
e) 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?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

DISCUSSION

a) Would the project expose people or structures to 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?

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?

iv) Landslides?

i) No Impact. According to the CDOC Fault Activity Map of California (CDOC 2015), there are no known active faults within the Project area or directly adjacent to the Project area. The nearest fault is the Stockton Concealed Fault (Pre-Quaternary (>1.6 million years)), located approximately 7.5 miles south of the Project area. The Project would not substantially change the existing conditions in such a way that it would result in new risks for exposing people or structures to potentially substantial adverse effects (including risk of loss, injury, or death involving rupture of a known fault.

ii) Less than Significant with Mitigation. The Project site, along with the rest of the County, is subject to seismic shaking from fault features to the east and west of the County, including the Hayward/Rodgers Creek, San Andreas, and Calaveras Faults (San Joaquin County 2016). In the Stockton area, ground shaking equivalent to an intensity of VIII or IX on the Modified Mercalli Scale may occur, which could lead to moderate to significant structural damage (City of Stockton 2018). Individual improvements would incorporate engineering design features that would be in accordance with the California Building Code, which contains design criteria that would enable structures to withstand projected seismic shaking. Mitigation measures GEO-1 will require preparation of a geotechnical report in conjunction with the review and approval of proposed building plans. Implementation of the recommendations in the geotechnical report regarding building construction would reduce potential seismic and geologic impacts to a level that would be less than significant.

iii) No Impact. If the sediments which compact during an earthquake are saturated, soils may lose strength and become fluid; water from voids may be forced to the ground surface, where it emerges in the form of mud spouts or sand boils – a process called liquefaction. The Stockton General Plan Environmental Impact Report (EIR) states that areas believed to have the greatest potential for liquefaction are those areas in which the water table is less than 20 feet below the ground surface and the soils are predominantly clean, relatively uniform sands of loose to medium density (City of Stockton 2018). The soil on the Project site is exclusively Jacktone Clay, which is not sandy, and the depth to the groundwater table at the Project site is approximately 45-50 feet (see Section 3.9, Hydrology and Water Quality). Therefore, liquefaction is not considered a significant hazard on the Project site, and no impact from seismic related ground failure would occur.

iv) No Impact. The Project area is situated on a topographically flat area with no potential for landslide. No impact would occur.

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

Less Than Significant Impact. Jacktone soil associations have a low potential for erosion. According to the NRCS, a wind erosion concern exists with soils having a Wind Erodibility Index (WEI) of 136 or greater; however, the soils within the Project area exhibit a WEI of 86. Although regional soils have a low WEI, Project construction activities would loosen the soil, leaving it exposed to potential water and wind erosion. Compliance with District Regulation VIII, discussed in Section 2.3, would reduce potential wind erosion impacts. Additionally, the K factor of Jacktone soils within the Project area, which represents the susceptibility of soil to erosion and the rate of runoff, is 0.2, which would be considered low due to the high clay content of the soil (IWR 2002).

Projects involving greater than one acre of soil disturbance would be required to comply with State and local storm water quality controls to prevent the potential transport of eroded soil through runoff. The City of Stockton has adopted and implemented a municipal separate storm sewer (MS4) program in accordance with the Central Valley Regional Water Quality Control Board (RWQCB) Order No. R5-2016-0040-2. The Stockton program implements the State Construction General Permit, requiring the preparation of a Stormwater Pollution Prevention Plan (SWPPP) to address potential water quality impacts associated with construction as well as the incorporation of post-construction BMPs that provide long-term water quality protection. Incorporation of these air and water erosion control measures would reduce the potential for soil erosion and loss of topsoil. Therefore, impacts would be less than significant.

c) Would the project 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 off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. The soil underlying the Project site has not been identified by the USGS as inherently unstable or prone to failure. Standard City practices would require the submittal of geotechnical report, as described in mitigation measure GEO-1, and recommended engineering design for this and other potential soil instability hazards, which would avoid potentially adverse effects. The Project would have a less than significant impact relating to the stability of soils.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Less Than Significant with Mitigation. Natural soil within the Project area consists exclusively of Jacktone clay. Due to its high clay content, this soil type has high shrink-swell potential, as outlined by the Soil Expansive Potential index published by San Joaquin County. According to SJCOG, most of the County is characterized by expansive soils, although they are not considered to pose a significant hazard (SJCOG 2018). However, the County requires potential impacts of expansive soils to be mitigated through proper geotechnical engineering. Additionally, the City "shall require all proposed developments, reconstruction, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic seismic analysis to be sited, designed, and constructed to mitigate the risk associated with the hazard (e.g., expansive, liquefaction, etc.)" (Stockton 2018).

To reduce potentially significant impacts to the foundations of residences within the subdivision, the Project will incorporate site-specific measures in accordance with the California Building Code (CBC) and International Building Code (IBC).With the incorporation of mitigation measure **GEO-1**, impacts relating to expansive soils would be considered less than significant with mitigation.

e) Would the project 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 waste water?

No Impact. The Project would be required to connect to the City of Stockton sewer system and would not utilize septic tanks or an alternative wastewater disposal system on site. Therefore, the Project would have no impact due to soils incapable of adequately supporting septic systems.

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

Less than Significant with Mitigation. According to the University of California Museum of Paleontology (UCMP), there are no known recorded findings of fossils within the Project area (UCMP 2023). Additionally, no findings of unique paleontological resources, sites, or unique geological features were identified within the Project area during the record search and pedestrian survey.

The Project site is flat and contains no geological features that may be considered unique. The underlying geomorphology of the Project Area and vicinity consists of fine-grained Modesto Formation rocks deposited during the late Pleistocene (approximately 40 to 14 thousand years ago). The Modesto Formation is a known source of paleontological finds. Given past disturbance of the Project site, it is unlikely that any paleontological resources would be encountered, but it is conceivable that currently unknown resources may be uncovered during excavation activities. Mitigation measure **GEO-2** below provides for interruption of construction activities in such an event, inspection of resources encountered by a qualified paleontologist, and recommendations for disposition of the resource as specified by the paleontologist. Implementation of mitigation measure **GEO-2** would reduce potential impacts to a level that is less than significant.

MITIGATION MEASURES

GEO-1 Prior to the approval of Project development, a geotechnical study of the site shall be submitted to the City of Stockton Community Development Department's Building Division that addresses potential adverse effects related to expansive soils. The Building Division shall review and approve grading plans, improvement plans, and building design for private lands. The Building Division shall verify the implementation of geotechnical requirements in the field.

GEO-2 If any subsurface paleontological resources are encountered during construction, all construction activities within a 50-foot radius of the encounter shall be immediately halted until a qualified paleontologist can examine the materials, initially evaluate their significance and, if potentially significant, recommend measures on the disposition of the resource. The City of Stockton Building Division shall be immediately notified in the event of a discovery. The contractor shall be responsible for retaining qualified professionals, implementing recommended mitigation measures, and documenting mitigation efforts in written reports to the City.

FINDINGS

Project impacts to geology and soils would be **Less Than Significant with Mitigation** incorporated

2.8 GREENHOUSE GAS EMISSIONS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

REGULATORY SETTING

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to the human activities that include CO_2 (carbon dioxide), CH_4 (methane), NO_X (nitrogen oxides), N_2O (nitrous oxide), CF_4 (tetrafluoromethane), C_2F_6 (hexafluoroethane), SF_6 (sulfur hexafluoride), HFC-23 (fluoroform), HFC-134a (1, 1, 1, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

On June 1, 2005, California Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010; 2) 1990 levels by 2020; and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (Ting) (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan which includes market mechanisms, and implement rules to achieve *"real, quantifiable, cost-effective reductions of greenhouse gases."* Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels was reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the U.S. EPA to regulate GHG as a pollutant under the Clean Air Act (Massachusetts vs. [EPA] et al., 549 U.S. 497 (2007). The court ruled that GHG does fit within the Clean Air Act's definition of a pollutant, and that the U.S. EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions. [1]

According to the Association of Environmental Professionals white paper, "Alternative Approaches to Analyzing Greenhouse Gas Emissions and Global Climate Change in CEQA Documents" (June 29, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change creates a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." (See CEQA Guidelines sections 15064(i)(1) and 15130.) To make this determination, the incremental impacts of the project must be compared with the effects of past, current,

[1] http://www.epa.gov/climatechange/endangerment.html

and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

City of Stockton - Climate Action & Adaptation Plan

The City of Stockton adopted a Climate Action & Adaptation Plan (CAP) in 2014, in compliance with a legal settlement related to its General Plan 2035 and associated EIR. The CAP "outlines a framework to feasibly reduce community GHG emissions in a manner that is supportive of AB 32 and is consistent with the Settlement Agreement and 2035 General Plan policy" (City of Stockton 2014). The CAP set a GHG emission reduction target of 10% below 2005 GHG emission levels by 2020. To achieve this target, the CAP incorporates a Development Review Process through which development projects document the incorporation of measures that would produce a 29% reduction from 2020 business-as-usual GHG emissions. The majority of the GHG reductions in Stockton would occur through State regulatory programs and local programs that are producing or will produce GHG emission reductions that would help to reduce total emissions associated with a project by approximately 25% from business-as-usual levels. Development must identify the BMPs that would provide the additional 4% reduction in GHG emissions (City of Stockton 2014).

San Joaquin Valley Air Pollution Control District

In August 2008, the District adopted its Climate Change Action Plan (CCAP). The goals of the CCAP are, among others, to establish processes for assessing the significance of project specific GHG impacts for projects permitted by the District, and to assist local land use agencies, developers and the public by identifying and quantifying GHG emission reduction measures for development projects (District 2008). In 2009, the District adopted an approach to determine the significance of project specific GHG emissions.

METHODOLOGY

The District provides a tiered approach to assessing significance of project specific GHG emission increases. Projects implementing Best Performance Standards (BPS) would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual (BAU), is required to determine that a project would have a less than cumulatively significant impact. The BAU approach was developed consistent with the GHG emission reduction targets established in the CARB Scoping Plan. However, the BAU portion of the tiered approach is problematic based on the Center for Biological Diversity v. Department of Fish & Wildlife (2015) 62 Cal.4th 204, 225, 229 (also known as the "Newhall Ranch" decision). In the Newhall Ranch decision, the California Supreme Court explained that use of a BAU method, in which a project that demonstrates certain GHG reductions below the Scoping Plan's BAU scenario, is an acceptable methodology for determining potentially significant GHG emissions effects for purposes of CEQA; however, such a BAU approach must include substantial evidence showing how a project-level reduction in GHG emissions "in comparison to business as usual is consistent with achieving AB 32's statewide goal of a 29 percent reduction from business as usual."

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines §15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. As previously described, portions of the District's significance thresholds are problematic based on the Newhall Ranch decision. Therefore, for the purposes of this analysis the Project is evaluated for consistency with the 2022 CARB Scoping Plan, which sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045. Additionally, the Project is analyzed for consistency with the SJCOG 2022 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which seeks to achieve a 16 percent per capita reduction in GHG emissions generated by passenger vehicles by the end of 2035 (CARB 2022).

Where GHG emission quantification is required, emissions are modeled using CalEEMod, version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions are calculated primarily using CalEEMod model defaults for San Joaquin County, including the equipment needed for building construction and painting. Operational GHG emissions are also calculated using CalEEMod model defaults for San Joaquin County.

An Air Quality and Greenhouse Gas Emissions Assessment was prepared for the Project (ECORP 2023a). The following discussion is a summary of the results and determinations from the assessment.

DISCUSSION

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

Less Than Significant Impact. The City, County, and District have not yet established quantitative GHG emission thresholds, instead establishing performance-based standards to assess project-specific GHG emissions impacts, as previously discussed. According to these standards, if a project complies with an adopted statewide, regional, or local plan for GHG emissions reduction or mitigation and complies with District approved BPS for the specific project type, the GHG emissions associated with the project would be considered less than significant (District 2015).

The Project would generate GHG emissions through construction-related activities including worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Project construction would occur over a period of approximately two (2) years, resulting in a maximum of approximately 598 metric tons (MT) of CO_2e emitted over the course of construction (see Table 5).

Table 5. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (MT/Year)
Construction Calendar Year One	293
Construction Calendar Year Two	305
Total Construction	**598**
Source: ECORP 2023a; CalEEMod version 2022.1	

Construction-related emissions would be temporary and intermittent in nature and would cease upon completion of construction. All construction equipment would be required to meet federal tiered emission standards, the most recent of which, Tier 3 and Tier 4, mandate a 60 percent reduction of NO_x from equipment manufactured after 2006, and a 90 percent reduction from equipment manufactured after 2015, respectively. With the implementation of District BPS, GHG emissions generated from temporary construction activities would not exceed the District's performance-based thresholds of significance for criteria pollutants.

The Project would result in the generation of long-term operational GHG emissions due to the addition of 93 new residential dwelling units. Operational GHG emissions attributable to the Project are identified in Table 6.

Table 6. Operational-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (MT/Year)
Area	38
Energy	218

Emissions Source	CO_2e (MT/Year)
Mobile	1,195
Waste	26
Water	9
Refrigerants	<0
Total	**1,486**
Source: ECORP 2023a; CalEEMod version 2022.1	

The Project would comply with the performance standards established by the District and other regional and statewide emission reduction plans. Through implementation of emission reduction standards and guidelines within the SJCOG 2022 RTP/SCS and the 2022 CARB Scoping Plan, as well as District-approved BPS, the Project is not expected to generate GHG emissions in quantities that would individually or cumulatively contribute to a significant impact on the environment. Therefore, the Project would have a less than significant impact related to the generation of greenhouse gas emissions.

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

Less Than Significant Impact. The Air Quality and Greenhouse Gas Emissions Assessment prepared for the Project (ECORP 2023a) found the Project to be consistent with each of the applicable plans, policies and regulations.

The SJCOG 2022 RTP/SCS includes strategies and best practices to achieve the state-mandated per-capita reduction in GHG emissions originating from vehicles and light trucks in compliance with each of the eight policies within the RTP/SCS, which correspond to energy conservation, maximization of mobility and accessibility, improvement of safety and security, preservation of the transportation system, economic development support, interagency cooperation and public participation, cost effectiveness, and improvement of residents' quality of life. The Project would in no way conflict with any RTP/SCS policies and would not interfere with the SJCOG's ability to achieve its mobile source GHG emission reduction targets outlined in the RTP/SCS.

The Project would be required to include standard conditions and strategies set forth in the 2022 CARB Scoping Plan for both operational and construction emissions. Scoping Plan construction emissions reduction actions include enforcing idling time restrictions on construction vehicles and requiring construction vehicles to operate highest tier engines commercially available. Furthermore, the Project would be designed to include Scoping Plan-recommended design measures such as providing bicycle parking, creating on- and off-site safety improvements for bike, pedestrian, and transit connections, requiring solar panels, drought tolerant landscaping, and energy conserving appliances. As shown in Table 6, approximately 95 percent of the Project's emissions originate from energy and mobile sources, which would be reduced by the Scoping Plan measures described above. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. As such, impacts related to consistency with the 2022 Scoping Plan would be less than significant, and no mitigation is required.

Project would comply with all applicable statewide, regional, and local plans for the reduction of GHG emissions. Therefore, Project impacts would be considered less than significant.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to GHG emissions.

2.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

REGULATORY SETTING

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during Project construction.

DISCUSSION

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. The Project would involve the use of heavy equipment for the hauling and handling of construction materials. The use of this equipment may require the use of fuels or other common materials that have hazardous properties (e.g., fuels are flammable). These materials would be used in accordance with all applicable laws and regulations and, if used properly, would not pose a hazard to people or the environment. The use of potentially hazardous materials would be temporary, and the Project would

not include a permanent source of hazardous material. Therefore, the Project would have a less than significant impact, and no mitigation is required.

b) 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?

No Impact. A review of the State Water Resources Control Board (SWRCB) GeoTracker (SWRCB 2023) and the California Department of Toxic Substances Control (DTSC) EnviroStor (DTSC 2023) databases found no open or completed cleanup sites in the vicinity of the Project area. Therefore, the Project would not create a significant hazard to the public or the environment by being located on a known hazardous waste site.

Project construction would involve the use of hazardous materials such as fuels and solvents, which would create a potential for hazardous material spills. Construction vehicles would transport and use fuels in ordinary quantities. Fuel spills, if any occur, would be minimal and would not have significant adverse effects in the area. Other substances used in the construction process would be stored in approved containers and used in relatively small quantities, in accordance with the manufacturers' recommendations and/or applicable regulations. Overall, Project impacts related to hazardous material releases are considered less than significant.

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?

Less Than Significant Impact. The Project area is directly adjacent to the south of Ronald E. McNair High School and is located approximately 0.27 miles northeast and 0.28 miles west of Sutherland Elementary School and Westwood Elementary School, respectively. Project construction would require the handling of hazardous materials such as fuel and solvents. As described above, when such hazardous materials are in use, they would be used in accordance with all applicable laws and regulations, and when not in use would be stored appropriately.

As described in Section 2.3 Air Quality, the Project construction would generate dust emissions that could reach sensitive receptors (such as the adjacent school). However, the Project is not anticipated to exceed District significance thresholds for particulate matter, and implementation of District Regulation VIII and the ISR would reduce particulate matter emissions to a less than significant level.

Project construction would also generate emissions of diesel particulate matter, which is considered a toxic air contaminant (TAC). Health impacts related to TACs such as diesel particulate matter are associated with long-term exposure. As shown in Discussion b) of Section 2.3, PM exhaust emissions during construction would be temporary and would cease upon the completion of construction and would be well below District significance thresholds. Therefore, exposure of diesel particulate emissions generated by construction activities would be considered less than significant. Further, Project operational emissions of PM exhaust are minimal and well below the District significance thresholds, and the Project's Traffic Impact Analysis determined the Project would not create a CO Hot Spot. Overall, impacts of diesel particulate matter emissions would be considered less than significant.

Overall, Project construction and operation would not cause a significant impact related to the Project emitting hazardous emissions, or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of the existing Ronald E. McNair High School, and Project impacts would be considered less than significant.

d) Would the project 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?

No Impact. The proposed Project is not on a site included in the list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, which is also known as the Cortese List. No sites on the Cortese List are located within or surrounding the Project area; therefore, no impact would occur.

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?

No Impact. The Project is not located within an airport land use plan or within two miles of a public airport or public use airport. Therefore, the Project would not result in a safety hazard or excessive noise for people residing near or working in the Project area, and no impact would occur.

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

Less than Significant Impact. The San Joaquin Emergency Operations Plan (EOP) addresses planned methods for managing information, resources, and priorities during a multi-jurisdiction response to extraordinary emergency situations associated with natural and human caused disasters. The EOP encompasses the boundaries of San Joaquin County and includes the City of Stockton.

The Project area and surrounding roadways are not part of a designated emergency response or evacuation route. Project construction would occur mostly within the development area; however, frontage improvements, utility connections, and construction activities on existing roadways could potentially interfere with emergency vehicle access. Project construction would be temporary and intermittent and is not anticipated to require any roadway closures. Once construction is completed, the Project would not obstruct or interfere with emergency vehicle access. Therefore, Project impacts would be considered less than significant.

g) Would the project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. According to the San Joaquin County CAL FIRE, Fire Hazard Severity Zone Map (CAL FIRE 2023), the Project area is within a Local-Responsibility Area, that is not listed as a High or Very High Severity Area. The Project area would be under the responsibility of the Stockton Fire Department. Local Stations within proximity of the Project Area are Stockton Fire Station 7 and Station 11. The Project is in a topographically flat area and is predominantly surrounded by urban development. Therefore, the Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and no impact would occur.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to hazards and hazardous materials.

2.10 HYDROLOGY AND WATER QUALITY

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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:				
(i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(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	☐	☐	☒	☐
(iv) impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

REGULATORY SETTING

Federal Regulations

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to Waters of the United States (WOTUS). The CWA serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The CWA empowers the EPA to set national water quality standards and effluent limitations and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Non-point-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. The CWA operates on the principle that all discharges into the nation's waters are unlawful unless they are specifically authorized by a permit; permit review is the CWA's primary regulatory tool.

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into WOTUS. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in USACE regulations).

The Regional Water Quality Control Board (RWQCB) has jurisdiction under Section 401 of the CWA and regulates any activity that may result in a discharge to surface waters. Typically, the areas subject to jurisdiction of the RWQCB coincide with those of USACE (i.e., WOTUS, including any wetlands). The RWQCB also asserts authority over WoS under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

On April 21, 2020, the U.S. EPA and the USACE published the "Navigable Waters Protection Rule" to redefine the extent of the WOTUS, and CWA jurisdiction. Under the final rule, four categories of water are federally regulated under: 1) the territorial seas and traditional navigable waters; 2) the perennial and intermittent tributaries to those waters; 3) certain lakes, ponds, and impoundments; and 4) wetlands adjacent to jurisdictional waters. The final rule also detailed 12 categories of exclusions or features that are not considered "waters of the United States" that include features that only contain water in direct response to rainfall (e.g., ephemeral features), groundwater, many ditches, prior converted cropland, and waste treatment systems.

Porter-Cologne Water Quality Act
Also known as the California Water Code, the Porter-Cologne Water Quality Act (Porter-Cologne Act), was created in 1969 to govern water quality regulation in California and protect water quality as well as beneficial uses of water. The Porter-Cologne Act applies to all Waters of the State (WoS), including surface water, groundwater, and wetlands at both point and non-point sources of pollution. The act established the overarching SWRCB and nine semiautonomous Regional Water Boards. The Porter-Cologne Act requires the adoption of water quality control plans that give direction to managing water pollution in California. Usually, basin plans get adopted by the Regional Water Boards and are updated when needed. The plans incorporate the beneficial uses of the WoS and then provide objectives that should be met in order to maintain and protect these uses.

DISCUSSION

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

Less Than Significant Impact. The Project area does not contain surface waters or other hydrological resources. However, construction activity would loosen soil within the Project area, which could potentially be transported offsite by runoff, as described in Section 2.7. As a component of the City's adopted MS4, a Storm Water Management Plan (SWMP) has been implemented to minimize the potential storm water quality impacts of development. Program elements most applicable to land development include construction storm water quality requirements, which are met by the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP), risk-based monitoring requirements, and the incorporation of post-construction BMPs described in the City's adopted Storm Water Quality Control Criteria Plan (SWQCCP). Home subdivisions of ten (10) housing units or more are considered Priority Projects and are required by the City to comply with the SWQCCP due to the addition of impervious surfaces.

As required by the City MS4 program, construction projects disturbing greater than one acre of land are required to obtain a SWRCB CGP and prepare a SWPPP to address potential water quality impacts associated with construction. The SWPPP includes BMPs to prevent construction pollutants from entering stormwater runoff. Furthermore, the Project would be required to comply with City of Stockton Standard Specifications and Plans. Compliance with all applicable permits, programs, and regulations would reduce impacts of construction and operation of the Project, and the Project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Therefore, Project impacts would be considered less than significant.

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

Less Than Significant Impact. The Project would not draw directly from groundwater but would be connected to the City's water system, which relies in part on groundwater. However, groundwater reliance has been reduced in recent years with increased City reliance on surface water supplies. Development on the Project site would generate additional water demands, but the City's water system can accommodate this development from its existing and projected water supplies (see Section 2.19, Utilities and Service Systems). Project water demands would not require use of additional groundwater resources or result in a significant effect on groundwater volume.

Development of the Project would replace existing vacant land with buildings and pavement. This would reduce the existing groundwater recharge potential of the Project site by reducing the amount of rainfall percolated into the soil. The Stockton General Plan EIR analyzed the issue of groundwater recharge and found that projected urban development, including development of the proposed Project would not substantially interfere with groundwater recharge. It noted that, while future development would increase the total amount of impervious areas, "priority projects," including development projects, would be required to implement multiple BMPs that minimize impervious areas and retain, reuse, and/or infiltrate stormwater. In addition, proposed General Plan Action SAF-3.2.B requires new development to employ Low Impact Development approaches that conserve natural areas and reduce impervious areas. The EIR concluded that groundwater recharge impacts would be less than significant.

Therefore, the Project would not substantially decrease ground supplies or interfere substantially with groundwater recharge, and Project impacts would be considered less than significant.

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:

(i) result in substantial erosion or siltation on- or off-site;

(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

(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

(iv) impede or redirect flood flows?

Less Than Significant Impact. The proposed Project would contain construction BMPs within the Project SWPPP to control erosion and siltation on and offsite. Additionally, the Project is not located within a FEMA Special Flood Hazard Zone and would not impede or redirect flood flows.

The Project would develop an unpaved, 13.6-acre vacant lot into a 93-lot residential subdivision, resulting in the addition of approximately 10.4 acres of impervious surfaces in the area. However, Project design incorporates 2.9 acres of open space throughout the subdivision intended to allow for storm drainage. The open space lots will contain usable open space and amenities, as well as storm treatment swales integrated into the landscaping. The Project would additionally install Lot E, a 0.34-acre offsite drainage basin between the western Project boundary and the proposed Tam O' Shanter Drive extension, which would contain a meter to control flows to the City drainage system. The inclusion of pervious surfaces would bring the Project into compliance with Section 3 of the SWQCCP, which requires Project design to incorporate

effective pervious surfaces to which storm water can be routed prior to entering the storm water conveyance system. With the inclusion of storm drainage facilities within the Project area, the addition of impervious surfaces is not anticipated to substantially increase the rate or amount of surface runoff in a manner that would result in on or offsite flooding. Therefore, the Project would have a less than significant impact on erosion, runoff, and flood flows.

d) Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

No Impact. The Project site is not within a FEMA Special Flood Hazard Area, is not located within a 100-year flood hazard zone, tsunami zone or seiche zone, and would not risk the release of pollutants due to Project inundation. No impact would occur.

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

Less Than Significant Impact. The Project would be required to comply with water quality provisions in the City's SWMP and SWQCCP, including post-construction BMPs. These provisions are designed to ensure the City complies with the conditions of its NPDES MS4 permit. In turn, compliance with the permit conditions would ensure consistency with the water quality objectives and standards of the Basin Plan. The Groundwater Sustainability Plan for the Eastern San Joaquin Groundwater Subbasin has been submitted to the California Department of Water Resources (DWR), and the public comment period has ended. The Project, as described above, is not expected to place significant demands on groundwater supplies. It is expected that future development would comply with any provisions in the Groundwater Sustainability Plan related to development impacts on sustainable groundwater management.

The Project would conform to and comply with all local and state laws and regulations regarding water quality, and municipal stormwater guidelines. Project impacts related to water quality and groundwater management plans would be less than significant.

FINDINGS

With compliance with the Stockton Development Code and implementation of construction BMPs within the Project SWPPP, the Project will have a **Less Than Significant Impact** relating to hydrology and water quality.

2.11 LAND USE AND PLANNING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☒	☐

DISCUSSION

a) Would the project physically divide an established community?

No Impact. The Project would contribute to planned expansion within the community as supported by the General Plan and underlying zoning and would not conflict with existing or planned surrounding land uses. The Project does not include any elements that would physically divide an established community. No impact would occur.

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?

Less Than Significant Impact. The Project would be consistent with the City's General Plan, San Joaquin County Improvements Standards, and applicable City and County Ordinances. No General Plan Amendment or rezone is requested for the Project. However, the Project proponent is requesting a Planned Development (PD) Permit for the proposed residential development, which accommodates minor deviations from adopted development standards in the SMC as detailed below.

PDs are promulgated by City Development Code Chapter 16.144 and promote high quality development that incorporates amenities beyond those expected under conventional development. The permit may modify all applicable standards within the Development Code, with the exception of density/intensity and outer perimeter front and side setback provisions. Strict compliance with the City's General Plan is required. The Project PD would allow for private streets, smaller lot sizes, and a greater quantity of required open space throughout the subdivision, consistent with City zoning requirements.

A portion of the proposed Tam O' Shanter Drive extension and offsite drainage basin are located adjacent to, but outside the City of Stockton; however, the Project, in coordination with the San Joaquin LAFCO, proposes to annex this area into the City. Once the annexation process is completed, roadway improvements along Tam O'Shanter Drive would occur within the City limits and would comply with City standards and ordinances. Project impacts regarding consistency with land use plans and zoning would be less than significant.

FINDINGS

The Project would not physically divide an established community or conflict with any land plan, policy or regulation. With approval of a Planned Development Permit, the Project would have a **Less Than Significant Impact** relating to land use and planning.

2.12 MINERAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

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?

No Impact. According to the San Joaquin County 2035 General Plan (2016), the Project area is not with a designated Mineral Resource Zone. The Project area does not have any known mineral resources that would be of value to the region and the residents of the state; therefore, no impact would occur.

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?

No Impact. The Project area is not located within an identified locally-important mineral resource recovery site delineated within the San Joaquin County 2035 General Plan, City General Plan, or other land use plan. Therefore, the Project would not result in the loss of availability of a known mineral resource recovery site, and no impact would occur.

FINDINGS

The Project would have **No Impact** relating to mineral resources.

2.13 NOISE

Would the project result in:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☒	☐	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

REGULATORY FRAMEWORK

Federal Regulations

Occupational Safety and Health Act of 1970
The Occupational Safety and Health Administration (OSHA), a division of the United States Department of Labor, regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

National Institute of Occupational Safety and Health
A division of the US Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than eight (8) hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than four (4) hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

State Regulations

State of California General Plan Guidelines
The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific Community Noise Equivalent Level (CNEL)/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

California Department of Transportation
In 2020, Caltrans published the Transportation and Construction Vibration Manual (Caltrans 2020). The manual provides general guidance on vibration issues associated with the construction and operation of projects concerning human perception and structural damage.

Local Regulations

City of Stockton Municipal Code
The City Development Code, encompassing Title 16 of the SMC, serves the purpose of implementing the City's General Plan by classifying and regulating the uses of land and structures within the. Chapter 16.60 "Noise Standards" establishes noise exposure standards and procedures to protect the health and safety of City residents from the harmful effects of exposure to excessive, unnecessary, or offensive noise. Section 16.60.030(A) states that it is a violation of the Development Code to operate tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and 7:00 a.m., so that the sound creates noise disturbances across a residential property line. This is further promulgated in City Ordinance No. 111A "Nuisances", Article I, Section 16.

AFFECTED ENVIRONMENT

Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects, as well as uses where quiet is an essential element of their intended purpose. The Safety Element of the City of Stockton 2040 General Plan (2018) defines noise-sensitive land uses as: residential uses, schools, healthcare facilities, libraries, and churches.

The Project area is designated as Low-Density Residential land use by the City's General Plan, with surrounding land designated as Low-, Medium-, and High-Density Residential, Institutional, and Commercial land uses. The Project area entirely surrounds an existing residential parcel and is directly adjacent to Ronald E. McNair High School and a residential area south of the site. The nearest noise sensitive receptors include the residences fronting Sutherland Drive, approximately 35 feet south of the Project site, as well as the property near the center of the Project area.

METHODOLOGY

A Noise Impact Assessment for the Project was conducted in December 2023 by ECORP Consulting Inc. to estimate noise levels attributable to Project construction and operations and determine the level of impact the Project would have on the environment. This analysis of the existing and future noise environments is based on empirical observations and noise prediction modeling. Predicted construction noise levels were calculated utilizing the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (2006). Groundborne vibration levels associated with construction-related activities for the Project have been evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance. The assessment of the noise/land use compatibility of the Project's proposal to locate sensitive noise receptors within the existing noise environment affecting the Project Site was completed by conducting a long-term (24 hour) existing ambient baseline noise measurement on the Project Site with the use of a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute standard for general environmental noise measurement instrumentation. For the purposes of determining noise/land use compatibility, a 24-hour noise measurement is required. Offsite Project traffic noise and onsite noise sources produced by the Project are discussed qualitatively.

Existing and projected noise measurements for the Project are quantified on the decibel scale and utilize the following acoustical descriptors:

- **dBA** represents the sound pressure level in decibels (dB) 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 frequency response of the human ear and correlates well with subjective reactions to noise.
- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00pm to 7:00am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- L_{max} and L_{min} represent the maximum and minimum dBA measured by the sound level meter during the measurement period, respectively.

  Community Noise Equivalent Level (CNEL) is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm and 7:00 am to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.

Existing Ambient Noise Measurements

In order to quantify existing ambient noise levels in the Project Area, ECORP Consulting, Inc. conducted a long-term noise measurement (24-hours) on the Project Site on November 29, 2023, and extending into November 30, 2023. This 24-hour noise measurement site is representative of typical existing noise exposure on the Project Site during a typical 24-hour day. Additionally, ECORP conducted three (3) short-term measurements (15 minutes) in the neighborhoods immediately surrounding the Project Site. These short-term noise measurements are representative of typical existing noise exposure within and immediately adjacent to the Project Site during the daytime. The 15-minute measurements were taken between 12:43 p.m. and 1:39 p.m. The average noise levels and sources of noise measured at each location are listed in Table 7.

Existing Ambient Noise Environment

The Project site is currently undeveloped and bound by Ronald E. McNair Way to the north, with Ronald E. McNair High School beyond; West Lane to the east, with a gasoline station and residential neighborhoods beyond; residential parcels fronting Sutherland Drive to the south, and agricultural lands to the west. The most common and significant source of noise in the Project area is traffic noise generated by vehicles travelling on West Lane, which traverses the eastern boundary of the Project site. As shown in Table 7, the ambient recorded noise level on the Project site was 58.4 dBA L_{dn}. This measurement is generally verified by predicted roadway noise contours provided in the City of Stockton General Plan, which identifies the western edge of the Project site as laying within the 60 dBA CNEL noise contour. The majority of the Project site is located outside of the 60 dBA CNEL noise contour (City of Stockton 2018).

Table 7. Existing (Baseline) Noise Measurements

Location Number	Location	L_{dn}	L_{eq}	L_{min}	L_{max}	Time
15-Minute Measurements						
1	Adjacent to Ronald E. McNair High School Staff Parking Lot and West Lane	-	63.7	39.2	79.9	12:43 p.m. – 12:58 p.m.
2	On Tuscany Circle, Adjacent to House #9413	-	48.5	38.9	69.7	1:05 p.m. – 1:20 p.m.
3	On West Lane Frontage Road, Adjacent to House #9413	-	68.8	45.2	77.7	1:24 p.m. – 1:39 p.m.
24-Hour Measurements						
4	On Project Site, Adjacent to Existing Residence Bisecting Site	58.4	53.1	33.3	78.3	1:51 p.m. – 1:51 p.m.

Source: Measurements taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator.

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?

Less Than Significant with Mitigation.

Construction Noise

During construction, noise from equipment would cause short-term localized increases in ambient noise levels. The actual noise levels at any particular location would depend on a variety of factors, including the type of construction equipment or activity involved, the distance to the source of the noise, the obstacles to noise that exist between the receptor and the source, the time of day, and similar factors. However, this increase would be temporary, intermittent, and limited to the daytime hours. The City does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Instead, construction noise is regulated by allowable hours of construction. Section 16.60.030 of the SMC prohibits construction between the hours of 10:00 p.m. and 7:00 a.m. The Project is required to adhere to the SMC and this construction timing limitation.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors and in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Federal Highway Administration's Roadway Noise Construction Model and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998 by NIOSH. As discussed in the Regulatory Framework, the NIOSH construction related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

Calculated construction average noise levels for surrounding receptors are shown in Table 8.

Table 8. Construction Average Noise Levels (dBA) at Project Area Receptors

Construction Phase	Estimated Exterior Construction Noise Level at Closest Receptor (L_{eq} dBA)	NIOSH Construction Noise Standard (L_{eq} dBA)	Exceeds Standard?
Site Preparation	78.3	85	**No**
Grading	81.0	85	**No**
Building Construction	80.2	85	**No**
Paving	80.5	85	**No**
Painting	67.7	85	**No**

Source: FHWA Roadway Noise Construction Model (FHWA 2006)
NIOSH: National Institute for Occupational Safety and Health
Leq dBA: Equivalent energy noise level, average acoustic energy content of noise for a stated period of time.

As shown in Table 8, construction activities would not exceed the applicable noise standards. It is noted that construction noise was modeled on a worst-case basis. It is unlikely that all construction equipment would be operating at the same time for the various phases of Project construction. While no noise standard would be exceeded by construction of the Proposed Project, the Project Site is located directly adjacent to several noise-sensitive receptors. Therefore, mitigation measures NOI-1 and NOI-2 will be implemented as part of the Project as construction best management practices. Within the inclusion of these measures, Project impacts related to the generation of substantial temporary increases of ambient noise would be considered less than significant with mitigation incorporated.

Operational Noise

The primary noise source generated from Project operations would include mechanical equipment and other typical sources specific to residential neighborhoods, such as barking dogs, internal traffic circulation, power tools, landscaping equipment, radios, and people talking. According to previous field noise measurements conducted by ECORP Consulting, Inc., mechanical heating, ventilation, and air conditioning equipment generates noise levels less than 45 dBA at 20 feet. This noise level is less than the City's daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise standards for land use noise sources. The Project is anticipated to generate operational daytime and nighttime noise at similar levels currently generated by the surrounding residential neighborhoods.

As discussed in Section 2.3, Air Quality, the operational Project is anticipated to contribute up to 944 vehicle trips daily to roadways in the Project vicinity. According to Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). The primary Project access road, Ronald E. McNair Way, is classified as an arterial roadway and can accommodate between 20,000 and 50,000 vehicle trips per day. West Lane, also an arterial roadway, can similarly accommodate between 20,000 and 50,000 vehicle trips per day. Tam O' Shanter Drive is classified as a collector roadway and can accommodate up to 10,000 vehicle trips per day (ECORP 2023c). The addition of 944 vehicle trips per day would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible. Operational noise outcomes as part of overall Project implementation would not cause a substantial increase in permanent ambient noise levels in the vicinity of the Project, and Project impacts would be considered less than significant.

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

Less Than Significant Impact. The City does not regulate or have a numeric threshold associated with construction vibrations. As previously stated, SMC Section 16.32.100 includes qualitative benchmarks for reducing vibration effects within Stockton. Vibrations from temporary construction and demolition activities are exempt from the provisions of Section 16.32.100, as are vehicles that leave the subject parcel (e.g., trucks, trains, and aircraft).

Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Although there are existing structures located directly adjacent to the Project site, construction activities would occur throughout the site and would not be concentrated at the point closest to sensitive receptors. Additionally, construction activities would be temporary in nature and would occur during normal daytime working hours in accordance with measure NOI-1. Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. Therefore, Project impacts would be considered less than significant.

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?

No Impact. The Project is not located within the vicinity of a private airstrip or an airport land use plan and is not within two (2) miles of a public airport or public use airport. The nearest airstrips are Kingdon Airpark and Lodi Airpark, located approximately 4.6 miles northwest and 3.3 miles north of the Project area, respectively. The nearest airport is the Stockton Metropolitan Airport, approximately 9.5 miles south of the Project site. According to the Stockton Metropolitan Airport Land Use Compatibility Plan (2018), the Project is located outside of all airport noise contours. Therefore, the Project would not expose people residing or working in these areas to excessive noise levels, and no impact would occur.

MITIGATION MEASURES

NOI-1 Construction activities associated with the Project shall adhere to the requirements of the SMC with respect to hours of operation. The applicant shall ordinarily limit construction activities to the hours of 7:00 a.m. to 10:00 p.m., Monday through Saturday, pursuant to SMC Chapter 16.60. No construction shall occur on Sundays or national holidays without a written permit from the City. All construction equipment shall be in good working order and shall be fitted with factory-equipped mufflers.

NOI-2 The following measures shall be applied to the Project during construction:

1. All construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers, consistent with manufacturer standards.
2. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the Project site.
3. As applicable, shut off all equipment when not in use.
4. Equipment staging shall be located in areas that create the greatest distance between construction related noise/vibration sources and sensitive receptors surrounding the Project site.

5. Jackhammers, pneumatic equipment, and all other portable stationary noise sources shall be directed away from noise sensitive receptors nearest the Project site to the greatest extent possible. Either one-inch plywood or sound blankets can be utilized for this purpose. One-inch plywood and/or sound blankets should reach up from the ground and block the line of sight between equipment and the nearest off-site residences. The shielding should be without holes or cracks.
6. No amplified music and/or voice will be allowed on the construction site.

FINDINGS

The Project would not result in substantial operational noise. However, Project construction would cause temporary localized increases in ambient noise in the vicinity. With the inclusion of City and County approved mitigation measures, the Project is anticipated to reduce construction noise to acceptable levels. Therefore, Project impacts to noise would be **Less Than Significant with Mitigation** incorporated.

2.14 POPULATION AND HOUSING

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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)?	☐	☐	☒	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

REGULATORY SETTING

CEQA requires the analysis of a project's potential to induce growth. CEQA guidelines, Section 15126.2(d), require that environmental documents *"…discuss the ways in which the project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"*

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)?

Less Than Significant Impact. The Project would construct 93 new single-family residences, inducing growth on a vacant parcel. At the average citywide occupancy rate of 3.24 residents per residence, the Project would result in a population increase of approximately 301 people. The population of the City of Stockton, as of July 2022, was estimated to be 321,890; therefore, this would be an increase of 0.09 percent (U.S. Census Bureau 2022). Proposed residential development would not exceed the allowable residential density within the Residential, Low (RL) Density zone designation, pursuant to the SMC. Therefore, Project impacts to population growth would be considered less than significant.

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

No Impact. The parcel on which the Project would occur is currently vacant and does not contain existing residences. Therefore, the Project would not displace existing people or housing and no impact would occur.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to population or housing.

2.15 PUBLIC SERVICES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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:				
Fire protection?	☐	☐	☒	☐
Police protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other public facilities?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The Project area is located within the City of Stockton in San Joaquin County. Public services are provided to the Project area by the Stockton Fire Department, Stockton Police Department, and the Lodi Unified School District. Fire protection in the City is also supported by Cal Water and some adjacent rural fire departments. All parks and recreational facilities are also operated by the City.

Fire protection services within the Project area are provided by the Stockton Fire Department, which operates out of 13 stations throughout the Stockton metropolitan area. The nearest station to the Project site is Station 13, located approximately 1.5 miles east at 3606 Hendrix Drive. All public fire protection agencies in San Joaquin County operate under a master mutual aid agreement, mandating the use of other fire agencies should the resources of one agency be exhausted (San Joaquin County 2023). Additionally, under the San Joaquin Local Agency Formation Commission (LAFCO) Municipal Service Review (2011), the Stockton Fire Department has a dispatch time of one minute or less for at least 90 percent of alarms, a fire response travel time of four minutes or less for the arrival of the first arriving engine company at a fire incident, and a travel time of eight minutes or less for the deployment of an initial full alarm assignment at a fire incident (San Joaquin LAFCO 2011).

Law enforcement services within the Project area are provided by the Stockton Police Department's Valley Oak District, whose main station is located approximately 5.8 miles south of the Project area at 22 East Market Street. It is the Police Department's policy to respond to all emergency calls within a period of five (5) to seven (7) minutes. The Police Department has no adopted service levels.

The Project area is within the boundaries of the Lodi Unified School District (LUSD), which provides educational services from preschool through 12th grade. The LUSD operates Ronald E. McNair High School, which borders the Project site to the north. Sutherland Elementary School and Westwood Elementary School, located 0.27 miles west and 0.28 miles east of the Project respectively, are also operated by LUSD.

Parks and recreation facilities within incorporated areas are operated by the City of Stockton Community Services Department, maintained by private contract through the City of Stockton Consolidated Landscape

Maintenance District which are administered by the City of Stockton Public Works Department. The nearest City park to the Project site is Misasi Park, located just north of Ronald E. McNair High School. . Additional City parks in the vicinity include Cortez Park, Valverde Park, Loch Lomond Park, and Matt Equinoa Park, located approximately 0.6 miles south, 0.7 miles southeast, 1 mile southwest, and 1.2 miles east of the Project site, respectively. The Project is also located approximately 3.8 miles southeast of the Shumway Oak Grove Regional Park, which encompasses 165 acres and includes walking trails, nature areas, and a disc golf course.

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: fire protection, police protection, schools, parks, and/or other public facilities?

Less Than Significant Impact. As discussed in Section 2.14, the subdivision would add approximately 301 people to the regional population. The construction of new residences would generate additional demand for public services including fire protection and law enforcement.

Fire Protection
The subdivision would generate demand for increased fire protection services. Development projects within the City are required to pay Public Facility Fees (PFFs) to expand fire service areas of the Stockton Fire Department. Additionally, the Project would comply with the standard requirements of the City's adopted California Fire Code regarding placement of fire hydrants, adequacy of water supply to the site, and emergency access. With the required payment of PFFs, which are collected at the time of building permit issuance, and compliance with municipal and state fire codes, the Project would have a less than significant impact on fire protection facilities.

Police Protection
The subdivision would generate the demand for increased police protection services. As a new development project, the Project would be required to pay PFFs to the City for expanded law enforcement service areas. With the required payment of PFFs, the Project would have a less than significant impact on police protection facilities.

Schools
The Project site is located within the boundaries of the LUSD. Children are anticipated to reside within the completed subdivision; therefore, the Project would generate additional students within the LUSD. The LUSD Board has implemented a School Facility Fee Justification Report for Residential, Commercial, and Industrial Development Projects to assist in expanding pupil capacity in schools within the district. The estimated school facilities fee associated with new residential development within the LUSD is $3.48 per square foot, adjusted biennially for inflation (LUSD 2016). With the required payment of LUSD school facilities fees to offset potential school operation costs resulting from new development, Project impacts on schools is anticipated to be less than significant.

Parks and Other Public Facilities
See Section 2.16, Recreation, below. The Project will have a less than significant impact on City park facilities. The Project would have no known impact on other public facilities.

FINDINGS

With the payment of all necessary Public Facilities Fees and compliance with all state and local regulations, the Project would have a **Less Than Significant Impact** relating to public services.

2.16 RECREATION

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☐	☒

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?

Less Than Significant Impact. The development of 93 new single-family residences would result in additional park demand within the Project neighborhood and the City as a whole. The nearest City park is Misasi Park, located just north of Ronald E. McNair High School. . To account for additional use and potential new construction of regional parks, the Project would typically be required to pay PFFs to the City at the time of building permit issuance. However, the City is not requiring the collection of impact fees for parks, therefore, Project impacts would be less than significant.

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?

No Impact. The Project does not include recreational facilities, nor does it require the construction or expansion of other recreational facilities, and no impact would occur.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to recreation.

2.17 TRANSPORTATION/TRAFFIC

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☒	☐

DISCUSSION

a) Would the project conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact. The Project is located at 9473 West Lane on a currently undeveloped site (APN 084-060-10) totaling approximately 13.6 acres. The Project would gain access to the existing roadway network via a new Project driveway intersection with Ronald E. McNair Way. The Project would also extend Tam O' Shanter Drive north from Sutherland Drive to connect with Ronald E. McNair Way. The Project site is currently zoned as Residential, Low (RL). The Project proposes to develop 93 single-family residential unit lots contained within a gated community.

According to the TIA (Wood Rodgers 2024) prepared for the Project, the proposed Project is anticipated to generate a total of 944 daily trips. This total includes 70 AM peak hour primary trips (18 inbound, 52 outbound), and 93 PM peak hour trips (59 inbound, 34 outbound) under typical weekday traffic demand conditions. The Project VMT was compared against the City's VMT threshold to determine if the Project would have a significant VMT impact. The Project VMT was estimated to be 2.4% lower than the City threshold. Therefore, the Project would have a less than significant VMT impact. Additionally, the construction of the Tam O'Shanter Drive extension would generally reroute and shorten the existing trips traveling between the neighborhood directly south of the Project site and the West Lane & Ronald E. McNair Way/East Morada Lane intersection (and nearby high school), resulting in an average estimated reduction of area VMT of 913 VMT per day.

Further, based on the criteria outlined in the *City of Stockton Transportation Impact Analysis Guidelines*, the Project is not anticipated to cause a significant increase in pedestrian, bicycle, or transit demand in the study area that would put existing facilities over capacity or adversely affect existing or proposed pedestrian, bicycle, or transit facilities in a way that would discourage their use. The Project would not result in unsafe conditions for bicyclists or pedestrians or result in unsafe bicycle/pedestrian/motor vehicle conflicts (Wood Rodgers 2024).

Although Project operations would result in additional vehicle trips per day, the Project would have a less than significant impact on VMT and multi-modal transportation within the City or the regional transportation system. Therefore, the Project would not conflict with the Stockton General Plan, San Joaquin County General Plan, Regional Congestion Management Program (2021), or other State, regional,

or local plan. Project impacts related to conflict with any program, plan, ordinance, or policy addressing the circulation system would be less than significant.

b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Less Than Significant Impact. According to the TIA prepared for the Project, the potential residential VMT for the Project site was determined by establishing a "Representative Project Study Area" within the residential area directly south of the site. All existing vehicle trips and corresponding trip lengths for residents of the Representative Project Study Area under average Thursday daily conditions were extracted through Replica software and used to calculate VMT per capita within this area. A total of 4,210 individuals reside in this area, resulting in an average daily VMT of 68,495 and a VMT per capita of 16.3. This VMT per capita is anticipated to reflect projected VMT per capita for the proposed Project (Wood Rodgers 2024). Project VMT was compared against the City's VMT threshold to determine if the Project would have a significant VMT impact.

Table 9. Project VMT Impact

Metric	Value
City Average VMT per Capita	19.7 VMT per Capita
15% Below City Average VMT per Capita (Threshold)	16.7 VMT per Capita
Project VMT per Capita	16.3 VMT per Capita
Percent Difference	-2.4%
Impact	**Less Than Significant**

The Project VMT was estimated to be 2.4 percent lower than the City threshold; therefore, the Project would have a less than significant VMT impact.

Additionally, the construction of the Tam O' Shanter Drive extension would generally reroute and shorten the existing trips traveling between the neighborhood directly south of the project site and the West Lane and East Morada Lane intersection (and the nearby high school), resulting in an average estimated reduction of area VMT of 913 VMT per day. CEQA Guidelines Section 15064.3(b) indicates that projects that decrease VMT in the project area compared to existing conditions should be presumed to have a less than significant impact; therefore, the Project would have a less than significant impact on VMT.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. Project design does not contain potentially hazardous geometric features such as sharp curves or dangerous intersections and would not result in incompatible uses. Therefore, no impact would occur.

d) Would the project result in inadequate emergency access?

Less Than Significant Impact. Emergency services provided by the Stockton Police and Fire departments would be extended to the Project area, as discussed previously in Section 2.15, *Public Services*. Emergency access to the Project site would be provided via Azul Way, which would be the primary entrance to the subdivision, as well as a gated emergency access point connecting Aloe Road with the existing West Lane

Frontage Road in the southeast corner of the subdivision. The two (2) proposed entry points are anticipated to allow adequate access for emergency vehicles. The Project would have a less than significant impact.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to transportation/traffic.

2.18 TRIBAL CULTURAL RESOURCES

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:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) 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	☐	☒	☐	☐
b) 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.	☐	☒	☐	☐

REGULATORY SETTING

State Regulations

Tribal Cultural Resources

As defined at PRC § 21074, a tribal cultural resource (TCR) is a site, feature, place, cultural landscape, sacred place or object that is of cultural value to a California Native American tribe and is either: 1) on or eligible for the CRHR or a local historic register; or 2) the lead agency, at its discretion, chooses to treat the resource as a TCR. TCRs are similar to traditional cultural properties (TCPs) in terms of their characteristics, identification, and treatment, and may include a cultural landscape to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Additionally, as defined at PRC § 21074(c), a historical resource, a unique archaeological resource, or a non-unique archaeological resource may also be a TCR if it conforms to the criteria of a TCR in PRC § 21074(a). CEQA mandates that lead agencies determine whether a project will have a significant impact on TCRs that are eligible for listing on the CRHR (i.e., a historical resource), or are determined to be significant by the lead agency in order to appropriately mitigate any such impacts.

Under the CEQA Guidelines, even if a resource is not included on any local, state, or federal register, or identified in a qualifying historical resources survey, a lead agency may still determine that any resource is a historical resource (i.e., TCR) for the purposes of CEQA if there is substantial evidence supporting such a determination (CEQA Guidelines § 15064.5[a]). A lead agency must consider a resource to be historically significant if it finds that the resource meets the criteria for listing in the CRHR. A resource may be eligible for inclusion in the CRHR if it:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage (Criterion 1);
- Is associated with the lives of persons important in our past (Criterion 2);
- 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 (Criterion 3); and
- Has yielded, or may be likely to yield, information important in prehistory or history (Criterion 4).

In accordance with CEQA Guidelines, cultural resources investigations are necessary to identify TCRs that may have significant impacts as a result of a project (14 CCR §15064.5). The following steps are routinely implemented in a cultural resources investigation for CEQA compliance:

1. Identify cultural resources in the proposed project area.
2. Evaluate against the CRHR criteria of significance (listed below).
3. Evaluate the impacts of the proposed project on all cultural/tribal resources.
4. Develop and implement measures to mitigate proposed project impacts on historical resources or resources deemed significant by the lead agency.

As TCRs hold cultural value to a California Native American tribe, consultation with local Native American tribes is an integral component of each of the cultural resources investigation steps described above.

Assembly Bill 52 (Gatto) and Consultation
The lead agency for CEQA is responsible for consultation with Native American tribes regarding the potential for a project to impact TCRs, pursuant to Assembly Bill 52 and PRC §§ 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, 21084.3, and 5097.94(m). Assembly Bill 52 recognizes that *"…tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated…"* and that consultation will occur between a lead agency and Native American tribes for covered projects.

PRC §21080.3.1 (a) and Government Code §65352.4 define consultation as *"the meaningful and timely process of seeking, discussing, and considering carefully the views of others, in a manner that is cognizant of all parties' cultural values and, where feasible, seeking agreement. Consultation between government agencies and Native American tribes shall be conducted in a way that is mutually respectful of each party's sovereignty. Consultation shall also recognize the tribes' potential needs for confidentiality with respect to places that have traditional tribal cultural significance."*

As described in Section 2.5, Cultural Resources, a proposed project may induce a significant impact to a historical resource, unique archaeological resource, or a TCR if it causes a substantial adverse change (i.e., physical demolition, destruction, relocation, or alteration) to the resource or immediate surroundings (14 CCR 15064.5[b]), thereby demolishing or significantly altering the physical characteristics that qualify it for listing on the CRHR or local registers (PRC §§ 5020.01[k] and 5024.1[g]). A project that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment (PRC § 21084.2). A lead agency shall establish measures to avoid impacts that would alter significant characteristics of a TCR, when feasible (PRC §21084.3). As such, the County is committed to working together with tribes, and consultation efforts with California Native American tribes are described below.

Native American Historical, Cultural, and Sacred Sites
Pursuant to PRC 5097.94 the NAHC has authority and duty to "*identify and catalog places of special religious or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands"* and has the power and duty to make recommendations for acquisition by the state or other public agencies regarding Native American sacred places that are located on private lands, are inaccessible to Native Americans, and have cultural significance to Native Americans.

California Native American Graves Protection and Repatriation Act of 2001
The California Native American Graves Protection and Repatriation Act of 2001 (CalNAGPRA) requires all state agencies and museums that receive state funding and that have possession or control over

collections of human remains or cultural items to provide a process for the identification and repatriation of these items to the appropriate tribes.

Local Regulations

San Joaquin County
The Natural and Cultural Resources Element of the San Joaquin County 2035 General Plan (2016) outlines goals and policies intended to protect the County's valuable architectural, historical, archaeological, and cultural resources. Measure NCR-6.6 mandates the County to consult with Native American tribes regarding proposed development projects and land use policy changes consistent with the State's Local and Tribal Intergovernmental Consultation requirements.

City of Stockton
The Land Use Element of the City of Stockton 2040 General Plan (2018) includes Policy LU-5.2 to protect natural resource areas, fish and wildlife habitat, open space areas, agricultural lands, parks, and other cultural or historical resources from encroachment or destruction by incompatible development. Under this policy, Action LU-5.2E requires the City to consult with Native American representatives through early coordination to identify locations of importance, including archaeological sites and TCPs. Furthermore, Action LU-5.2F states that if development could affect a TCR, the developer must contact the appropriate tribal representative to train construction workers on appropriate avoidance and minimization measures, requirements of confidentiality and culturally sensitive treatment, and other applicable regulations.

Native American Consultation

Within San Joaquin County, there are no California Native American tribes traditionally or culturally affiliated with the Project area who have requested in writing that they be consulted for the purposes of AB 52, pursuant to PRC Section 21080.3.1.

DISCUSSION

If a lead agency determines that a project may cause a substantial adverse change to a TCR, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR; or 2) a party, acting in good faith, and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act.

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, 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)

Less Than Significant with Mitigation. According to the Cultural Resources Review prepared for the Project, there has been no indication that the Project area is sensitive for subsurface archaeology of any kind, including tribal resources. Construction would involve shallow ground disturbance that could impact tribal resources should they be present; however, the Project will include mitigation measure CR-1 as well as a protocol should human remains be discovered (see Section 2.5, *Cultural Resources*) that would engage with the appropriate tribal groups should an unlikely/unexpected discovery occur.

In accordance with AB 52, notice of the proposed Project was provided to eight potentially interested Native American tribes. Of the eight tribes, input to the project was provided by the northern Valley Yokuts.

Consultation was not requested, but the tribe requested that archaeological and Native American monitors be present during Project construction in order to prevent impacts to tribal cultural resources or burials. This requirement is included in mitigation measures presented below. Implementation of these measures would reduce potential impacts on tribal cultural resources to a level that would be less than significant.

b) Would the project cause a substantial adverse change in the significance of 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.

Less Than Significant with Mitigation. No cultural resources or archaeological materials were identified during record searches or field surveys performed for the Project. However, based on the soil makeup, underlying geological composition, and the site's proximity to water, the likelihood of any pre-contact cultural resources in the Project area is considered low to moderate. With the inclusion of measure **CR-1** and **CR-2**, the proposed Project is not anticipated to cause a substantial adverse change in the significance of any cultural or tribal resources.

MITIGATION MEASURES

The Project would include measures **CR-1** and **CR-2**, discussed in Section 2.5, *Cultural Resources*, to mitigate potential impacts in the event of unexpected subsurface archaeological discovery.

FINDINGS

The Project impacts to tribal cultural resources would be **Less than Significant with Mitigation** incorporated.

2.19 UTILITIES AND SERVICE SYSTEMS

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
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?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☒	☐
e) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

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?

Less Than Significant Impact. The Project proposes to develop 93 single-family residential unit lots contained within a gated community. The currently vacant parcel would require connection to the City water and wastewater systems, and inclusion of stormwater drainage, electrical power, natural gas, and telecommunications facilities to support the new residential development. No significant environmental effects are anticipated as a result of the proposed Project, or the provisions of utilities or service systems necessary for Project completion.

Water and Sewer Systems

The Project would include the installation of new 8" sanitary sewer and water lines in all proposed private roadways within the subdivision, all of which will be connected to existing City of Stockton systems and designed to City standards. New residences would additionally require the treatment of increased volumes of wastewater. However, the additional wastewater would not necessitate the construction of new treatment facilities and the wastewater treatment requirements and thresholds of the Central Valley RWQCB would not be exceeded. Impacts associated with expanded water and wastewater treatment would be less than significant.

Stormwater Drainage

Storm drainage within the Project site would be conveyed to an onsite storm drain basin and metering station that will discharge to the City of Stockton storm drain system. The storm drain would also be designed to City standards and would conform with NPDES requirements. To avoid any potentially significant environmental effects, standard BMPs set forth by the SWRCB and the City of Stockton Stormwater Quality Control Criteria Plan (2020) would be included in the Project to avoid or minimize the

release of pollutants into the City storm drainage systems. Therefore, Project impacts would be less than significant.

Electric Power and Telecommunications
Electrical and natural gas services are provided to the area by PG&E. No natural gas pipelines are located within the Project area. However, existing overhead electrical lines are located within the Project area adjacent to the frontage street along the southerly boundary of the site. Due to the proximity of existing electrical utilities, the Project site would have access to these services without requiring significant expansion of these systems. It is anticipated that PG&E and telecommunications providers will be able to extend their services to the Project site as required and Project impacts on energy and communications systems would be less than significant.

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?

Less Than Significant Impact. The 93 new single-family residences will require connection to the City water supply, resulting in additional demand. According to the 2020 Urban Water Management Plan (UWMP), adopted by the City of Stockton in 2021, water supplies for the City were modeled for single normal and single dry years, as well as in 5-year drought scenarios. Findings of these projections showed that the City's water supply was stable during single normal and single dry years, and should the region experience a five-consecutive-dry-years period, adequate water supplies are available to meet projected demand (Stockton 2021). Therefore, the City's water supply is anticipated to have the capacity to accommodate additional demand resulting from the Project, and impacts would be less than significant.

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?

Less Than Significant Impact. The Project would result in additional wastewater that would require treatment. However, according to the City's 2022 Wastewater Master Plan Update, all wastewater flows from the City are conveyed to the Regional Wastewater Control Facility (RWCF), and all existing and planned development areas and unincorporated islands are expected to be served by the RWCF, regardless of water source (Stockton 2022). Therefore, the City's existing wastewater treatment facility is anticipated to have sufficient capacity to accommodate additional wastewater attributed to the Project and impacts would be considered less than significant.

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?

Less Than Significant Impact. The Project would not generate substantial or unexpected demand for solid waste services. San Joaquin County is served by three active solid waste landfill facilities: the North County Landfill and Recycling Center, the Foothill Sanitary Landfill, and the Forward Landfill. These facilities are expected to be operational until 2048, 2082, and 2036, respectively, and have a remaining capacity of 35,400,000 cubic yards, 125,000,000 cubic yards, and 24,720,669 cubic yards, respectively (Cal Recycle 2024). The operational Project is not anticipated to generate solid waste in quantities that would exceed the maximum remaining capacity of any landfills in the County. Furthermore, the Project would comply with applicable federal, state, and local regulations relating to solid waste. Project impacts on solid waste would be considered less than significant.

e) Would the project comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The Project would comply with federal, state, and local statutes and regulations related to solid waste; therefore, impacts associated with compliance with statutes and regulations pertaining to solid waste would be considered less than significant.

FINDINGS

The Project would have a **Less Than Significant Impact** relating to utilities and service systems.

2.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

DISCUSSION

a) Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The San Joaquin County EOP was developed by the County Office of Emergency Services (OES) in 2022. The EOP addresses the planned response to emergency situations as a result of natural or human-caused disasters which have major threats to life, property, and the environment. According to the EOP, the responsibility for fire suppression rests with local fire districts and first responder agencies (San Joaquin County 2022). Project construction or operation would not impair the adopted EOP, and no impact would occur.

b) Would the project, 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?

No Impact. According to the San Joaquin County CAL FIRE, Fire Hazard Severity Zone Map (CAL FIRE 2023), the Project area is within a Local-Responsibility Area, that is not listed as a High or Very High Fire Severity Area. The Project area would be under the responsibility of the Stockton Fire Department. Local Stations within proximity of the Project Area are Stockton Fire Station 7 and Station 11. The Project is in a topographically flat area and is predominantly surrounded by urban development. Therefore, the Project is not anticipated to exacerbate wildfire risks due to slope, prevailing winds, or other factors. No impact would occur.

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?

No Impact. The Project would include new roadways and utility connections as part of the proposed Project. However, as described in discussion b) above, the Project is located in a topographically flat area and is not within a known High or Very High Fire Severity Area. The installation or maintenance of Project features would not exacerbate fire risk or create ongoing impacts to the environment. No impact would occur.

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?

No Impact. As described in discussion b) above, the Project is located in a topographically flat area and is not within a known High or Very High Fire Severity Area. The Project would not include components that would cause excessive runoff, slope instability or drainage changes resulting in flooding or landslides. Project construction and operation would not expose people or structures to significant risks and no impact would occur.

FINDINGS

The Project would have **No Impact** relating to wildfire.

2.21 MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Does the project have the potential to 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?	☐	☒	☐	☐
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)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION

a) Does the project have the potential to 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?

Less Than Significant with Mitigation. Based upon the review and analysis of potential adverse effects to the environment provided in this Initial Study (including the Project-specific avoidance and minimization measures), the proposed Project would not substantially degrade the overall quality of the environment within the Project area. The analysis provided in Section 2.4 Biological Resource, Section 2.5 Cultural Resources, and Section 2.18 Tribal Cultural Resources, determined potentially significant impacts must be mitigated to a less-than-significant level with incorporation of Project-specific mitigation measures. Therefore, with the implementation of measures BIO-1 and BIO-2, as well as measure CR-1, Project impacts would be considered less than significant with mitigation incorporated.

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)?

Less Than Significant Impact. The proposed Project is located within two (2) miles of four (4) projects planned by the City of Stockton Community Development Department: the LeBaron Ranch Project, the Grider Storage Annexation Project, the Elderberry Residential Development Project, and the Tra Vigne Development Project. The LeBaron Ranch, Elderberry, and Tra Vigne Development projects, located 1.2 miles, 1.5 miles, and 0.7 miles from the proposed Project site, respectively, are each residential subdivision projects with similar features to the proposed Project. An estimated construction date has not yet been determined for these projects; however, each project will contain project-specific construction BMPs and mitigation measures to minimize potential adverse environmental impacts.

The proposed Project is located within an area of the City of Stockton and unincorporated San Joaquin County that is currently under large develop plans. Planned development areas in various planning and

construction phases within the general vicinity of the Project include the LeBaron Ranch Subdivision, Tra Vigne Subdivision, Cannery Park Subdivision, and Bear Creek South. These projects each have independent utility, and each include independent project-specific avoidance, minimization, and mitigation measures to avoid potentially significant impacts to the surrounding environment, or have provided the necessary findings for significant and unavoidable impacts. Therefore, they are independent and have no cumulatively considerable effects related to the proposed Project.

With the incorporation of individual Project-specific mitigation measures for the proposed Project, the Project is not anticipated to result in cumulatively considerable impacts when viewed in connection with these projects or other development projects in the vicinity.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant with Mitigation. Based upon the review and analysis of potential adverse effects on human beings, either directly or indirectly, provided in this Initial Study, the Project would not have environmental effects that would have substantial adverse impacts on human beings. The analysis provided in Section 2.8, Geology and Soils and Section 2.13, Noise, determined that potentially significant impacts must be mitigated to a less than significant level with incorporation of Project-specific mitigation measures.

With the incorporation of mitigation measures GEO-1 and GEO-2, as well as NOI-1 and NOI-2, the potential for Project-related activities to cause substantial adverse effects on human beings would be reduced to a less than significant level. Therefore, Project impacts would be considered less than significant with mitigation incorporated.

FINDINGS

Through compliance with applicable City and County codes, regulations, and regulatory permitting, along with the Project-specific mitigation measures noted previously, the Project will not have a significant impact relating to degradation of the quality of the environment, nor have impacts that are individually limited, but cumulatively considerable; nor have environmental effects which would cause substantial adverse effects, either directly or indirectly, on human beings. Therefore, there are no potentially significant determinations for mandatory findings of significance.

3.0 Comments and Coordination

This chapter summarizes the efforts by Bright Development to identify, address and resolve Project-related issues through early and continuing coordination.

3.1 CONSULTATION AND COORDINATION WITH PUBLIC AGENCIES

Consultation and/or coordination with the following agencies was, or will be initiated for the Project:

- City of Stockton, Community Development Department

3.2 PUBLIC PARTICIPATION

The public comment period for the Project will occur from December 17, 2024 to January 6, 2025. All written comments received by the City of Stockton will be incorporated into the Final IS/MND and added in an appendix. Any additions or corrections to the IS/MND subsequent to public comments will be addressed within the final document.

4.0 Distribution List

A Notice of Availability was prepared and posted with the San Joaquin County Clerk-Recorder Office and distributed to all owners and occupants of property parcels contiguous to the Project area. Additionally, the Draft IS was distributed to the following agencies and interested parties (unless IS hardcopies specified).

City of Stockton, Community Development Department
345 N. El Dorado Street
Stockton, CA 95202

State Government

Governor's Office of Planning and Research – California State Clearinghouse
CEQA Submit Online Database

Local Agencies

San Joaquin County Clerk-Recorder
44 N. San Joaquin Street, Suite 260
Stockton, CA 95202

San Joaquin Local Agency Formation Commission
44 N. San Joaquin Street, Suite 374
Stockton, CA 95202

5.0 List of Preparers

Wood Rodgers, Inc.

Andrew Dellas, MS, PWS, Senior Biologist / Environmental Planner
Tim Chamberlain, Senior Environmental Planner
Eralise Spokely, Assistant Environmental Planner

Bright Development

David Butz, Director of Forward Planning and Development

City of Stockton, Community Development Department

Nicole Moore, LEED-AP, Contract Planner

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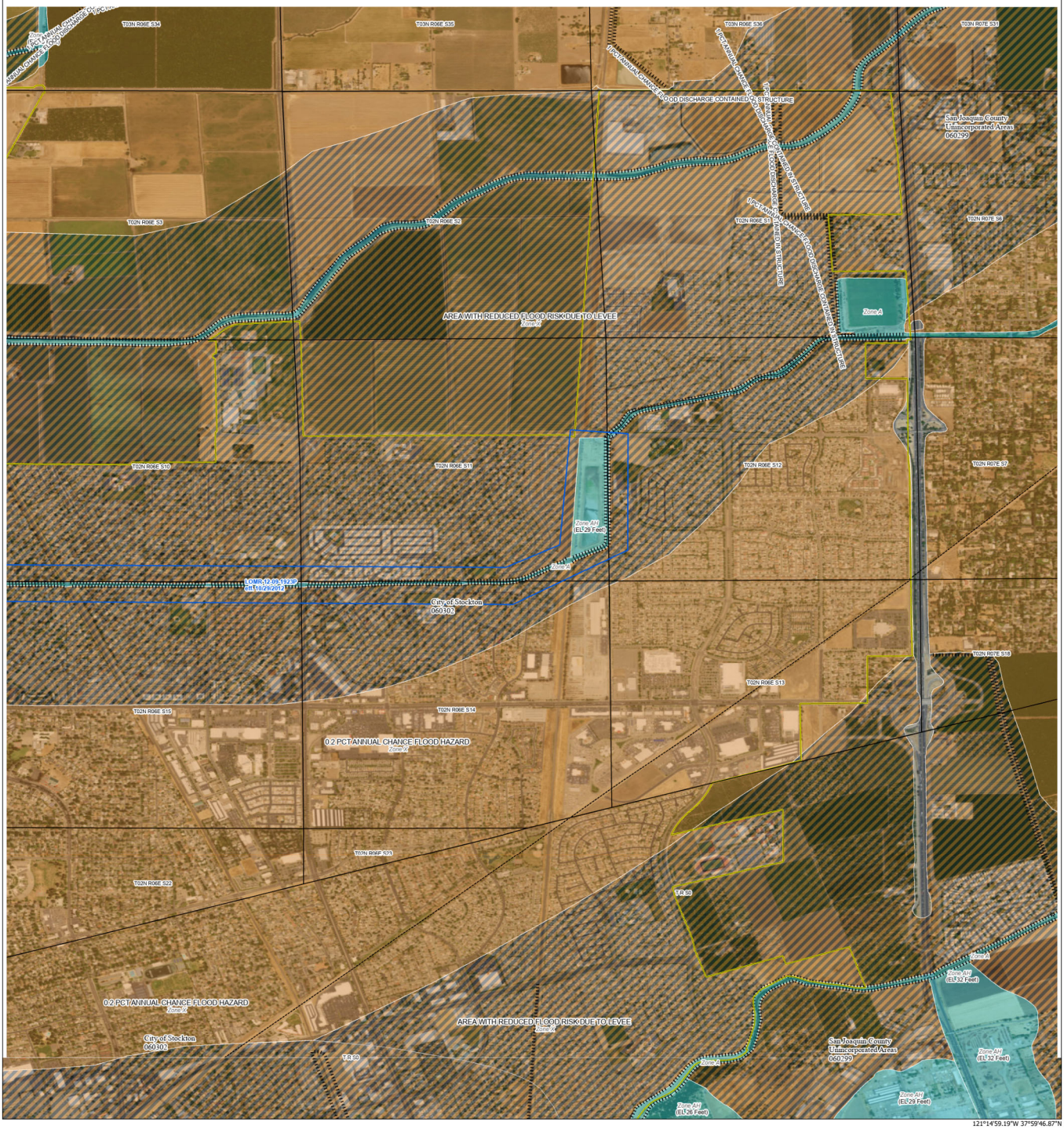
Appendix A.
FEMA FIRM Map

121°18'45.9"W 38°3'58.23"N

EXHIBIT 1



121°14'59.19"W 37°59'46.87"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT 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
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

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

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on 1/29/2024 5:32 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. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

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 was derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/29/2024 at 5:32 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. The flood hazard data inside this boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD 29 to NAVD 88.

SCALE

Map Projection:
GCS. Geodetic Reference System 1980;
Vertical Datum: NAVD88
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 Feet

N

0 105 210 420 630 840 Meters

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
PANEL 320 OF 835

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF STOCKTON	060302	0320
SAN JOAQUIN COUNTY	060299	0320

MAP NUMBER
06077C0320F
EFFECTIVE DATE:
October 16, 200

Appendix B.
Special Status Species Database Query Results

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: 08/13/2024 23:36:06 UTC
Project Code: 2024-0005270
Project Name: Bear Creek Phase 1

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, 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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 IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC 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: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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

PROJECT SUMMARY

Project Code: 2024-0005270
Project Name: Bear Creek Phase 1
Project Type: Residential Construction
Project Description: The proposed project would subdivide a portion of the parcel into 93 single-family residential lots, various open space lots and landscape strips, off-site basin and extension of Tam O' Shanter Drive, private streets, and a gated entry off Morada Lane. Secondary access to the project would be via emergency vehicle access located at the existing West Lane Frontage Road. The proposed project entitlements consist of a vesting tentative map, and Planned Development Permit.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.03616445,-121.29758318344514,14z

Counties: San Joaquin County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 10 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[1], 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.

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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
Riparian Brush Rabbit *Sylvilagus bachmani riparius* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6189	Endangered

REPTILES

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

AMPHIBIANS

NAME	STATUS
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened
Western Spadefoot *Spea hammondii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5425	Proposed Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

CRUSTACEANS

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi*	Endangered

NAME	STATUS

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2246

FLOWERING PLANTS

NAME	STATUS
Fleshy Owl's-clover *Castilleja campestris ssp. succulenta*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8095

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Eralise Spokely
Address: 3741 Douglas Blvd
Address Line 2: 150
City: Roseville
State: CA
Zip: 95661
Email espokely@woodrodgers.com
Phone: 9165035688

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

EXHIBIT 1

Query Criteria: Quad IS (Lodi South (3812113) OR Stockton East (3712182) OR Stockton West (3712183) OR Terminous (3812114) OR Holt (3712184) OR Waterloo (3812112))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali milk-vetch *Astragalus tener var. tener*	PDFAB0F8R1	None	None	G2T1	S1	1B.2
American bumble bee *Bombus pensylvanicus*	IIHYM24260	None	None	G3G4	S2	
big tarplant *Blepharizonia plumosa*	PDAST1C011	None	None	G1G2	S1S2	1B.1
bristly sedge *Carex comosa*	PMCYP032Y0	None	None	G5	S2	2B.1
burrowing owl *Athene cunicularia*	ABNSB10010	None	None	G4	S2	SSC
California black rail *Laterallus jamaicensis coturniculus*	ABNME03041	None	Threatened	G3T1	S2	FP
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California tiger salamander - central California DPS *Ambystoma californiense pop. 1*	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Delta mudwort *Limosella australis*	PDSCR10030	None	None	G5	S2	2B.1
Delta smelt *Hypomesus transpacificus*	AFCHB01040	Threatened	Endangered	G1	S1	
Delta tule pea *Lathyrus jepsonii var. jepsonii*	PDFAB250D2	None	None	G5T2	S2	1B.2
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
green sturgeon - southern DPS *Acipenser medirostris pop. 1*	AFCAA01031	Threatened	None	G2T1	S1	SSC
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S3	
longfin smelt *Spirinchus thaleichthys*	AFCHB03010	Proposed Endangered	Threatened	G5	S1	
Mason's lilaeopsis *Lilaeopsis masonii*	PDAPI19030	None	Rare	G2	S2	1B.1
midvalley fairy shrimp *Branchinecta mesovallensis*	ICBRA03150	None	None	G2	S2S3	

Selected Elements by Common 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
northwestern pond turtle *Actinemys marmorata*	ARAAD02031	Proposed Threatened	None	G2	SNR	SSC
palmate-bracted bird's-beak *Chloropyron palmatum*	PDSCR0J0J0	Endangered	Endangered	G1	S1	1B.1
recurved larkspur *Delphinium recurvatum*	PDRAN0B1J0	None	None	G2?	S2	1B.2
saline clover *Trifolium hydrophilum*	PDFAB400R5	None	None	G2	S2	1B.2
San Joaquin spearscale *Extriplex joaquinana*	PDCHE041F3	None	None	G2	S2	1B.2
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
side-flowering skullcap *Scutellaria lateriflora*	PDLAM1U0Q0	None	None	G5	S1S2	2B.2
song sparrow ("Modesto" population) *Melospiza melodia pop. 1*	ABPBXA3013	None	None	G5T3?Q	S3?	SSC
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	SSC
Suisun Marsh aster *Symphyotrichum lentum*	PDASTE8470	None	None	G2	S2	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S4	
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G1G2	S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T3	S3	
Valley Oak Woodland *Valley Oak Woodland*	CTT71130CA	None	None	G3	S2.1	
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G3	S3	
watershield *Brasenia schreberi*	PDCAB01010	None	None	G5	S3	2B.3
western ridged mussel *Gonidea angulata*	IMBIV19010	None	None	G3	S2	
western spadefoot *Spea hammondii*	AAABF02020	Proposed Threatened	None	G2G3	S3S4	SSC
white-tailed kite *Elanus leucurus*	ABNKC06010	None	None	G5	S3S4	FP
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	PDMAL0H0R3	None	None	G5T3	S3	1B.2

Record Count: 39

EXHIBIT 1

Search Results

19 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3812113:3812114:3712184:3712182:3712183:3812112**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	CA ENDEMIC	DATE ADDED
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2	Yes	1994-01-01
Atriplex cordulata var. *cordulata*	heartscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G3T2	S2	1B.2	Yes	1988-01-01
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	None	None	G1G2	S1S2	1B.1	Yes	1994-01-01
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	G5	S3	2B.3		2010-10-27
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	None	None	G5	S2	2B.1		1994-01-01
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	Yes	2007-05-22
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	FE	CE	G1	S1	1B.1	Yes	1974-01-01
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	Yes	1988-01-01
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	Yes	1988-01-01
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	None	None	G3	S3	4.2	Yes	2001-01-01
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	None	None	G5T3	S3	1B.2	Yes	1974-01-01
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	None	None	G3	S3	4.2	Yes	2001-01-01
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	None	None	G5T2	S2	1B.2	Yes	1974-01-01
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1	Yes	1974-01-01
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	None	None	G4G5	S2	2B.1		1994-01-01
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	None	None	G3	S3	1B.2	Yes	1984-01-01

Scutellaria lateriflora	side-flowering skullcap	Lamiaceae	perennial rhizomatous herb	Jul-Sep	None	None	G5	S2	2B.2		1994-01-01
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2	Yes	1974-01-01
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	Yes	2001-01-01

EXHIBIT 1

Showing 1 to 19 of 19 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2023. Rare Plant Inventory (online edition, v9.5). Website https://www.rareplants.cnps.org [accessed 9 October 2023].

Appendix C.
Species Potential Determinations

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
Amphibian Species						
California tiger salamander - central California DPS	*Ambystoma californiense pop. 1*	FT, ST	Inhabits annual grasslands, oak savanna, mixed woodland edges, and lower elevation coniferous forest. Requires underground refuges, especially ground squirrel burrows, vernal pools, or other seasonal water sources for breeding. Breeding occurs December through February in fish-free ephemeral ponds.	A	No Effect No Take	**Presumed Absent:** The BSA does not contain water resources or fish-free ephemeral ponds required for the species and there are no recent (<20 years) CNDDB occurrences of the species in the project vicinity. The species is presumed absent from the BSA based on the lack of suitable habitat and recent occurrences.
western spadefoot	*Spea hammondii*	SSC	Inhabits open areas with sandy or gravelly soils within mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Burrows underground from most of the year and is active above ground during rainfall. Requires vernal, shallow, temporary pools formed by heavy winter rains for reproduction. These pools must be free of bullfrogs, fish, and crayfish. Breeds from late winter to March.	A	No Take	**Presumed Absent:** The BSA does not contain suitable vernal pool habitat for the species. Additionally, there are no recent (<20 years) CNDDB occurrence of the species in the project vicinity. Due to the lack of suitable habitat and recent regional occurrences, the species is presumed absent from the BSA.
Bird Species						
California black rail	*Laterallus jamaicensis coturniculus*	ST, FP	A rare, yearlong California resident of brackish and freshwater emergent wetlands in delta and coastal locations, including the San Francisco Bay area, Sacramento-San Joaquin Delta, Morro Bay, the Salton Sea, and lower Colorado River. Occurs in tidal emergent wetlands dominated by pickleweed, in brackish marshes dominated by bulrushes with pickleweed, and in freshwater wetlands dominated by bulrushes, cattails, and saltgrass. Species prefers high wetland areas,	A	No Take	**Presumed Absent:** The BSA does not include brackish or freshwater emergent wetlands. The nearest recent (2009) CNDDB occurrence of the species is located approximately 7 miles northwest of the project area near White Slough. Due to the distance of recent occurrences and the lack of suitable habitat, the species is presumed absent from the BSA.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			away from areas experiencing fluctuating water levels. Requires vegetation providing adequate overhead cover for nesting. Eggs are laid from March through June.			
burrowing owl	*Athene cunicularia*	SSC	The species inhabits arid, open areas with sparse vegetation cover such as deserts, abandoned agricultural areas, grasslands, and disturbed open habitats. Can be associated with open shrub stages of pinyon-juniper and ponderosa pine habitats. Nests in old small mammal burrows but may dig own burrow in soft soil. Nests are lined with excrement, pellets, debris, grass, and feathers. The species may use pipes, culverts, and nest boxes, and even buildings where burrows are scarce. Breeding occurs March through August (below 5,300 feet).	HP	No Take	**Low Potential:** No burrowing owl individuals or burrows were observed during biological surveys conducted January 26, 2024. Active ground squirrel burrows were observed within the BSA during surveys which, if vacated, may provide potentially suitable habitat for burrowing owl. The nearest recent (2006) CNDDB occurrence of the species is located approximately 7.6 miles south of the project area. However, there are numerous recent ebrd.org occurrences of the species approximately 1 mile from the project area. Due to the presence of potentially suitable nesting and foraging habitat and the proximity of recent occurrences, along with the absence of available burrows, the species is considered to have a low potential to occur within the BSA.
white-tailed kite	*Elanus leucurus*	FP	Inhabits rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Prefers open grasslands, meadows or marshes for foraging close to isolated, dense-topped trees for nesting and perching. In southern California, will roost in saltgrass and Bermuda grass. Often found near agricultural lands. Nests are placed near the tops of dense oak, willow, or other tree stands. Breeds February through October.	A	No Take	**Presumed Absent:** The BSA does not contain potential habitat for the species as no grasslands, meadows, marshes, or other water sources are present. The nearest recent (2008) CNDDB occurrence of the species is located approximately 6.5 miles northwest of the project area near White Slough. However, the nearest recent (2022) ebird.org occurrence of the species is located within 0.5 miles of the project area. Despite the close proximity of recent occurrences, no habitat is present within the BSA, and the species is presumed absent.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
Swainson's hawk	*Buteo swainsoni*	ST	Inhabits grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, alfalfa or grain fields that support a stable rodent prey base. Breeds march to late August.	HP	No Take	**Moderate-High Potential:** No Swainson's hawk individuals were observed during biological surveys conducted January 26, 2024. However, two nests were observed within separate oak trees: one within the project area near West Lane and one in the agricultural parcel west of the site, approximately 600 feet from the project area. Additionally, the presence of ground squirrels constitutes potential prey base for Swainson's hawk. The nearest recent (2009) CNDDB occurrence of the species is located approximately 1.5 miles west of the project area, and the nearest recent (2017) ebird.org occurrence is located approximately 0.6 miles east of the project area. Due to the presence of potentially suitable nesting and foraging habitat within the BSA and the proximity of recent occurrences, the species is considered to have a moderate to high potential to occur.
tricolored blackbird	*Agelaius tricolor*	ST, SSC	Inhabits freshwater marsh, swamp and wetland communities, but may utilize agricultural or upland habitats that can support large colonies, often in the Central Valley area. Requires dense nesting habitat that is protected from predators, is within 3-5 miles from a suitable foraging area containing insect prey and is within 0.3 miles of open water. Suitable foraging includes wetland, pastureland, rangeland, at dairy farms, and some irrigated croplands (silage, alfalfa, etc.). Nests in dense cattails, tules, willow, blackberry, wild rose, or tall herbs. Nests mid-March	A	No Take	**Presumed Absent:** The BSA does not contain suitable marsh, swamp, or wetland communities, nor does it contain dense vegetation required for nesting. Fallow agricultural land is present within the BSA; however, there are no recent (<20 years) CNDDB occurrences of the species in the project vicinity. The nearest recent (2021) ebird.org is located approximately 2.9 miles west of the project area. The species is presumed absent due to the lack of suitable nesting habitat and the distance of recent regional occurrences.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			to early August, but may extend until October or November in the Sacramento Valley region.			
least Bell's vireo	*Vireo bellii pusillus*	FE, SE	Summer resident of southern California inhabiting low elevation riparian habitats in the vicinity of water and dry river bottoms. Prefers willows, baccharis, mesquite and other low, dense vegetation as nesting site. Forages in dense brush and occasionally tree tops. The species is known to occur in all four southern California national forests, with the largest population in the Los Padres National Forest (below 2,000 feet).	A	No Effect No Take	**Presumed Absent:** The BSA does not contain riparian areas as it primarily encompasses a fallow agricultural field and is not located near a permanent water source. Additionally, there are no recent CNDDB occurrences of the species in the project vicinity, and the nearest recent (2023) is located 20 miles west of the project area on Bradford Island in the Delta. Due to the lack of suitable habitat and the distance of recent regional occurrences, the species is presumed absent from the BSA.
song sparrow (Modesto population)	*Melospiza melodia pop. 1*	SSC	An endemic bird found exclusively in the north-central portion of the Central Valley, with highest densities in the Butte Sink and Sacramento-San Joaquin River Delta. The species is usually found in open brushy habitats, along the borders of ponds or streams, abandoned pastures, desert washes, thickets, or woodland edges. In addition, there is a strong affinity for emergent freshwater marshes dominated by tules and cattails, riparian willow thickets, and valley oak forests with a blackberry understory. Nests found in base of shrubs or clumps of grass, requiring low, dense vegetation for cover, usually near water. Breeds from March through August.	HP	No Take	**Presumed Absent:** The BSA does not contain freshwater marshes, riparian willow thickets, or suitable oak forests. The nearest recent (2009) CNDDB occurrence of the species is located approximately 6.5 miles west of the project area near White Slough. Occurrences are clustered in the Delta area west of the BSA. Due to the lack of suitable habitat and distance of documented occurrences, the species is presumed absent from the BSA.
Fish Species						
steelhead - Central Valley DPS	*Oncorhynchus mykiss irideus pop. 11*	FT	This species is known to occur along most of the California coast line and inhabits freshwater streams and tributaries in northern and central	A	No Effect	**Presumed Absent:** The BSA does not contain any hydrological resources and is not supportive of fish habitat. The nearest recent (2010) CNDDB

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			California. The preferred habitat consists of estuaries, freshwater streams and near shore habitat with productive costal oceans. Spawning occurs in small freshwater streams and tributaries occurs from January through March and could extend into spring. Spawning occurs where cool, well oxygenated water is available year-round. Approximately 550-1,300 eggs are deposited in an area with good intergravel flow. The fry emerge from the gravel about 4-6 six weeks after hatching and remain in shallow protected areas associated with stream margin. Juveniles may remain in freshwater for the rest of their life cycle or return to the ocean. The principal remaining wild populations spawn annually in Deer and Mill Creeks in Tehama County, in the lower Yuba River, and a small population in the lower Stanislaus River.			occurrence of the species indicates a non-specific location within the Calaveras River, located approximately 4.1 miles south of the project area. The species is presumed absent from the BSA based on the lack of suitable habitat and the distance of recent regional occurrences.
green sturgeon - southern DPS	*Acipenser medirostris pop. 1*	FT	Most marine of the sturgeon species. Predominately spawns in the upper Sacramento River, with some recorded in the Rogue River, Klamath and Trinity Rivers (Klamath River basin). In the Sacramento River, green sturgeon spawn above Hamilton City up to Keswick Dam. Known to occupy other river bodies including the lower Feather River; spawning not recorded. Large cobbles preferred for spawning, but may utilize a range of substrates from bedrock to sand. Spawning occurs March-July.	A	No Effect	**Presumed Absent:** The BSA does not contain any hydrological resources and is not supportive of fish habitat. The nearest recent (2019) occurrence of the species is located approximately 6.2 miles south of the project area in the San Joaquin River. Due to the absence of aquatic resources and the distance of recent occurrences, the species is presumed absent from the BSA.
Delta smelt	*Hypomesus transpacificus*	FT, SE	This species is endemic to California and can tolerate a wide range of	A	No Effect No Take	**Presumed Absent:** The BSA does not contain any water resources and is not

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			salinity and temperatures but is most commonly found in brackish waters. Juveniles require shallow waters with food rich sources. Adults require adequate flow and suitable water quality for spawning in winter and spring. Occurs within the Sacramento-San Joaquin Delta and seasonally within the Suisun Bay, Carquinez Strait and San Pablo Bay. Most often occurs in partially saline waters.			supportive of fish habitat. Additionally, there are no recent (<20 years) CNDDB occurrences of the species in the project vicinity. The species is presumed absent due to the lack of aquatic resources in the BSA and recent occurrences.
longfin smelt	*Spirinchus thaleichthys*	FC, ST	Within California, occurs slightly upstream from Rio Vista (on the Sacramento River in the Delta) including the Cache Slough region and Medford Island (on the San Joaquin River in the Delta) through Suisun Bay and Suisun Marsh, the San Pablo Bay, the main San Francisco Bay, South San Francisco Bay,the Gulf of the Farallones, Humboldt Bay, and the Eel river estuary & local coastal areas. Resides in California and are primarily an anadromous estuarine species that can tolerate salinities ranging from freshwater to nearly pure seawater. Prefers temperatures in the range of 16-18°C and salinities ranging from 15-30 ppt. Their spatial distribution within a bay or estuary is seasonally variable. Longfin smelt may also make daily migrations; remaining deep during the day and rising to the surface at night.	A	No Effect No Take	**Presumed Absent:** The BSA does not contain any water resources and is not supportive of fish habitat. Additionally, the nearest recent (2012) CNDDB occurrence of the species is located approximately 6.1 miles south of the project area in the San Joaquin River. Due to the lack of suitable habitat and the distance of recent occurrences, the species is presumed absent from the BSA.
Invertebrate Species						
valley elderberry longhorn beetle	*Desmocerus californicus dimorphus*	FT	Species requires elderberry shrubs as host plants. Typically occurs in moist valley oak woodlands associated with riparian corridors in	A	No Effect	**Presumed Absent:** The BSA does not contain valley oak woodlands or riparian areas, and there are no recent (<20 years) CNDDB occurrences of

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			the lower Sacramento River and upper San Joaquin River drainages. (Sea level-3,000 feet).			the species in the vicinity of the project. Due to the lack of recent occurrences and suitable habitat within the BSA, the species is presumed absent.
monarch butterfly	*Danaus plexippus*	FC	Winter roosts along the coast from northern Mendocino to Baja California. Utilizes wind protected tree groves in proximity to nectar and water sources. Host plants include milkweed species such as Asclepias syriaca, A. incarnara, and A. speciosa. Suitable habitat includes fields, meadows, weedy areas, marshes, and roadsides. Mass adult migrations occur from August to October.	HP	No Effect	**Presumed Absent:** Potential habitat may be present in fields or weedy areas within the BSA. However, the nearest occurrence is a "research grade" inaturalist.org occurrence from 2017, located approximately 3.2 miles southwest of the project area in Swenson Park Golf Course. The species is presumed absent from the BSA due to the distance and low number of recent occurrences.
vernal pool fairy shrimp	*Branchinecta lynchi*	FT	In California inhabits portions of Tehama county, south through the Central Valley, and scattered locations in Riverside County and the Coast Ranges. Species associated with smaller and shallower cool-water vernal pools approximately 6 inches deep and short periods of inundation. In the southernmost extremes of the range, the species occurs in large, deep cool-water pools. Inhabited pools have low to moderate levels of alkalinity and total dissolved solids. The shrimp are temperature sensitive, requiring pools below 50 F to hatch and dying within pools reaching 75 F. Young emerge during cold-weather winter storms.	A	No Effect	**Presumed Absent:** The BSA does not contain vernal pools. Additionally, there are no documented occurrences of the species within the project vicinity or in San Joaquin County. Due to the absence of known occurrences and the lack of suitable habitat, the species is presumed absent from the BSA.
vernal pool tadpole shrimp	*Lepidurus packardi*	FE	Inhabits vernal pools and swales containing clear to highly turbid waters such as pools located in grass bottomed swales of unplowed grasslands, old alluvial soils	A	No Effect	**Presumed Absent:** The BSA does not contain vernal pools. Additionally, there are no recent (<20 years) CNDDB occurrences of the species in the vicinity of the project. Based on the

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			underlain by hardpan, and mud-bottomed pools with highly turbid water.			lack of suitable habitat within the BSA and the lack of recent occurrences, the species is presumed absent.
Mammal Species						
riparian brush rabbit	*Sylvilagus bachmani riparius*	FE, SE	Lives in riparian oak forests with a dense understory of wild rose and native vines. Historically found along the San Joaquin River and once confined to the Caswell Memorial State Park, the species has been reintroduced to parts of its historical range including the San Joaquin River National Wildlife Refuge and portions of the Delta. Grazes in grasslands, meadows, and riparian areas close to the brushy areas. Nest in shallow cavities in the ground. Breeding season is from December to May. Occurs from elevation near sea level to 3000ft.	A	No Effect No Take	**Presumed Absent:** The project area primarily consists of fallow agricultural land and does not contain riparian habitat. Additionally, there have been no documented CNDDB occurrences of the species in San Joaquin County. The species is presumed absent from the BSA based on the lack of suitable habitat and known occurrences in the area.
Reptile Species						
giant gartersnake	*Thamnophis gigas*	FT, ST	A highly aquatic species that inhabits marsh, swamp, wetland (including agricultural wetlands), sloughs, ponds, rice fields, low gradient streams and irrigation/drainage canals adjacent to uplands. Ideal habitat contains both shallow and deep water with variations in topography. Species requires adequate water during the active season (April-November), emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat and mammal burrows estivation. Requires grassy banks and openings in waterside vegetation for basking and higher elevation uplands for cover and refuge from flood waters during winter dormant season.	A	No Effect No Take	**Presumed Absent**: The BSA does not contain suitable aquatic areas for the species, and does not include marshes, swamps, wetlands, sloughs, rice fields, or drainage canals. The nearest recent (2018) CNDDb occurrence of the species is located approximately 6.9 miles southwest of the project area near the San Joaquin River. Due to the lack of aquatic resources required for the species, and the distance of recent occurrences, the species is presumed absent from the BSA.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
			Mating occurs in the spring and females bear live young.			
western pond turtle	*Emys marmorata*	SSC	A fully aquatic turtle of ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with aquatic vegetation. Suitable habitat includes woodland, forests, and grasslands. Requires logs, rocks, cattail mats, and exposed banks for basking. Suitable upland habitat (sandy banks or grassy open field) is required for reproduction, which begins in April and ends with egg laying as late as August (sea level to 4,700 feet).	A	No Effect	**Presumed Absent:** The BSA does not contain suitable water resources to support a fully aquatic species. The nearest recent (2009) CNDDB occurrence of the species is located approximately 12.4 miles northwest of the project area in the South Mokelumne River. The species is presumed absent from the BSA due to the lack of water resources in the area and the distance of recent occurrences.
Plant Species						
alkali milk-vetch	*Astragalus tener var. tener*	CRPR 1B.2	An annual herb inhabiting low ground and alkaline soils of playas, alkaline flats, vernally moist meadows, vernal pools, and valley and foothill grassland of adobe clay. Flowers March-June (0-200 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain suitable habitat for the species and there are no recent occurrences in San Joaquin County. Therefore, the species is presumed absent due to the lack of potential habitat and recent regional occurrences.
big tarplant	*Blepharizonia plumosa*	CRPR 1B.1	An annual herb inhabiting dry hills and plains of valley and foothill grassland communities, often within clay soils. Flowers July-October (0-1,660 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain suitable grassland communities and there are no recent occurrences of the species in the project vicinity. Therefore, the species is presumed absent from the BSA due to the lack of potential habitat and recent regional occurrences.
bristly sedge	*Carex comosa*	CRPR 2B.1	A perennial grasslike herb native to California, inhabiting lake-margins and edges in freshwater wetlands, coastal prairie, valley grassland, foothill grassland, and wetland-riparian communities. Blooms May-September (0-2,050 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain riparian, freshwater wetland, or grassland communities. Additionally, there are no recent occurrences of the species in the vicinity of the project. Therefore, the species is presumed absent from the BSA due to the lack of suitable habitat and recent regional occurrences.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
Delta mudwort	*Limosella australis*	CRPR 2B.1	A perennial stoloniferous herb inhabiting low elevation muddy banks of riparian scrub, freshwater or brackish marshes and swamps, and intertidal flats. Flowers May-August (0-30 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain riparian scrub, freshwater or brackish marshes, or intertidal flats. Additionally, there are no documented occurrences of the species in San Joaquin County. Therefore, the species is presumed absent due to the absence of suitable habitat and recent regional occurrences.
Delta tule pea	*Lathyrus jepsonii var. jepsonii*	CRPR 1B.2	A perennial herb inhabiting freshwater and brackish marshes of coastal and estuarine communities. Flowers May-September (0-20 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain freshwater or brackish marshes. The nearest occurrence of the species is in 2013, located approximately 12.4 miles northwest of the project area. Therefore, the species is presumed absent due to the distance of recent occurrences and lack of suitable habitat.
heartscale	*Atriplex cordulata var. cordulata*	CRPR 1B.2	An annual herb inhabiting saline or alkaline soils of chenopod scrub, meadows and seeps, and sandy valley and foothill grassland communities. Flowers June-July (0-1,840 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain chenopod scrub or grassland communities. Additionally, there have been no documented occurrences of the species in San Joaquin County. Therefore, the species is presumed absent based on the absence of suitable habitat and lack of recent occurrences in the area.
Mason's lilaeopsis	*Lilaeopsis masonii*	CRPR 1B.1	A perennial rhizomatous herb found exclusively in the Sacramento-San Joaquin River Delta and San Francisco Bay. Found in low elevation freshwater and brackish marshes adjacent to surface water. Flowers June-August (0-100 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain freshwater or brackish marshes. The nearest occurrence of the species is from 2005, approximately 7 miles west of the project area near White Slough. The species is presumed absent due to the distance of recent regional occurrences and lack of suitable aquatic habitat.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
palmate-bracted bird's-beak	*Chloropyron palmatum*	CRPR 1B.1	An annual hemiparasitic herb inhabiting alkaline flats, chenopod shrub, and valley and foothill grasslands. Flowers May-August (0-509 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain chenopod scrub or grassland communities. Additionally, there have been no documented occurrences of the species in San Joaquin County. Therefore, the species is presumed absent from the BSA based on the lack of recent regional occurrence and potential habitat.
recurved larkspur	*Delphinium recurvatum*	CRPR 1B.2	A perennial herb inhabiting poorly drained, fine, alkaline soils in chenopod scrub, Atriplex scrub, cismontane woodland, and valley and foothill grassland communities. Flowers March-June (10-2,600 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain chenopod scrub, Atriplex scrub, grasslands, or woodlands. Additionally, there have been no documented occurrences of the species within San Joaquin County. Therefore, the species is presumed absent based on the lack of known occurrences and potential habitat.
saline clover	*Trifolium hydrophilum*	CRPR 1B.2	An annual herb inhabiting mesic, alkaline soils of salt marsh, marshes and swamps, vernal pools, and valley and foothill grasslands. Flowers April-June (0 - 1,000 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain water resources such as marshes, swamps, or vernal pools. Additionally, There have been no documented occurrences of the species within San Joaquin County. Therefore, the species is presumed absent from the BSA due to the lack of aquatic habitat and known occurrences in the vicinity.
San Joaquin spearscale	*Extriplex joaquinana*	CRPR 1B.2	An annual herb inhabiting alkaline soils of chenopod scrub, meadows and seeps, playas and valley and foothill grassland communities. Flowers April-September (0-2,740 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain suitable habitat for the species. Additionally, there have been no documented occurrences of the species in San Joaquin County. Therefore, the species is presumed absent from the BSA based on the lack of potential habitat and known occurrences.

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
Sanford's arrowhead	*Sagittaria sanfordii*	CRPR 1B.2	A perennial rhizomatous herb inhabiting freshwater marshes, swamps, ponds, and ditches. Flowers May-October (0-2,130 feet).	A	No Impact	**Presumed Absent:** The BSA does not include marshes, swamps, ponds, or ditches. There have been no documented occurrences of the species in San Joaquin County. Therefore, the species is presumed absent from the BSA based on the absence of suitable aquatic resources and known occurrences in the vicinity
side-flowering skullcap	*Scutellaria lateriflora*	CRPR 2B.2	A perennial rhizomatous herb inhabiting meadows, freshwater wetlands, freshwater marshes, and wetland-riparian communities. Known in CA from only three occurrences in the Sacramento-San Joaquin Delta. Flowers July-September (0-1,640 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain meadows, wetlands, marshes, or riparian areas. The nearest occurrence of the species is from 2013, approximately 12.4 miles northwest of the project area. Therefore, the species is presumed absent due to the distance of known occurrences.
fleshy owl's-clover	*Castilleja campestris ssp. succulenta*	CRPR 1B.2	An annual hemiparasitic herb inhabiting acidic soils in vernal pool communities. Flowers April-May (150-2,640 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain vernal pools. Additionally, there have been no documented occurrences of the species in San Joaquin County. Therefore, the species is presumed absent from the BSA due to the absence of required habitat and known occurrences.
Suisun Marsh aster	*Symphyotrichum lentum*	CRPR 1B.2	A perennial rhizomatous herb inhabiting wetlands, freshwater marsh, and brackish-marsh communities. Flowers May-November (0-10 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain wetlands or freshwater or brackish marshes. The nearest occurrence is from 2013, approximately 12.4 miles northwest of the project area. Therefore, the species is presumed absent based on the lack of aquatic habitat and distance of recent occurrences

Special Status Species with Potential to Occur in the Project Vicinity

Common Name	Species Name	Status	General Habitat Description	Habitat Present	Effects Determination	Potential for Occurrence/Rationale
watershield	*Brasenia schreberi*	CRPR 2B.3	A perennial rhizomatous aquatic herb inhabiting ponds, slow streams, and freshwater marsh and swamp communities. Flowers June-September (100-7,200 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain ponds, slow streams, marshes, or swamp communities. There have been no occurrences of the species in San Joaquin County. Therefore, the species is presumed absent from the BSA due to the lack of aquatic habitat and the absence of known occurrences in the vicinity.
woolly rose-mallow	*Hibiscus lasiocarpos var. occidentalis*	CRPR 1B.2	A perennial rhizomatous herb inhabiting freshwater wetlands, wet banks, and marsh communities. Often found in-between riprap on levees. Flowers June-September (0-400 feet).	A	No Impact	**Presumed Absent:** The BSA does not contain freshwater wetlands or marsh communities. The nearest occurrence of the species is from 2023, approximately 11.2 miles northwest of the project area near the Woodbridge Ecological Reserve. Therefore, the species is presumed absent due to the lack of aquatic habitat and the distance of recent occurrences.

EXHIBIT 1

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

Special Status Species with Potential to Occur in the Project Vicinity

Federal Designations (FESA, USFWS):		**State Designations (CESA, CDFW):**		**CDFW Designations**
FE: Federally listed, endangered	**FC:** Federal candidate	**SE:** State-listed, endangered	**SCE:** Candidate Endangered	**SSC:** Species of Special Concern
FT: Federally listed, threatened	**DL:** Federally listed, delisted	**ST:** State-listed, threatened	**SCT:** Candidate Threatened	**FP:** Fully Protected

California Native Plant Society (CNPS) California Rare Plant Rank (CRPR)

Note: according to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.

1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
3: Plants about which need more information; a review list.

Plants 1B, 2, and 3 extension meanings:
_.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
_.2 Fairly endangered in California (20-80% occurrences threatened)
_.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)

Habitat Potential
Absent [A] - No habitat present and no further assessment required.
Habitat Present [HP] - Habitat is, or may be present.
Critical Habitat [CH] – Project is within designated Critical Habitat.

Potential for Occurrence Criteria:
Present: Species was observed on site during a site visit or focused survey.
Moderate to High: Habitat strongly associated with the species occurs on site and recent (<20 years extant occurrence(s) recorded within the project vicinity.
Low: Low-quality habitat is present and recent (<20 years) extant occurrence(s) recorded within the project vicinity.
Presumed Absent: No habitat is present within the project area, or low-quality habitat is present but no recent (<20 years) extant occurrence(s) recorded within the project vicinity.

Sources: CDFW 2021; CNDDB 2021; CNPS 2021; Calflora 2021; Jepson, 2nd Ed. 2021; NMFS 2021; USFWS 2021

Appendix D.
Air Quality & Greenhouse Gas Emissions Assessment

Air Quality & Greenhouse Gas Emissions Assessment
Bear Creek Phase 1 Project

Stockton, California

Prepared For:

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November 2023

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LIST OF ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/m^3	micrograms per cubic meter
AB	Assembly Bill
AIA	Air Impact Assessment
BAU	Business as Usual
BPS	Best Performance Standards
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	methane
CI	*Coccidioides immitis*
City	City of Stockton
CM	*Coccidioidomycosis*
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CTG	Control Techniques Guidance
DPM	diesel particulate matter
EO	Executive Order
GHG	greenhouse gas
hp	horsepower
IPCC	Intergovernmental Panel on Climate Change
mph	Miles per hour

LIST OF ACRONYMS AND ABBREVIATIONS

N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	nitrogen dioxide
NO_x	nitric oxides
NSR	New Source Review
LOS	Level of Service
O_3	ozone
OPR	Office of Planning and Research
PG&E	Pacific Gas and Electric
PM	particulate matter
PM_{10}	coarse particulate matter
$PM_{2.5}$	fine particulate matter
ppm	parts per million
Project	Bear Creek Phase 1 Project
RACT	Reasonable Available Control Technology
RCPG	Regional Comprehensive Plan and Guide
ROGs	reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SIP	State Implementation Plan
SJCOG	San Joaquin Council of Governments
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	sulfur dioxide
SO_x	sulfur oxides
SRA	source receptor area
TACs	toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
ZEV	zero-emission vehicles

1.0 INTRODUCTION

This report documents the results of an Air Quality and Greenhouse Gas (GHG) Emissions Assessment completed for the Bear Creek Phase 1 Project (Project), which proposes the construction of 93 single-family residential units on approximately 13.6 acres in the City of Stockton (City), California. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the San Joaquin Valley Air Pollution Control District (SJVAPCD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project Area is located on a single parcel of land at 9473 West Lane in the City of Stockton, California. The site is bound by Ronald McNair Way to the north, with Ronald E. McNair High School beyond; West Lane to the east, with a gasoline dispensing station and residential neighborhoods beyond, residential houses fronting Sutherland Drive to the south, and agricultural lands to the west. The Proposed Project would subdivide a portion of the parcel into 93 single-family residential lots, various open space lots and landscape strips. The Project also proposes an off-site stormwater detention basin and the extension of Tam O' Shanter Drive from its current terminus at the southwest corner of the Project Site to Ronald McNair Way. Once operational, the Project Site would be accessed from Morada Lane. A secondary/emergency vehicle access to the Project would be provided at the existing West Lane Frontage Road.

The Project Site contains a City of Stockton General Plan land use designation of Low Density Residential. The Low Density Residential General Plan designation allows for single-family residential units, duplexes, triplexes, semi-detached patio homes, town homes, public and quasi-public uses, second units, and other similar and compatible uses. The maximum density is 6.1 units per acre based on gross acreage and 8.7 units per acre based on net acreage.

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the San Joaquin Valley Air Basin (SJVAB), which encompasses the Project Site, pursuant to the regulatory authority of the SJVAPCD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 San Joaquin Valley Air Basin

The California Air Resources Board (CARB) divides the State into air basins that share similar meteorological and topographical features. The SJVAB occupies the southern two-thirds of the Central Valley and includes the City of Fresno. The SJVAB is mostly flat, less than 1,000 feet in elevation, and is surrounded on three sides by the Sierra Nevada, Tehachapi, and Coast Range mountains. This bowl-shaped feature forms a natural barrier to the dispersion (spreading over an area) of air pollutants. As a result, the SJVAB is highly susceptible to pollutant accumulation over time (SJVAPCD 2002).

2.1.1.1 Climate and Meteorology

The climate in the SJVAB is strongly influenced by the presence of mountain ranges. The mountains create a partial rain shadow over the valley and block the free circulation of air, trapping stable air in the valley for extended periods. The climate is semi-arid and is characterized by long, hot, dry summers and cool, wet, and foggy winters. Based on historical data obtained from the meteorological station located in Bakersfield, ambient temperatures range from an average minimum of 39˚F in January to an average maximum of 98˚F in July. The average monthly precipitation is approximately 6.24 inches per year, with January and February averaging 1.35 inches. The average daily wind speed is 5.9 miles per hour (mph). The air flow patterns are characterized by one of four directions depending on the season. For example, during the summer, winds are predominantly northwestern (upvalley), while winters typically feature a prevailing stagnant condition that leads to high incidence of valley fog.

2.1.1.2 Atmospheric Stability and Inversions

Stability describes the relative resistance of the atmosphere to vertical motion, which in turn mixes the air. The stability of the atmosphere is dependent on the vertical distribution of temperature with height. Unstable conditions often occur during daytime hours when solar heating warms the lower atmospheric layers while the upper layers remain cold. In contrast, an inversion is a layer of warmer air over a layer of cooler air. Inversions influence the mixing depth of the atmosphere, which is the vertical depth available

for diluting air pollution near the ground. The SJVAB experiences both surface-based and elevated inversions. The shallow surface-based inversions can be present in the morning but are often broken by daytime heating of the air layers near the ground. The deep, elevated inversions occur less frequently than the surface-based inversions but generally result in more severe air stagnation. The surface-based inversions occur more frequently in the fall, and the stronger elevated inversions usually occur during December and January. These naturally occurring conditions can make local air quality significantly worse than it would be without the inversions and the stagnation created by regional weather and topography.

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. Particulate matter (PM) is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants – Summary of Common Sources and Effects		
Pollutant	**Major Manmade Sources**	**Human Health & Welfare Effects**
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

2.1.2.1 Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SJVABare in compliance with the state and federal one- and eight-hour standards.

2.1.2.2 Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas.

NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections and lowers resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, are attributed to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.2.3 Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicles and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.2.4 Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and smaller than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups

considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Most recently, CARB identified diesel particulate matter (DPM) as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.4 Ambient Air Quality

Ambient air quality in the Project Area can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. As described below, the region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$, and PM_{10} (see Table 2-3 below).

The Stockton-University Park air quality monitoring station (702 N Aurora Street), located approximately 5 miles south of the Project Site, monitors ambient concentrations of O_3, PM_{10}, $PM_{2.5}$. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project Area.

Table 2-2 summarizes the published data concerning O_3, $PM_{2.5}$, and PM_{10} from the Stockton-University Park monitoring station. O_3, $PM_{2.5}$, and PM_{10} are the pollutant species most potently affecting the Project region.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2020	2021	2022
O_3 – Stockton – University Park Monitoring Station			
Max 1-hour concentration (ppm)	*	0.040	0.141
Max 8-hour concentration (ppm) (state/federal)	* / *	0.037 / 0.036	0.113 / 0.114
Number of days above 1-hour standard (state/federal)	* / *	0 / 0	1 / 1
Number of days above 8-hour standard (state/federal)	* / *	0 / 0	1 / 1
PM_{10} – Stockton – University Park Monitoring Station			
Max 24-hour concentration (µg/m^3) (state/federal)	* / *	72.2 / 69.5	81.3 / 80.6
Number of days above 24-hour standard (state/federal)	* / *	* / *	25.3 / 0.0
$PM_{2.5}$ – Stockton – University Park Monitoring Station			
Max 24-hour concentration (µg/m^3) (state/federal)	* / *	39.9 / 39.9	51.9 / 51.9
Number of days above federal 24-hour standard	*	*	6.2

Source: CARB 2023
µg/m^3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient (or no) data available to determine the value

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10} and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the San Joaquin County portion of the SJVAB, which encompasses the Project Area, is included in Table 2-3.

Table 2-3. Attainment Status of Criteria Pollutants in the San Joaquin County Portion of the SJVAB

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2022a

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$ and PM_{10} (CARB 2022a).

2.1.5 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site include the residences fronting Sutherland Drive directly to the south. There is also a single family residential property bisecting the Project Site. Ronald E. McNair High School, to the north of the Project Site across Ronald E. McNair Way, is also considered a sensitive receptor. There are also residences to the southwest and southeast of the Project Site.

2.2 Regulatory Framework

2.2.1 Federal

2.2.1.1 Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SJVAB for the criteria pollutants.

2.2.2 State

2.2.2.1 California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

2.2.2.2 California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

The SJVAPCD is the agency primarily responsible for ensuring that national and state ambient air quality standards are not exceeded and that air quality conditions are maintained in the SJVAB. In an attempt to achieve NAAQS and CAAQS and maintain air quality, the air district has completed the following air quality attainment plans and reports, which together constitute the SIP for the portion of the SJVAB encompassing the Project:

- **2007 Ozone Plan**. The Ozone Plan, approved in 2007, contains a comprehensive list of regulatory and incentive-based measures to reduce emissions and particulate matter with the goal of addressing the USEPA's standards. The 2007 Ozone Plan calls for a 75 percent reduction of ozone-forming NOx emissions (SJVAPCD 2007a). These NO_x reductions are preferred and essential to meeting the new 8-hour ozone and $PM_{2.5}$ standards. The plan calls for new and more stringent rules and regulations for stationary sources, new and more stringent tail-pipe emission standards for mobile sources, emission standards for locomotives, local regulations and voluntary measures to reduce and/or mitigate mobile source emissions, incentive-based measures, and alternative compliance programs.
- **2013 Plan for the Revoked 1-Hour Ozone Standard.** The SJVAPCD initially adopted this plan in 2004 to address USEPA's 1-hour ozone standard. Although the USEPA approved the SJVAPCD's 2004 plan in 2010, the USEPA withdrew this approval as a result of a court ruling in November 2012. The SJVAPCD adopted a new plan for the USEPA's revoked 1-hour ozone standard in September 2013 (SJVAPCD 2013).
- **2014 Reasonably Available Control Technology (RACT) Demonstration for the 8-Hour Ozone State Implementation Plan (SIP).** The SJVAPCD adopted the Reasonably Available Control Technology (RACT) Demonstration for the 8-Hour Ozone Standard in 2014. The Clean Air Act requires RACT for certain sources in all nonattainment areas (SJVAPCD 2014).
- **2016 Plan for the 2008 8-Hour Ozone Standard.** The Ozone Plan, approved in 2016, contains a comprehensive list of regulatory and incentive-based measures to reduce emissions and particulate matter with the goal of addressing the USEPA's standards. The plan calls for new and more stringent rules and regulations for stationary sources, new and more stringent tail-pipe emission standards for mobile sources, emission standards for locomotives, local regulations and voluntary measures to reduce and/or mitigate mobile source emissions, incentive-based measures, and alternative compliance programs (SJVAPCD 2016).
- **2020 Reasonably Available Control Technology Demonstration for the 2015 8-Hour Ozone Standard**. The SJVAPCD adopted the RACT Demonstration for the 2015 8-Hour Ozone Standard on June 18, 2020. The Clean Air Act requires RACT for certain sources in all nonattainment areas. The SJVAPCD is required to ensure the USEPA's Control Techniques Guidance (CTG) is being implemented through SJVAPCD regulations. The 43 CTGs were developed to control major sources of emissions (SJVAPCD 2020).

- **2022 Plan for the 2015 8-Hour Ozone Standard**. The SJVAPCD adopted the 2022 Plan for the 2018 8-Hour O_3 on December 15, 2022. The Plan uses extensive science and research, state of the art air quality modeling, and the best available information in developing a strategy to attain the federal 2015 NAAQS for O_3 of 70 parts per billion as expeditiously as practicable. Building on decades of developing and implementing effective air pollution control strategies, this Plan demonstrates that the reductions being achieved by the SJVAPCD and CARB strategy (72 percent reduction in NOx emissions by 2037) ensures expeditious attainment of the 2015 8-hour ozone standard by the 2037 attainment deadline (SJVAPCD 2022).

- **2023 Maintenance Plan and Redesignation Requires for the Revoked 1-Hour Ozone Standard**. In order to terminate anti-backsliding provisions for the revoked 1-hour O_3 standard, including Section 185 nonattainment fees, the SJVAPCD must meet all five criteria of Section 107(d)(3)(E) of the CAA. The 2023 Maintenance Plan and Redesignation Request for the Revoked 1-Hour Ozone Standard includes such requirements as well as all provisions for a maintenance plan. The Maintenance Plan also includes a demonstration that would ensure the area remains in attainment of the 1-hour ozone NAAQS through 2036. Therefore, the SJVAPCD is requesting to be redesignated to attainment for the 1-hour O_3 NAAQS and requesting termination of all anti-backsliding obligations (SJVAPCD 2023).

- **2007 PM_{10} Maintenance Plan and Request for Redesignation.** In 2007, the SJVAPCD adopted the 2007 PM_{10} Attainment Plan to ensure the continued attainment of the USEPA's PM_{10} standard. Since the EPA determined that the air basin had attained the federal PM_{10} standards on October 30, 2006, the valley is designated as an attainment area (SJVAPCD 2007b).

- **2018 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard**. In 2018, the SJVAPCD adopted the 2018 $PM_{2.5}$ Plan to address the USEPA's annual and 24-hour standards. The plan utilizes the best available information to develop a strategy to demonstrate attainment of the federal standard for $PM_{2.5}$. A number of local strategies are included in the plan, including regulations to address stationary sources, use of a risk-based approach to prioritize measures to expedite attainment standards, incentive measures, technology advances, policy efforts to shape new legislation, and public outreach (SJVAPCD 2018).

2.2.2.3 Tanner Air Toxics Act and Air Toxics "Hot Spots" Information and Assessment Act

CARB's statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an Airborne Toxics Control Measure for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the State's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and

Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a Health Risk Assessment and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 Local

2.2.3.1 San Joaquin Valley Air Pollution Control District

The SJVAPCD is the agency primarily responsible for ensuring that NAAQS and CAAQS are not exceeded in the SJVAB and that air quality conditions are maintained. SJVAPCD responsibilities include preparing plans for the attainment of ambient air quality standards, adopting and enforcing air pollution rules, issuing permits for and inspecting stationary air pollution sources, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing state and federal programs and regulations. The SJVAPCD has also adopted various rules and regulations for the control of stationary and area sources of emissions. Provisions applicable to the Proposed Project are summarized as follows:

- **Regulation IV (Visible Emissions), Rule 4101, Nuisance.** The purpose of this rule is to protect the health and safety of the public from source operations that emit or may emit air contaminants or other materials. It prohibits emissions of air contaminants or other materials "which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public."
- **Regulation IV (Visible Emissions), Rule 4601, Architectural Coatings.** The rule limits volatile organic compound (VOC) emissions from architectural coatings and specifies practices for proper storage, cleanup, and labeling requirements. Rule 4601 applies to "any person who supplies, sells, offers for sale, applies, or solicits the application of any architectural coating, or who manufactures, blends or repackages any architectural coating for use within the District." Materials covered by the rule include adhesives, architectural coatings, paints, varnishes, sealers, stains, concrete curing compounds, concrete/masonry sealers, and waterproofing sealers.
- **Regulation IV (Visible Emissions), Rule 4641, Cutback, Slow Curve and Emulsified Asphalt, Paving and Maintenance Operations.** The purpose of this rule is to limit VOC emissions by restricting the application and manufacturing of certain types of asphalt and maintenance operations and applies to the use of these materials. Specifically, certain types of asphalt cannot be used for penetrating prime coat, dust palliative, or other paving: rapid cure and medium cure cutback asphalt, slow cure asphalt that contains more than 0.5 percent of organic compound which evaporates at 500˚F or lower, and emulsified asphalt containing VOC in excess of 3 percent which evaporates at 500˚F or lower.
- **Regulation VIII (Fugitive PM_{10} Prohibitions), Rules 8011–8071, Fugitive PM_{10} Prohibitions.** The purpose of these rules is to limit airborne particulate emissions associated with construction, demolition, excavation, extraction, and other earthmoving activities, as well as with open disturbed

land and emissions associated with paved and unpaved roads. Accordingly, these rules include specific measures to be employed to prevent and reduce fugitive dust emissions from anthropogenic sources.

- **Regulation IX (Mobile and Indirect Sources), Rule 9510, Indirect Source Review.** This rule is the result of state requirements outlined in California Health and Safety Code Section 40604 and the SIP. The air district's SIP commitments were originally contained in the SJVAPCD's 2003 PM_{10} Plan and Extreme Ozone Attainment Demonstration Plans, which presented the SJVAPCD's strategy to reduce PM_{10} and NO_x in order to reach the ambient air pollution standards on schedule, which had been 2010. The plans quantify the reduction from current SJVAPCD rules and proposed rules, as well as state and federal regulations, and then model future emissions to determine whether the SJVAPCD may reach attainment for applicable pollutants. This rule will reduce emissions of NO_x and PM_{10} from new development projects that attract or generate motor vehicle trips. In general, new development contributes to the air pollution problem in the SJVAB by increasing the number of vehicles and vehicle miles traveled. Although newer, cleaner technology is reducing per-vehicle pollution, the emissions increase from new development partially offsets emission reductions gained from technology advances.

  Indirect Source Review applies to larger development projects that have not yet gained discretionary approval. A discretionary permit is a permit from a public agency, which requires some amount of deliberation by that agency, including the potential to require modifications or conditions on the project. In accordance with this rule, developers of larger residential, commercial, and industrial projects are required to reduce smog-forming NO_x and PM_{10} emissions from their projects' baselines as follows (SJVAPCD 2017):

  - 20 percent of construction NO_x exhaust
  - 45 percent of construction PM_{10} exhaust
  - 33 percent of operational NO_x over 10 years
  - 50 percent of operational PM_{10} over 10 years

  These reductions are intended to be achieved through incorporation of on-site reduction measures. If, after implementation of on-site emissions reduction measures project emissions still exceed the minimum baseline reduction, the Indirect Source Review requires a project applicant to pay an off-site fee to the SJVAPCD, which is then used to fund clean-air projects within the air basin.

2.2.3.2 City of Stockton General Plan

The City of Stockton General Plan plays an important role in helping to minimize air pollutant emissions, both through direct regulations on land use activities and through policies and actions that help reduce the need to travel long distances and that promote alternatives to single-occupant vehicular travel. The following relevant and applicable policy provisions from the City's General Plan have been identified for the Project:

- **Action SAF-4.1A.** Require the construction and operation of new development to implement best practices that reduce air pollutant emissions, including:
    - Use of low-emission and well-maintained construction equipment, with idling time limits.
    - Development and implementation of a dust control plan during construction.
    - Installation of electrical service connections at loading docks, where appropriate.
    - Installation of Energy Star-certified appliances.
    - Entering into Voluntary Emissions Reduction Agreements with the San Joaquin Valley Air Pollution Control District.
- **Actin SAF-4.1C.** Require the use of electric-powered construction and landscaping equipment as conditions of project approval when appropriate.
- **Action SAF-4.1D.** Limit heavy-duty off-road equipment idling time to meet the California Air Resources Board's idling regulations for on-road trucks.
- **Action SAF-4.3B.** Coordinate review of development project applications with the San Joaquin Valley Air Pollution Control District to ensure that air quality impacts are consistently identified and mitigated during CEQA review.
- **Action LU-6.2A.** Develop and implement an infill incentive program that encourages infill development through expedited permitting, changes in fee structures, prioritizing infrastructure improvements in infill areas, property owner and/or landlord incentives to maintain property and reduce blight, and/or other strategies. As part of this program, define and prioritize categories of infill types based on land use, and residential density or non-residential intensity.
- **Action LU-6.4C.** Reduce Vehicle Miles Traveled (VMT) per household by planning new housing in closest proximity to employment centers, improving and funding public transportation and ridesharing, and facilitating more direct routes for pedestrians and bicyclists.
- **Action LU-6.6B.** Participate in the San Joaquin Council of Governments' (SJCOG) regional planning programs and coordinate City plans and programs with those of SJCOG, including the Regional Transportation Plan/Sustainable Communities Strategy, among others, and work with non-profit organizations also engaging in these planning programs.

2.2.3.3 San Joaquin Council of Governments Regional Transportation Plan / Sustainable Communities Strategy

The SJCOG region, which encompasses the Project Site, must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions. Specifically, the region has been tasked by CARB to achieve a 16 percent per capita reduction in GHG emissions by 2035. Generally, a reduction of GHG emissions will also equate to a reduction in criteria air pollutants. The 2022 RTP/SCS emphasizes the need for local initiatives that can reduce the region's GHG emissions that contribute to climate change, an issue that is largely outside the focus of local attainment plans. The 2022 RTP/SCS also emphasizes the need for

better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.
2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).
3) Expose sensitive receptors to substantial pollutant concentrations.
4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

2.3.1.1 SJVAPCD Significance Thresholds

The significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the above determinations. The SJVAPCD has identified significance thresholds for use in evaluating project impacts under CEQA. Accordingly, the SJVAPCD -recommended thresholds of significance are used to determine whether construction of the Proposed Project would result in a significant air quality impact. The SJVAPCD established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 2-4.

Table 2-4. SJVAPCD Regional Significance Thresholds – Tons per Year

Air Pollutant	Construction Activities	Operations
ROG	10	10
CO	100	100
NO_x	10	10
SO_x	27	27
PM_{10}	15	15
$PM_{2.5}$	15	15

Source: SJVAPCD 2015a

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to 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 individual emissions

exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

2.3.2 Methodology

Air quality impacts are assessed in accordance with methodologies recommended by the SJVAPCD. Where criteria air pollutant quantification is required, emissions are modeled using the California Emissions Estimator Model (CalEEMod), version 2022.1 (CAPCOA 2022). CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions are calculated primarily using CalEEMod model defaults for San Joaquin County, including the equipment needed for building construction and painting. Operational emissions are also calculated using CalEEMod model defaults for San Joaquin County. Refer to Attachment A for modeling data outputs.

2.3.3 Impact Analysis

2.3.3.1 Project Construction-Generated Criteria Air Quality Emissions

Construction Significance Analysis

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. The basic sources of short-term emissions that will be generated through construction of the Proposed Project will be from grading activities and the from the operation of the construction vehicles (i.e., trenchers, dump trucks). Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Project construction activities would be subject to SJVAPCD Regulation VIII, which specifies the following measures to control fugitive dust:

- Apply water to unpaved surfaces and traffic areas to maintain a minimum of 12 percent moisture content as measured using the ASTM D-2216-98 method.
- Use nontoxic chemical or organic dust suppressants on unpaved roads and traffic areas.
- Limit or reduce vehicle speed on unpaved roads and traffic areas to a maximum 15 miles per hour.
- Maintain areas in a stabilized condition by restricting vehicle access.
- Install wind barriers.
- During high winds, cease outdoor activities that disturb the soil.
- Keep bulk materials sufficiently wet when handling.
- Store and handle materials in a three-sided structure.

- When storing bulk materials, apply water to the surface or cover the storage pile with a tarp.
- Don't overload haul trucks. Overloaded trucks are likely to spill bulk materials.
- Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions.
- Clean the interior of cargo compartments on emptied haul trucks prior to leaving a site.
- Prevent trackout by installing a trackout control device at all access points to paved public roads.
- Clean up trackout at least once a day. If along a busy road or highway, clean up trackout immediately.
- Monitor dust-generating activities and implement appropriate measures for maximum dust control.

Construction-generated emissions associated with the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2-5. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SJVAPCD's thresholds of significance.

Table 2-5. Construction-Related Emissions

Construction Year	Pollutant (tons per year)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Construction Calander Year One	0.17	1.61	1.66	<0.00	0.54	0.29
Construction Calander Year Two	0.72	1.24	1.67	<0.00	0.09	0.06
SJVAPCD Significance Threshold	*10 tons/year*	*10 tons/year*	*100 tons/year*	*27 tons/year*	*15 tons/year*	*15 tons/year*
Exceed SJVAPCD Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction emissions are applied based on the required implementation of SJVAPCD Regulation VIII. The specific air pollutant-reduction measures applied in CalEEMod include: watering unpaved surfaces two times per day with a maximum vehicle speed of 25 mph, and cleaning paved public roads.

As shown in Table 2-5, emissions generated during Project construction would not exceed the SJVAPCD's thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard, and no health effects from Project criteria pollutants would occur.

In addition to the SJVAPCD criteria air pollutant thresholds, SJVAPCD Rule 9510, Indirect Source Review, aims to fulfill the District's emission reduction commitments in the PM_{10} and Ozone Attainment Plans. This rule applies to the following construction projects within the city per City of Stockton General Plan Action SAF-4.3B, which requires that the City coordinate review of development project applications with the SJVAPCD to ensure that air quality impacts are consistently identified and mitigated during CEQA review:

- 50 residential units
- 2,000 square feet of commercial space
- 25,000 square feet of light industrial space
- 100,000 square feet of heavy industrial space
- 20,000 square feet of medical office space
- 39,000 square feet of general office space
- 9,000 square feet of educational space
- 10,000 square feet of government space
- 20,000 square feet of recreational space; or
- 9,000 square feet of space not identified above.

The Project is proposing the construction of more than 50 residential units. Therefore, the Proposed Project is required to comply with Rule 9510, which would result in a reduction of NOx and PM_{10} emissions compared with the emissions identified in Table 2-5. In accordance with Rule 9510, the Project applicant is required to prepare a detailed air impact assessment (AIA) for submittal to the SJVAPCD, which (1) demonstrates reduction of NO_x emissions from the Project's baseline by 20 percent and PM_{10} emissions from the Project's baseline by 45 percent, or (2) documents the payment of all applicable fees to support programs that reduce emissions. Off-site emissions reduction fees (offsite fee) are required for projects that do not achieve the required emissions reductions through onsite emission reduction measures. To determine how an individual project would satisfy Rule 9510, the Project must submit the AIA to the SJVAPCD as early as possible, but no later than prior to the Project's final discretionary approval, to identify the Project's baseline unmitigated emissions inventory for indirect sources (i.e., on-site exhaust emissions from construction activities).

Criteria pollutant emissions generated during Project construction would not result in a violation of air quality standards. Since the Project's emissions do not exceed SJVAPCD thresholds, no exceedance of the ambient air quality standards would occur, and no health effects from Project criteria pollutants would occur.

2.3.3.2 Project Operations Criteria Air Quality Emissions

Operational Significance Analysis

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROGs and NO_X. Project-generated increases in emissions would be predominantly associated with motor vehicle use. Long-term operational emissions attributable to the Project are identified in Table 2-6 and compared to the operational significance thresholds promulgated by the SJVAPCD.

Table 2-6. Operational-Related Emissions

Emission Source	Pollutant (tons per year)					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Annual Emissions						
Area	0.81	0.04	0.49	<0.00	<0.00	<0.00
Energy	0.01	0.12	0.05	<0.00	0.01	0.01
Mobile	0.63	0.71	5.16	0.01	1.11	0.29
Total:	**1.45**	**0.87**	**5.70**	**0.01**	**1.12**	**0.30**
SJVAPCD Significance Threshold	*10 tons/year*	*10 tons/year*	*100 tons/year*	*27 tons/year*	*15 tons/year*	*15 tons/year*
Exceed SJVAPCD Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.
Notes: Emission projections predominately based on the area of impact identified on the Project's site plans.

As shown in Table 2-6, the Project's emissions would not exceed any SJVAPCD thresholds for any criteria air pollutants during operation.

As previously mentioned, the Project is subject to SJVAPCD Rule 9510. SJVAPCD Rule 9510 is intended to fulfill the region's emission reduction commitments in the SJVAPCD PM_{10} and Ozone Attainment Plans. The Proposed Project would be required to consult with the SJVAPCD regarding the specific applicability of Rule 9510 in relation to Project operations. In accordance with Rule 9510, the Project applicant would be required to prepare a detailed AIA for submittal to the SJVAPCD demonstrating the reduction from the Project's baseline of NO_x and PM_{10} emissions. Specifically, the AIA will demonstrate how operational emissions of NO_x are reduced by a minimum of 33.3 percent and operational emissions of PM_{10} are reduced by a minimum of 50 percent over a period of ten years. The Project would demonstrate compliance with Rule 9510, including payment of all applicable fees, before issuance of the first building permit.

As identified in Table 2-3, the San Joaquin County portion of the SJVAPCD is listed as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, $PM_{2.5}$

and PM_{10} (CARB 2022). O_3 is a health threat to persons who already suffer from respiratory diseases and can cause severe ear, nose and throat irritation and increases susceptibility to respiratory infections. PM can adversely affect the human respiratory system. As shown in Table 2-6, the Proposed Project would result in increased emissions of the O_3 precursor pollutants ROG, NOx, PM_{10}, and $PM_{2.5}$, however, the correlation between a project's emissions and increases in nonattainment days, or frequency or severity of related illnesses, cannot be accurately quantified. The overall strategy for reducing air pollution and related health effects in the SJVAPCD is contained in the various air quality plans (see section 2.2.2.2, *California State Implementation Plan*). These air quality plans provide control measures that reduce emissions to attain federal ambient air quality standards by their applicable deadlines such as the application of available cleaner technologies, best management practices, incentive programs, as well as development and implementation of zero and near-zero technologies and control methods. The CEQA thresholds of significance established by the SJVAPCD are designed to meet the objectives of the SJVAPCD air quality planning efforts and in doing so achieve attainment status with state and federal standards. As noted above, the Project would increase the emission of these pollutants, but would not exceed the thresholds of significance established by the SJVAPCD for purposes of reducing air pollution and its deleterious health effects.

2.3.3.3 Conflict with Applicable SJVAPCD Air Quality Management Plans

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the NAAQS and CAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously mentioned, the Project Area is located within the SJVAB, which is under the jurisdiction of the SJVAPCD. The SJVAPCD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SJVAB is in nonattainment. In order to reduce such emissions, the SJVAPCD prepared the 2007 Ozone Plan, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2014 Reasonably Available Control Technology (RACT) Demonstration for the 8-Hour Ozone State Implementation Plan, 2016 Plan for the 2008 8-Hour Ozone Standard, 2020 RACT Demonstration for the 2015 8-Hour Ozone Standard, 2022 Plan for the 2015 8-Hour Ozone Standard, 2023 Maintenance Plan and Redesignation Requires for the Revoked 1-Hour Ozone Standard, 2007 PM_{10} Maintenance Plan and Request for Redesignation, and 2018 Moderate Area Plan for the 2012 $PM_{2.5}$ Standard. These plans collectively address the air basin's nonattainment status with the national and state O_3 standards as well as particulate matter by establishing a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. Pollutant control strategies are based on the latest scientific and technical information and planning assumptions. According to the SJVAPCD (2015a), the established thresholds of significance for criteria pollutant emissions are based on SJVAPCD New Source Review (NSR) offset requirements for stationary sources. Stationary sources in the SJVAB are subject to some of the most stringent regulatory

requirements in the nation. Emission reductions achieved through implementation of SJVAPCD offset requirements are a major component of the District's air quality planning efforts. Thus, projects with emissions below the thresholds of significance for criteria pollutants are determined to "Not conflict or obstruct implementation of the District's air quality plan" (SJVAPCD 2015a).

As shown in Tables 2-5 and 2-6, Project construction and operations would not generate emissions that would exceed SJVAPCD significance thresholds and therefore would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new air quality violations. The Project would be consistent with the SJVAPCD air quality planning efforts.

2.3.3.4 Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Site include the residences fronting Sutherland Drive directly to the south. There is also a single-family residential property bisecting the Project Site. Ronald E. McNair High School, to the north of the Project Site across Ronald E. McNair Way, is also considered a sensitive receptor. There are also residences to the southwest and southeast of the Project Site.

Construction-Generated Air Contaminants

Construction of the Project would result in temporary, short-term Project-generated emissions of DPM, ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment; soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the SJVAB which encompasses the Project Area is designated as nonattainment for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for state O_3, $PM_{2.5}$ and PM_{10} standards (CARB 2022a). Thus, existing O_3 $PM_{2.5}$, and PM_{10} levels in the SJVAB are at unhealthy levels during certain periods. However, as shown in Table 2-5, the Project would not exceed the SJVAPCD significance thresholds for construction emissions and therefore no regional health effects from Project criteria pollutants would occur.

The health effects associated with O_3 are generally associated with reduced lung function. O_3 is not emitted directly into the air but is formed through complex chemical reactions between precursor emissions of ROG and NOx in the presence of sunlight. The reactivity of O_3 causes health problems because it damages lung tissue, reduces lung function and sensitizes the lungs to other irritants. Scientific evidence indicates that ambient levels of O_3 not only affect people with impaired respiratory systems, such as asthmatics, but healthy adults and children as well. Exposure to O_3 for several hours at relatively low concentrations has been found to significantly reduce lung function and induce respiratory inflammation in normal, healthy people during exercise. This decrease in lung function generally is accompanied by symptoms including chest pain, coughing, sneezing and pulmonary congestion.

Studies show associations between short-term O_3 exposure and non-accidental mortality, including deaths from respiratory issues. Studies also suggest long-term exposure to O_3 may increase the risk of respiratory-related deaths. The concentration of O_3 at which health effects are observed depends on an individual's sensitivity, level of exertion (i.e., breathing rate), and duration of exposure. Studies show large individual differences in the intensity of symptomatic responses, with one study finding no symptoms to the least responsive individual after a 2-hour exposure to 400 parts per billion of O_3 and a 50 percent decrement in forced airway volume in the most responsive individual. Although the results vary, evidence suggests that sensitive populations (e.g., asthmatics) may be affected on days when the 8-hour maximum O_3 concentration reaches 80 parts per billion. Because the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NOx) in excess of the SJVAPCD thresholds, which are set to be protective of human health and account for cumulative emissions in the SJVAB, the Project is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not involve construction activities that would result in CO emissions in excess of the SJVAPCD thresholds, which are set to be protective of human health and account for cumulative emissions in the SJVAB. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM and it contains $PM_{2.5}$ as a subset. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the SJVAPCD's thresholds. The increases of these pollutants generated by the Proposed Project would not on their own generate an increase in the number of days exceeding the NAAQS or CAAQS standards. Therefore, PM_{10} and $PM_{2.5}$ emissions, when combined with the existing PM emitted regionally, would have minimal health effect on people located in the immediate vicinity of the Project Site. Additionally, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects from these pollutants.

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Valley Fever

Coccidioidomycosis (CM), often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is

caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus (an organism that grows and feeds on dead or decaying organic matter) lives as a saprophyte in dry, alkaline soil. When weather and moisture conditions are favorable, the fungus "blooms" and forms many tiny spores that lie dormant in the soil until they are stirred up by wind, vehicles, excavation, or other ground-moving activities and become airborne. Agricultural workers, construction workers, and other people who work outdoors and who are exposed to wind and dust are more likely to contract Valley Fever. Children and adults whose hobbies or sports activities expose them to wind and dust are also more likely to contract Valley Fever. After the fungal spores have settled in the lungs, they change into a multicellular structure called a spherule. Fungal growth in the lungs occurs as the spherule grows and bursts, releasing endospores, which then develop into more spherules.

Valley fever (Coccidioidomycosis) is found in California, including San Joaquin County. In about 50 to 75 percent of people, valley fever causes either no symptoms or mild symptoms and those infected never seek medical care; when symptoms are more pronounced, they usually present as lung problems (cough, shortness of breath, sputum production, fever, and chest pains). The disease can progress to chronic or progressive lung disease and may even become disseminated to the skin, lining tissue of the brain (meninges), skeleton, and other body areas.

When soil containing this fungus is disturbed by ground-disturbing activities such as digging or grading, by vehicles raising dust, or by the wind, the fungal spores get into the air. When people breathe the spores into their lungs, they may get valley fever. Fungal spores are small particles that can grow and reproduce in the body. The highest infection period for valley fever occurs during the driest months in California, between June and November. Infection from valley fever during ground-disturbing activities can be partially mitigated through the control of Project-generated dust. As noted, Project-generated dust would be controlled by adhering to SJVAPCD dust-reducing measures (Regulation VIII), which includes the preparation of a SJVAPCD-approved dust control plan describing all fugitive dust control measures that are to be implemented before, during, and after any dust-generating activity.

With conformance with SJVAPCD Regulation VIII, dust from the construction of the Project would not add significantly to the existing exposure level of people to this fungus, including construction workers. In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There are no stationary sources associated with the operations of the Project; nor would the Project attract additional heavy-duty truck sources, a major source of DPM, that spend long periods queuing and idling at the site as the Proposed Project would only include residential land uses. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors. The Project would not have a high carcinogenic or non-carcinogenic risk during operation.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration across the entire state is now designated as attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. A study conducted in Los Angeles County by the South Coast Air Quality Management District (SCAQMD) is helpful in showing the amount of traffic necessary to result in a CO Hotspot. The SCAQMD analysis prepared for CO attainment in the SCAQMD's 1992 Federal Attainment Plan for Carbon Monoxide in Los Angeles County, and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). To establish a more accurate record of baseline CO concentrations affecting Los Angeles County, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other Air Districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or

24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

Furthermore, the SJVAPCD Guidance for Assessing and Mitigating Impacts (2015b) includes the following CO hot spot criteria:

If neither of the following criteria are met at all intersections affected by the developmental project, the Project will result in no potential to create a violation of the CO standard:

- A traffic study for the project indicates that the Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to LOS E or F; or
- A traffic study indicates that the project will substantially worsen an already existing LOS F on one or more streets or at more or more intersections in the project vicinity.

The Proposed Project is anticipated to result in a maximum of 878 vehicle trips per day. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values. Furthermore, all of the existing intersections in the Project vicinity currently operate at an acceptable LOS and the addition of Project traffic would not result the reduction of LOS to unacceptable levels at any of these intersections.

2.3.3.5 Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the Project Area. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

According to the SVJAPCD, land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified by the SJVAPCD as being associated with odors.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are CO_2, methane (CH_4), and N_2O. Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. More specifically, experts agree that human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. (Intergovernmental Panel on Climate Change [IPCC] 2023).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Despite the sequestration of CO_2, human-caused climate

change is already causing damaging effects, including weather and climate extremes in every region across the globe (IPCC 2023).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.

Sources: USEPA 2023a, 2023b, 2023c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In 2022, CARB released the 2022 edition of the California GHG inventory covering calendar year 2020 emissions. In 2020, California emitted 369.2 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2020, accounting for approximately 38 percent of total GHG emissions in the state. Continuing the downward trend from previous years, transportation emissions decreased 27 million metric tons of CO_2e in 2020, though the intensity of this decrease was most likely from light duty vehicles after shelter-in-place orders were enacted in response to the COVID-19 pandemic. Emissions from the electricity sector account for 16 percent of the inventory and have remained at a similar level as in 2019 despite a 44 percent decrease in in-state hydropower generation (due to below average precipitation levels), which was

more than compensated for by a 10 percent growth in in-state solar generation and cleaner imported electricity incentivized by California's clean energy policies. California's industrial sector accounts for the second largest source of the state's GHG emissions in 2020, accounting for 23 percent (CARB 2022b).

3.2 Regulatory Framework

3.2.1 State

3.2.1.1 Executive Order S-3-05 and B-30-15

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the State. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

On April 20, 2015, Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's executive order aligns California's GHG reduction targets with those of leading international governments such as the European Union, which adopted the same target in October 2014. California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

3.2.1.2 Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2022 Scoping Plan Update, outlines strategies and actions to reduce greenhouse gas emissions in California. The plan focuses on achieving the state's goal of reaching carbon neutrality by 2045 and reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030. The plan includes a range of strategies across various sectors, including transportation, industry, energy, and agriculture. Some of the key strategies include transitioning to zero-emission vehicles, expanding renewable energy sources, promoting sustainable land use practices, implementing a low-carbon fuel standard, and reducing emissions from buildings. Additionally, the plan addresses equity and environmental justice by prioritizing investments in

communities most impacted by pollution and climate change. The plan also aims to promote economic growth and job creation through the transition to a low-carbon economy.

3.2.1.3 Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include §38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

3.2.1.4 Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

3.2.1.5 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2022 California Building Codes include provisions related to energy efficiency to reduce energy consumption and greenhouse gas emissions from buildings. Some of the key energy efficiency components of the codes are:

1. Energy Performance Requirements: The codes specify minimum energy performance standards for the building envelope, lighting, heating and cooling systems, and other components.
2. Lighting Efficiency: The codes require that lighting systems meet minimum efficiency standards, such as the use of energy-efficient light bulbs and fixtures.
3. Heating, Ventilation, and Air Conditioning (HVAC) Systems: The codes establish requirements for HVAC systems, including the use of high-efficiency equipment, duct sealing, and controls.
4. Building Envelope: The codes include provisions for insulation, air sealing, glazing, and other building envelope components to reduce energy loss and improve indoor comfort.
5. Renewable Energy: The codes encourage the use of renewable energy systems, such as photovoltaic panels and wind turbines, to reduce dependence on non-renewable energy sources.
6. Commissioning: The codes require the commissioning of building energy systems to ensure that they are installed and operate correctly and efficiently.

Overall, the energy efficiency provisions of the 2022 California Building Codes aim to reduce the energy consumption of buildings, lower energy costs for building owners and occupants, and reduce the environmental impact of the built environment. The 2022 Building Energy Efficiency Standards improve upon the 2019 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The exact amount by which the 2022 Building Codes are more efficient compared to the 2019 Building Codes would depend on the specific provisions that have been updated and the specific building being considered. However, in general, the 2022 Building Codes have been updated to include increased requirements for energy efficiency, such as higher insulation and air sealing standards, which are intended to result in more efficient buildings. The 2022 standards are a major step toward meeting Zero Net Energy.

3.2.2 Local

3.2.2.1 San Joaquin Valley Air Pollution Control District

The SJVAPCD provides a tiered approach in assessing significance of project specific GHG emission increases. Projects implementing Best Performance Standards (BPS) would be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual (BAU), is required to determine that a project would have a less than cumulatively significant impact. The BAU approach was developed consistent with the GHG emission reduction targets established in the Scoping Plan. However, the BAU portion of the tiered approach is problematic based on the Center for Biological Diversity v. Department of Fish & Wildlife (2015) 62 Cal.4th 204, 225, 229 (also known as the "Newhall Ranch" decision). In the Newhall Ranch decision, the California Supreme Court explained that use of a BAU method, in which a project that demonstrates certain GHG reductions below the Scoping Plan's BAU scenario, is an acceptable methodology for determining potentially significant GHG emissions effects for purposes of CEQA; however, such a BAU approach must include substantial evidence showing how a project-level reduction in GHG emissions "in comparison to business as usual is consistent with achieving A.B. 32's statewide goal of a 29 percent reduction from business as usual." Examining the Newhall Ranch project's EIR, the Court further explained that:

> *[a]t bottom, the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas emissions reduction effort required by the state as a whole, and attempting to use that method, without consideration of any changes or adjustments, for a purpose very different from its original design: To measure the efficiency and conservation measures incorporated in a specific land use development proposed for a specific location. The EIR simply assumes that the level of effort required in one context, a 29 percent reduction from business as usual statewide, will suffice in the other, a specific land use development. From the information in the administrative record, we cannot say that conclusion is wrong, but neither can we discern the contours of a logical argument that it is right. The analytical gap left by the EIR's failure to establish, through substantial evidence and reasoned explanation, a quantitative equivalence between the Scoping Plan's statewide comparison and the EIR's own project-level comparison deprived the EIR of its "sufficiency as an informative document." (Center for Biological Diversity v. Department of Fish & Wildlife (2015) 62 Cal.4th 204, 227, internal citations omitted.)*

Thus, given this Project's scope and relatively low projected GHG emissions, the project-level to state-level BAU comparison required in the Newhall Ranch decision would be inappropriate for the Project's analysis of GHG emissions. The BAU approach is further inapt because the SJVAPCD thresholds are based on statewide GHG-reduction targets for the year 2020, and the Project would be implemented in the year 2024 at the earliest.

3.2.2.2 San Joaquin Council of Governments Regional Transportation Plan / Sustainable Communities Strategy

The SJCOG region, which encompasses the Project Site, must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions. Specifically, the region has been tasked by CARB to achieve a 16 percent per capita reduction in GHG emissions by 2035. The 2022 RTP/SCS emphasizes the need for local initiatives that can reduce the region's GHG emissions that contribute to climate change, an issue that is largely outside the focus of local attainment plans. The 2022 RTP/SCS also emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

3.2.2.3 City of Stockton Climate Action Plan

The City of Stockton adopted a Climate Action Plan (CAP) in 2014, in compliance with a Settlement Agreement with the California Attorney General and the Sierra Club related to the City's then-adopted General Plan 2035 and associated EIR. The CAP "outlines a framework to feasibly reduce community GHG emissions in a manner that is supportive of AB 32 and is consistent with the Settlement Agreement and 2035 General Plan policy". The CAP set a GHG emission reduction target of 10 percent below 2005 GHG emission levels by 2020, or approximately 20.6 percent below 2020 "business as usual" GHG emissions (i.e., 2020 GHG emissions that are unmitigated), which is the level by which the state had set its 2020 emission reduction goal. Approximately 83 percent of the reductions needed to achieve the City's GHG reduction goal were achieved through state-level programs, and 17 percent were achieved through City-level programs (City of Stockton 2014). The CAP did not set any GHG emission reduction targets beyond 2020. Although the CAP stated that the City would conduct planning for the post-2020 period, the CAP has not been updated. An updated community GHG inventory was planned during fiscal year 2021-22, but no other actions have been taken or proposed, and the planned inventory has not yet been conducted. While the CAP's emission reduction targets are no longer applicable, GHG emission reduction measures in the adopted CAP remain valid.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases

The Appendix G thresholds for GHG emissions do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.

3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130). As a note, the CEQA Guidelines were amended in response to Senate Bill 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements to avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to

implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a less than significant finding for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. As previously described, portions of the SJVAPCD significance thresholds are problematic based on the Newhall Ranch decision. Therefore, for the purposes of this analysis the Project is evaluated for consistency with the California AB 32 Scoping Plan, which sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045. Additionally, the Project is analyzed for consistency with the San Joaquin COG 2022 RTP/SCS, which seeks to achieve a 16 percent per capita reduction in GHG emissions generated by passenger vehicles by the end of 2035 (CARB 2022).

3.3.2 Methodology

Where GHG emission quantification is required, emissions are modeled using CalEEMod, version 2022.1. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions are calculated primarily using CalEEMod model defaults for San Joaquin County, including the equipment needed for building construction and painting. Operational GHG emissions are also calculated using CalEEMod model defaults for San Joaquin County. Refer to Attachment A for modeling data outputs.

3.3.3 Project Emissions

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 3-2. Construction-Related Greenhouse Gas Emissions	
Emissions Source	**CO_2e (Metric Tons/ Year)**
Construction Calander Year One	293
Construction Calander Year Two	305
Total Construction	**598**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.

As shown in Table 3-2, Project construction would result in the generation of a maximum of approximately 598 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. Furthermore, GHG emissions generated by the construction sector have been declining in recent years. For instance, construction equipment engine efficiency has continued to improve year after year. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower (hp) and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 hp and increasingly more stringent Tier 2 and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been manufactured to Tier 3 standards. Tier 3 engine standards reduce precursor and subset GHG emissions such as nitrogen oxide by as much as 60 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which were phased in over the period of 2008-2015. The Tier 4 standards require that emissions of nitrogen oxide be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later will be manufactured to Tier 4 standards.

In addition, the California Energy Commission recently released the 2022 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). The 2022 updates to the Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions, and alterations to existing buildings. For instance, owners/builders of construction projects have been required to divert (recycle) 65 percent of construction waste materials generated during the project construction phase. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills, which is a source of CH_4, and reducing demand for natural resources.

Long-term operational GHG emissions attributable to the Project are identified in Table 3-3.

Table 3-3. Operational-Related Greenhouse Gas Emissions	
Emissions Source	**CO_2e (Metric Tons/ Year)**
Area	38
Energy	218
Mobile	1,195
Waste	26
Water	9
Refrigerants	<0
Total	**1,486**

Source: CalEEMod version 2022.1. Refer to Attachment A for Model Data Outputs.

As shown in Table 3-3 Project operations would result in the increased generation of 1,486 metric tons of CO_2e per year.

3.3.4 Impact Analysis

3.3.4.1 Generation of Greenhouse Gas Emissions Resulting in Conflicts with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

San Joaquin COG Regional Transportation Plan/Sustainable Communities Strategy

San Joaquin COG's 2022 RTP/SCS is required to meet all federal transportation conformity requirements, including regional emissions analysis, financial constraint, timely implementation of transportation control measures, and interagency consultation and public involvement (42 U.S.C. §7401 et seq.). The San Joaquin COG region must achieve specific federal air quality standards and is required by state law to lower regional GHG emissions. Specifically, the region has been tasked by CARB to achieve a 16 percent below 2005 per capita reduction by the end of 2035.

As part of the state's mandate to reduce per-capita GHG emissions from automobiles and light trucks, the 2022 RTP/SCS presents strategies and tools that are consistent with local jurisdictions' land use policies and incorporate best practices for achieving the state-mandated reductions in GHG emissions at the regional level through reduced per-capita vehicle miles traveled. These strategies identify how the San Joaquin COG region can implement the RTP/SCS and achieve related GHG reductions. The 2022 RTP/SCS includes eight policies with corresponding implementation strategies for conserving energy, maximizing mobility and accessibility, increasing safety and security, preserving the transportation system, supporting economic development, promoting interagency cooperation and public participation, maximizing cost effectiveness, and improving quality of life for residents. The Proposed Project's consistency with the RTP/SCS goals is analyzed in Table 3-4.

Table 3-4. Project Consistency with the 2022 RTP/SCS	
Strategy	**Project Consistency**
Enhance the Environment for Existing and Future Generations and Conserve Energy	**No Conflict:** The Project would utilize electricity provided by Pacific Gas & Electric (PG&E) which is required to meet the future year renewable portfolio performance standards. In addition, future development associated with Project implementation would be required to meet the applicable requirements of the 2022 (or more current) Title 24 Building Energy Efficiency Standards.
Maximize Mobility and Accessibility	**No Conflict:** The Project would support the use of zero-emission and low-emission vehicles, by implementing EV-ready charging spaces, consistent with the requirements of the 2022 Title 24 Building Energy Efficiency Standards and CalGreen Tier 2 requirements. In addition, although this Project is not a transportation improvement project, the Project is located near existing transit routes and in a city where regional transit improvements are planned.
Increase Safety and Security	**No Conflict**: The Project would be developed using the latest State and local requirements relating to safety and security. Development of the Project site would include other uses to support and complement the proposed residential development include public utility infrastructure, public and private roadways, curb/gutters/sidewalks, other pedestrian facilities, private parking, street lighting, and street signage, which would enhance the safety and security of the site and it surroundings, by connecting to existing development.
Preserve the Efficiency of the Existing Transportation System	**Not Applicable**: This is not a transportation improvement project and is therefore not applicable. The Project would not interfere with the efficiency of any existing transportation system.
Support Economic Vitality	**No Conflict**: The State of California is currently in a housing crisis. The Proposed Project will provide residential units that will accommodate a range of housing objectives and buyer needs. The Project would bring new housing to the City of Stockton and the broader region, by establishing housing that provides for local and regional housing demand, consistent with City requirements as stated in the latest Regional Housing Needs Analysis, and by providing infrastructure that meets City standards and is integrated with existing and planned facilities and connections.
Promote Interagency Coordination and Public Participation for Transportation Decision-Making and Planning Efforts	**Not Applicable**: This is not a transportation planning or improvement project and is therefore not applicable.
Maximize the Cost Effectiveness	**No Conflict:** The housing development associated with the Project will occur dependent on market conditions and demand. The plan for infrastructure allows for development to occur in phases to respond to the market conditions and demand.
Improve the Quality of Life for Residents	**No Conflict**: The Proposed Project will provide housing that will accommodate a range of housing objectives and buyer needs with a goal to ensure housing in the community.

Source: SJCOG 2022

Implementing the 2022 RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. As shown, the Proposed Project would in no way conflict with the stated goals of the RTP/SCS; therefore, the Proposed Project would not interfere with San Joaquin COG's ability to achieve the region's mobile source GHG reduction targets outlined in the RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the Proposed Project is not regionally significant per CEQA Guidelines Section 15206 and as such, it would not conflict with the 2022 RTP/SCS targets, since those targets were established and are applicable on a regional level.

2022 California Air Resources Board Scoping Plan

CARB's 2022 Scoping Plan sets a path to achieve targets for carbon neutrality and reduce anthropogenic GHG emissions by 85 percent below 1990 levels by 2045. The 2022 Scoping Plan focuses on zero-emission transportation; phasing out use of fossil gas use for heating homes and buildings; reducing chemical and refrigerants with high global warming potential; providing communities with sustainable options for walking, biking, and public transit; displacement of fossil-fuel fired electrical generation through use of renewable energy alternatives (e.g., solar arrays and wind turbines); and scaling up new options such as green hydrogen. Unlike the 2017 Scoping Plan, CARB no longer includes a numeric per capita threshold and instead advocates for compliance with a local GHG reduction strategy (i.e., Climate Action Plan) consistent with CEQA Guidelines Section 15183.5.

Statewide strategies to reduce GHG emissions in the latest 2022 Scoping Plan include implementing SB 100, which would achieve 100 percent clean electricity by 2045; achieving 100 percent zero emission vehicle sales in 2035 through Advanced Clean Cars II; and implementing the Advanced Clean Fleets regulation to deploy zero-emission vehicles (ZEV) buses and trucks. Additional transportation policies include the Off-Road Zero-Emission Targeted Manufacturer rule, Clean Off-Road Fleet Recognition Program, In-use Off-Road Diesel-Fueled Fleets Regulation, Clean Off-Road Fleet Recognition Program, and Amendments to the In-use Off-Road Diesel-Fueled Fleets Regulation. The 2022 Scoping Plan would continue to implement SB 375. GHGs would be further reduced through the Cap-and-Trade Program carbon pricing and SB 905. SB 905 requires CARB to create the Carbon Capture, Removal, Utilization, and Storage Program to evaluate, demonstrate, and regulate carbon dioxide removal projects and technology.

As indicated above, GHG reductions are also achieved as a result of State of California energy and water efficiency requirements for new residential developments. These efficiency improvements correspond to reductions in secondary GHG emissions. For example, in California, most of the electricity that powers homes are derived from natural gas combustion. Therefore, energy saving measures, such as Title 24, reduces GHG emissions from the power generation facilities by reducing load demand.

The 2022 Scoping Plan Appendix D provides local jurisdictions with tools to reduce GHGs and assist the state in meeting the ambitious targets set forth in the 2022 Scoping Plan. The 2022 Scoping Plan Appendix D focuses on Residential and Mixed-Use Projects. The 2022 Scoping Plan Appendix D lists potential actions that support the state's climate goals. However, the 2022 Scoping Plan notes that the applicability and performance of the actions may vary across the regions. The document is organized into two categories (A) examples of plan-level GHG reduction actions that could be implemented by local governments and (B)

examples of on-site project design features, mitigation measures, that could be required of individual projects under CEQA, if feasible, when the local jurisdiction is the lead agency.

The Project would include a number of the 2022 Scoping Plan standard conditions and mitigation measures for construction and operation. For example, the 2022 Scoping Plan's construction actions include enforcing idling time restrictions on construction vehicles and requiring construction vehicles to operate highest tier engines commercially available.

The Project would include a majority of the feasible operational mitigation measures listed in the 2022 Scoping Plan Appendix D as design features. Some of the recommended operational measures would include providing bicycle parking, creating on- and off-site safety improvements for bike, pedestrian, and transit connections, requiring solar panels, drought-tolerant landscaping, and energy conserving appliances.

As identified in Table 3-5 below, the Project would be consistent with all applicable plan goals and applicable regulatory programs designed to reduce GHG emissions generated by land use projects. The Project would be subject to compliance with all building codes in effect at the time of construction, which include energy conservation measures mandated by California Building Standards Code Title 24 – Energy Efficiency Standards. Because Title 24 standards require energy conservation features in new construction (e.g., high- efficiency lighting, high-efficiency heating, ventilating, and air-conditioning (HVAC) systems, thermal insulation, double-glazed windows, water conserving plumbing fixtures), they indirectly regulate and reduce GHG emissions. California's Building Energy Efficiency Standards are updated on an approximately three-year cycle.

As shown in Table 3-3, approximately 95 percent of the Project's emissions are from energy and mobile sources, which would be further reduced by the 2022 Scoping Plan actions described above. The City has no control over vehicle emissions (approximately 80 percent of the Project's total emissions). However, these emissions would decline in the future due to statewide measures, as well as cleaner technology and fleet turnover. Several of the state's plans and policies would contribute to a reduction in the Project's mobile source emissions, including the following:

- CARB's Advanced Clean Truck Regulation: Adopted in June 2020, CARB's Advanced Clean Truck Regulation requires truck manufacturers to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, every new truck sold in California is required to be zero-emission. The Advanced Clean Truck Regulation accelerates the transition of zero-emission medium-and heavy-duty vehicles from Class 2b to Class 8.

- Executive Order N-79-20: This Executive Order establishes the goal for all new passenger cars and trucks, as well as all drayage/cargo trucks and off-road vehicles and equipment, sold in California, to be zero-emission by 2035 and all medium and heavy-duty vehicles to be zero-emission by 2045. It also directs CARB to develop and propose rulemaking for passenger vehicles and trucks, medium- and heavy-duty fleets where feasible, drayage trucks, and off-road vehicles and equipment "requiring increasing volumes" of new ZEVs "towards the target of 100 percent."

- CARB's Mobile Source Strategy: CARB's Mobile Source Strategy takes an integrated planning approach to identify the level of transition to cleaner mobile source technologies needed to achieve all of California's targets by increasing the adoption of ZEV buses and trucks.

- CARB's Sustainable Freight Action Plan: The Sustainable Freight Action Plan which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZEV trucks. This Plan applies to all trucks accessing the Project Site and may include existing trucks or new trucks that are part of the Statewide goods movement sector.

- CARB's Emissions Reduction Plan for Ports and Goods Movement: CARB's Emissions Reduction Plan for Ports and Goods Movement identifies measures to improve goods movement efficiencies such as advanced combustion strategies, friction reduction, waste heat recovery, and electrification of accessories.

While these measures are not directly applicable to the Project, any activity associated with goods movement would be required to comply with these measures as adopted. The Project would not obstruct or interfere with efforts to increase ZEVs or state efforts to improve system efficiency. Compliance with applicable state standards (e.g., continuation of the Cap-and-Trade regulation; CARB's Mobile Source Strategy, Sustainable Freight Action Plan, and Advanced Clean Truck Regulation; Executive Order N-79-20; SB 100/renewable electricity portfolio improvements that require 60 percent renewable electricity by 2030 and 100 percent renewable by 2045, etc.) would ensure consistency with state and regional GHG reduction planning efforts, including the 2022 Scoping Plan. It is also noted that the Project would not convert any Natural and Working Lands and/or decrease the state's urban forest carbon stock, which are areas of emphasis in the 2022 Scoping Plan.

Regarding goals for 2050 under Executive Order S-3-05, at this time it is not possible to quantify the emissions savings from future regulatory measures, as they have not yet been developed; nevertheless, it can be anticipated that Project operations would benefit from applicable measures enacted to meet state GHG reduction goals. The Project would not impede the state's progress towards carbon neutrality by 2045 under the 2022 Scoping Plan. The Project would be required to comply with applicable current and future regulatory requirements promulgated through the 2022 Scoping Plan. As such, impacts related to consistency with the 2022 Scoping Plan would be less than significant, and no mitigation is required.

Table 3-5. Project Consistency with the Applicable Scoping Plan Measures			
Scoping Plan Sector	**Scoping Plan Measure**	**Implementing Regulations**	**Project Consistency**
Transportation	California Cap-and Trade Program Linked to Western Climate Initiative	Regulation for the California Cap on GHG Emissions and Market-Based Compliance Mechanism October 20, 2015 (CCR 95800)	**Consistent.** The Cap-and-Trade Program applies to large industrial sources such as power plants, refineries, and cement manufacturers. However, the regulation indirectly affects people who use the products and services produced by these industrial sources when increased cost of products or services (such as electricity and fuel) are transferred to the consumers. The Cap-and-Trade Program covers the GHG emissions associated with electricity consumed in California, generated in-state or imported. Accordingly, GHG emissions associated with CEQA projects' electricity usage are covered by the Cap-and-Trade Program. The Cap-and-Trade Program also covers fuel suppliers (natural gas and propane fuel providers and transportation fuel providers) to address emissions from such fuels and combustion of other fossil fuels not directly covered at large sources in the Program's first compliance period. The Proposed Project would not conflict with implementation of the Cap-and-Trade Program and would indirectly be consistent with regard to the use of electricity and fuel.
	California Light-Duty Vehicle GHG Standards	Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles Pavley I 2005 Regulations to Control GHG Emissions from Motor Vehicles	**Consistent**. This measure applies to all new vehicles starting with model year 2012. The Project would not conflict with its implementation as it would apply to all new passenger vehicles purchased in California. Passenger vehicles, model year 2012 and later, associated with Project construction and operation would be required to comply with the Pavley emissions standards.
		2012 LEV III California GHG and Criteria Pollutant Exhaust and Evaporative Emission Standards	**Consistent**. The LEV III amendments provide reductions from new vehicles sold in California between 2017 and 2025. Passenger vehicles associated with Project construction and operations would be required to comply with LEV III standards.
	Low Carbon Fuel Standard	2009 readopted in 2015.	**Consistent.** This measure applies to transportation fuels utilized by vehicles in California. The Project would not

		Regulations to Achieve GHG Emission Reductions Subarticle 7. Low Carbon Fuel Standard CCR 95480	conflict with implementation of this measure. It is assumed that any motor vehicles associated with Project construction and operations would be consistent with the measure and utilize low carbon transportation fuels.
	Regional Transportation-Related GHG Targets	SB 375. Cal. Public Resources Code §§ 21155, 21155.1, 21155.2, 21159.28	**Consistent**. The Project would provide development in the region that is consistent with the growth projections in the 2022 RTP/SCS. The Project is an infill project proposing 93 single-family lots. The Project Site contains a City of Stockton General Plan land use designation of Low Density Residential. The Low Density Residential General Plan designation allows for single-family residential units, duplexes, triplexes, semi-detached patio homes, town homes, public and quasi-public uses, second units, and other similar and compatible uses. The Project is consistent with this General Plan designation and is therefore consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the 2022 RTP/SCS.
	Goods Movement	Goods Movement Action Plan January 2007	**Not Applicable.** The Project does not propose any changes to maritime, rail, or intermodal facilities or forms of transportation.
	Medium/Heavy-Duty Vehicle	2010 Amendments to the Truck and Bus Regulation, the Drayage Truck Regulation and the Tractor-Trailer GHG Regulation	**Consistent**. This measure applies to medium- and heavy-duty vehicles that operate in the state. The Project would not conflict with implementation of this measure. Medium- and heavy-duty vehicles associated with Project construction would be required to comply with this regulation
	High Speed Rail	Funded under SB 862	**Not Applicable.** This is a Statewide measure that cannot be implemented by a project applicant or Lead Agency
Electricity and Natural Gas	Energy Efficiency	Title 20 Appliance Efficiency Regulation Title 24 Part 6 Energy Efficiency	**Consistent.** The Project would not conflict with implementation of this measure, as it would be subject to compliance with the latest energy efficiency standards.

		Standards for Residential and Non-Residential Building	
		Title 24 Part 11 California Green Building Code Standards	
	Renewable Portfolio Standard/Renewable Electricity Standard	2010 Regulation to Implement the Renewable Electricity Standard (33% 2020)	**Consistent.** The Project would obtain electricity from the electric utility, PG&E. PG&E obtained 33.6 percent of its power supply from renewable sources in 2021. Therefore, the utility would provide power to the Project that would be is comprised of a greater percentage of renewable sources.
	Million Solar Roofs Program	Tax Incentive Program	**Consistent.** This measure is to increase solar use throughout California, which is being done by various electricity providers and existing solar programs. The program provides incentives that are in place at the time of construction.
Water	Water	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The Project would comply with the CALGreen Code, which require a 20 percent reduction in indoor water use.
		SBX 7-7—The Water Conservation Act of 2009	
		Model Water Efficient Landscape Ordinance	
Green Buildings	Green Building Strategy	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The state is required to increase use of green building practices. The Project would implement required green building strategies through existing regulations that require the Project to comply with various CALGreen Code standards.
Industry	Industrial Emissions	2010 CARB Mandatory Reporting Regulation	**Not Applicable.** The Mandatory Reporting Regulation requires facilities and entities with more than 10,000 metric tons of CO_2e of combustion and process emissions, all facilities belonging to certain industries, and all electric power entities to submit an annual GHG emissions data report directly to CARB. As shown above,

			total Project GHG emissions would not exceed 1,486 metric tons of CO_2e. The Project is not considered a "facility" and the majority of these emissions are from mobile sources. Therefore, this regulation would not apply.
Recycling and Waste Management	Recycling and Waste	Title 24 Part 11 California Green Building Code Standards	**Consistent.** The Project would not conflict with implementation of these measures. The Project is required to achieve the recycling mandates via compliance with the CALGreen Code.
		AB 341 Statewide 75 Percent Diversion Goal	
		Cap-and-Trade Offset Projects	
Forests	Sustainable Forest		**Not Applicable.** The Project is in an area designated for urban uses. No forested lands exist on the site.
High Global Warming Potential	High Global Warming Potential Gases	CARB Refrigerant Management Program CCR 95380	**Consistent.** The regulations are applicable to refrigerants used by large air conditioning systems and large commercial and industrial refrigerators and cold storage systems. The Project would not conflict with the refrigerant management regulations adopted by CARB.
Agriculture	Agriculture	Cap-and-Trade Offset Projects for Livestock and Rice Cultivation	**Not Applicable**. No grazing, feedlot, or other agricultural activities that generate manure occur currently on site or are proposed by the Project.

In conclusion, the Project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions.

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LIST OF ATTACHMENTS

Attachment A – CalEEMod Output File for Air Quality and Greenhouse Gas Emissions

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutant and Greenhouse Gas Emissions

Bear Creek Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Bear Creek
Construction Start Date	6/4/2024
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.40
Precipitation (days)	0.40
Location	9473 West Ln, Stockton, CA 95210, USA
County	San Joaquin
City	Stockton
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2006
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description

Single Family Housing	93.0	Dwelling Unit	13.6	181,350	1,089,296	—	300	—
Other Asphalt Surfaces	63.6	1000sqft	1.46	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.73	36.0	33.9	0.06	1.60	19.8	21.4	1.47	10.1	11.6	—	6,787	6,787	0.28	0.07	2.04	6,813
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	57.8	11.7	14.7	0.03	0.50	0.36	0.86	0.46	0.09	0.55	—	2,970	2,970	0.12	0.07	0.05	2,995
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.96	8.83	9.13	0.02	0.38	2.59	2.97	0.35	1.21	1.56	—	1,824	1,824	0.07	0.04	0.50	1,839
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.72	1.61	1.67	< 0.005	0.07	0.47	0.54	0.06	0.22	0.29	—	302	302	0.01	0.01	0.08	305

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	3.73	36.0	33.9	0.06	1.60	19.8	21.4	1.47	10.1	11.6	—	6,787	6,787	0.28	0.07	2.04	6,813
2025	1.28	10.9	14.9	0.03	0.44	0.36	0.79	0.40	0.09	0.49	—	2,989	2,989	0.12	0.07	1.93	3,015
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.35	11.7	14.7	0.03	0.50	0.36	0.86	0.46	0.09	0.55	—	2,970	2,970	0.12	0.07	0.05	2,995
2025	57.8	10.9	14.5	0.03	0.44	0.36	0.79	0.40	0.09	0.49	—	2,959	2,959	0.11	0.07	0.05	2,984
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.95	8.83	9.10	0.02	0.38	2.59	2.97	0.35	1.21	1.56	—	1,757	1,757	0.07	0.03	0.27	1,767
2025	3.96	6.80	9.13	0.02	0.27	0.22	0.49	0.25	0.05	0.31	—	1,824	1,824	0.07	0.04	0.50	1,839
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.17	1.61	1.66	< 0.005	0.07	0.47	0.54	0.06	0.22	0.29	—	291	291	0.01	< 0.005	0.04	293
2025	0.72	1.24	1.67	< 0.005	0.05	0.04	0.09	0.05	0.01	0.06	—	302	302	0.01	0.01	0.08	305

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.61	5.16	39.3	0.08	0.18	6.17	6.35	0.18	1.57	1.75	51.5	10,007	10,059	5.64	0.38	30.2	10,342
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.82	5.69	29.6	0.08	0.18	6.17	6.35	0.18	1.57	1.75	51.5	9,437	9,488	5.68	0.41	2.05	9,753

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	7.95	4.78	31.3	0.08	0.13	6.03	6.16	0.13	1.53	1.66	51.5	8,653	8,704	5.64	0.38	13.5	8,973
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.45	0.87	5.70	0.01	0.02	1.10	1.12	0.02	0.28	0.30	8.53	1,433	1,441	0.93	0.06	2.23	1,486

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.85	3.65	33.4	0.08	0.06	6.17	6.23	0.06	1.57	1.63	—	7,679	7,679	0.30	0.35	28.9	7,818
Area	4.72	0.82	5.59	0.01	0.07	—	0.07	0.06	—	0.06	0.00	993	993	0.02	< 0.005	—	994
Energy	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	1,310	1,310	0.15	0.01	—	1,317
Water	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4
Waste	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30
Total	8.61	5.16	39.3	0.08	0.18	6.17	6.35	0.18	1.57	1.75	51.5	10,007	10,059	5.64	0.38	30.2	10,342
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.53	4.23	29.0	0.07	0.06	6.17	6.23	0.06	1.57	1.63	—	7,122	7,122	0.34	0.38	0.75	7,244
Area	4.25	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	0.00	979	979	0.02	< 0.005	—	980
Energy	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	1,310	1,310	0.15	0.01	—	1,317
Water	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4
Waste	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30

Total	7.82	5.69	29.6	0.08	0.18	6.17	6.35	0.18	1.57	1.75	51.5	9,437	9,488	5.68	0.41	2.05	9,753
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	3.46	3.89	28.3	0.07	0.06	6.03	6.09	0.06	1.53	1.59	—	7,091	7,091	0.32	0.35	12.2	7,216
Area	4.45	0.20	2.67	< 0.005	0.02	—	0.02	0.02	—	0.02	0.00	227	227	< 0.005	< 0.005	—	227
Energy	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	1,310	1,310	0.15	0.01	—	1,317
Water	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4
Waste	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30
Total	7.95	4.78	31.3	0.08	0.13	6.03	6.16	0.13	1.53	1.66	51.5	8,653	8,704	5.64	0.38	13.5	8,973
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.63	0.71	5.16	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,174	1,174	0.05	0.06	2.02	1,195
Area	0.81	0.04	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	37.6	37.6	< 0.005	< 0.005	—	37.6
Energy	0.01	0.12	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	217	217	0.02	< 0.005	—	218
Water	—	—	—	—	—	—	—	—	—	—	1.20	4.15	5.35	0.12	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	7.33	0.00	7.33	0.73	0.00	—	25.6
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	1.45	0.87	5.70	0.01	0.02	1.10	1.12	0.02	0.28	0.30	8.53	1,433	1,441	0.93	0.06	2.23	1,486

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

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

Off-Road Equipment	3.65	36.0	32.9	0.05	1.60	—	1.60	1.47	—	1.47	—	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.32	3.15	2.89	< 0.005	0.14	—	0.14	0.13	—	0.13	—	464	464	0.02	< 0.005	—	466
Dust From Material Movement	—	—	—	—	—	1.72	1.72	—	0.89	0.89	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.58	0.53	< 0.005	0.03	—	0.03	0.02	—	0.02	—	76.9	76.9	< 0.005	< 0.005	—	77.1
Dust From Material Movement	—	—	—	—	—	0.31	0.31	—	0.16	0.16	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.05	1.00	0.00	0.00	0.15	0.15	0.00	0.03	0.03	—	165	165	0.01	0.01	0.66	168

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13.4	13.4	< 0.005	< 0.005	0.03	13.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.22	2.22	< 0.005	< 0.005	< 0.005	2.26
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.52	34.3	30.2	0.06	1.45	—	1.45	1.33	—	1.33	—	6,598	6,598	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.82	2.48	0.01	0.12	—	0.12	0.11	—	0.11	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.51	0.45	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.14	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	189	189	0.01	0.01	0.76	192
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.08	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.4	14.4	< 0.005	< 0.005	0.03	14.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.38	2.38	< 0.005	< 0.005	< 0.005	2.42
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Building Construction (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.20	11.2	13.1	0.02	0.50	—	0.50	0.46	—	0.46	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.72	3.18	0.01	0.12	—	0.12	0.11	—	0.11	—	582	582	0.02	< 0.005	—	584

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.50	0.58	< 0.005	0.02	—	0.02	0.02	—	0.02	—	96.3	96.3	< 0.005	< 0.005	—	96.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.10	1.91	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	316	316	0.02	0.01	1.27	322
Vendor	0.01	0.36	0.13	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	286	286	0.01	0.04	0.78	300
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.14	1.51	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	286	286	0.02	0.01	0.03	290
Vendor	0.01	0.39	0.13	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	286	286	0.01	0.04	0.02	300
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.37	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.1	71.1	< 0.005	< 0.005	0.13	72.2
Vendor	< 0.005	0.09	0.03	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	69.5	69.5	< 0.005	0.01	0.08	72.8
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.07	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.5	11.5	< 0.005	< 0.005	0.01	12.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.13	10.4	13.0	0.02	0.43	—	0.43	0.40	—	0.40	—	2,398	2,398	0.10	0.02	—	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.65	6.07	7.58	0.01	0.25	—	0.25	0.23	—	0.23	—	1,394	1,394	0.06	0.01	—	1,398
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	1.11	1.38	< 0.005	0.05	—	0.05	0.04	—	0.04	—	231	231	0.01	< 0.005	—	232
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.14	0.09	1.75	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	310	310	0.01	0.01	1.15	315
Vendor	0.01	0.35	0.12	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	281	281	0.01	0.04	0.77	295
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.13	0.13	1.39	0.00	0.00	0.28	0.28	0.00	0.07	0.07	—	280	280	0.01	0.01	0.03	284
Vendor	0.01	0.37	0.12	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.02	—	282	282	0.01	0.04	0.02	294
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.82	0.00	0.00	0.16	0.16	0.00	0.04	0.04	—	167	167	< 0.005	0.01	0.29	169
Vendor	0.01	0.21	0.07	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	164	164	< 0.005	0.02	0.19	171
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.15	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	27.6	27.6	< 0.005	< 0.005	0.05	28.0
Vendor	< 0.005	0.04	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	0.03	28.3
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Paving (2025) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.80	7.45	9.98	0.01	0.35	—	0.35	0.32	—	0.32	—	1,511	1,511	0.06	0.01	—	1,517
Paving	0.19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.41	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	125	125	< 0.005	0.01	0.01	127
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.04	7.04	< 0.005	< 0.005	0.01	7.15
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.17	1.17	< 0.005	< 0.005	< 0.005	1.18
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Architectural Coating (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.88	1.14	< 0.005	0.03	—	0.03	0.03	—	0.03	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	57.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	3.16	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	0.58	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.28	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	56.0	56.0	< 0.005	< 0.005	0.01	56.7
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.14	3.14	< 0.005	< 0.005	0.01	3.19
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.52	0.52	< 0.005	< 0.005	< 0.005	0.53
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	3.85	3.65	33.4	0.08	0.06	6.17	6.23	0.06	1.57	1.63	—	7,679	7,679	0.30	0.35	28.9	7,818
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.85	3.65	33.4	0.08	0.06	6.17	6.23	0.06	1.57	1.63	—	7,679	7,679	0.30	0.35	28.9	7,818
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	3.53	4.23	29.0	0.07	0.06	6.17	6.23	0.06	1.57	1.63	—	7,122	7,122	0.34	0.38	0.75	7,244
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	3.53	4.23	29.0	0.07	0.06	6.17	6.23	0.06	1.57	1.63	—	7,122	7,122	0.34	0.38	0.75	7,244
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.63	0.71	5.16	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,174	1,174	0.05	0.06	2.02	1,195

Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.63	0.71	5.16	0.01	0.01	1.10	1.11	0.01	0.28	0.29	—	1,174	1,174	0.05	0.06	2.02	1,195

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	443	443	0.07	0.01	—	447
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	443	443	0.07	0.01	—	447
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	443	443	0.07	0.01	—	447
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	443	443	0.07	0.01	—	447
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	73.4	73.4	0.01	< 0.005	—	74.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	73.4	73.4	0.01	< 0.005	—	74.1

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	867	867	0.08	< 0.005	—	869
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	867	867	0.08	< 0.005	—	869
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	867	867	0.08	< 0.005	—	869
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.04	0.68	0.29	< 0.005	0.06	—	0.06	0.06	—	0.06	—	867	867	0.08	< 0.005	—	869
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Single Family Housing	0.01	0.12	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	144	144	0.01	< 0.005	—	144
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.01	0.12	0.05	< 0.005	0.01	—	0.01	0.01	—	0.01	—	144	144	0.01	< 0.005	—	144

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	0.00	979	979	0.02	< 0.005	—	980
Consumer Products	3.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.47	0.05	5.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.1	14.1	< 0.005	< 0.005	—	14.2
Total	4.72	0.82	5.59	0.01	0.07	—	0.07	0.06	—	0.06	0.00	993	993	0.02	< 0.005	—	994
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.05	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	0.00	979	979	0.02	< 0.005	—	980

Consumer	3.89	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	4.25	0.77	0.33	< 0.005	0.06	—	0.06	0.06	—	0.06	0.00	979	979	0.02	< 0.005	—	980
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	36.4	36.4	< 0.005	< 0.005	—	36.5
Consumer Products	0.71	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.04	< 0.005	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.15	1.15	< 0.005	< 0.005	—	1.16
Total	0.81	0.04	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	37.6	37.6	< 0.005	< 0.005	—	37.6

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4

Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	7.25	25.1	32.3	0.75	0.02	—	56.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	1.20	4.15	5.35	0.12	< 0.005	—	9.34
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	1.20	4.15	5.35	0.12	< 0.005	—	9.34

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

Single Family Housing	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	44.3	0.00	44.3	4.42	0.00	—	155
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	7.33	0.00	7.33	0.73	0.00	—	25.6
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	7.33	0.00	7.33	0.73	0.00	—	25.6

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.30	1.30
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.22	0.22

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

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

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	6/4/2024	7/17/2024	5.00	32.0	—
Grading	Grading	7/18/2024	8/29/2024	5.00	30.0	—
Building Construction	Building Construction	8/30/2024	10/24/2025	5.00	300	—

Paving	Paving	10/25/2025	11/22/2025	5.00	20.0	—
Architectural Coating	Architectural Coating	11/23/2025	12/21/2025	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	11.9	LDA,LDT1,LDT2
Site Preparation	Vendor	—	9.10	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	11.9	LDA,LDT1,LDT2
Grading	Vendor	—	9.10	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	33.5	11.9	LDA,LDT1,LDT2
Building Construction	Vendor	9.94	9.10	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.9	LDA,LDT1,LDT2
Paving	Vendor	—	9.10	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	6.70	11.9	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	9.10	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	367,234	122,411	0.00	0.00	3,816

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	48.0	0.00	—
Grading	0.00	0.00	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.48

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Single Family Housing	1.02	0%

Other Asphalt Surfaces	1.46	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Single Family Housing	878	887	795	316,610	8,571	8,661	7,763	3,090,878
Other Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	47
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	47
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
367233.75	122,411	0.00	0.00	3,816

5.10.3. Landscape Equipment

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Single Family Housing	792,891	204	0.0330	0.0040	2,705,372
Other Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Single Family Housing	3,782,661	18,687,068
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Single Family Housing	82.1	—
Other Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

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

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	24.1	annual days of extreme heat
Extreme Precipitation	2.50	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

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

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	0	0	0	N/A

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

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	2	1	1	3
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—

AQ-Ozone	45.0
AQ-PM	52.7
AQ-DPM	27.5
Drinking Water	73.0
Lead Risk Housing	28.8
Pesticides	78.8
Toxic Releases	29.6
Traffic	41.3
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	22.1
Haz Waste Facilities/Generators	1.80
Impaired Water Bodies	43.8
Solid Waste	0.00
Sensitive Population	—
Asthma	86.0
Cardio-vascular	97.4
Low Birth Weights	73.3
Socioeconomic Factor Indicators	—
Education	70.7
Housing	64.0
Linguistic	59.8
Poverty	76.1
Unemployment	95.7

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	26.02335429
Employed	12.83202874
Median HI	32.95264981
Education	—
Bachelor's or higher	13.64044655
High school enrollment	26.62645964
Preschool enrollment	46.82407289
Transportation	—
Auto Access	85.40998332
Active commuting	30.56589247
Social	—
2-parent households	24.70165533
Voting	22.85384319
Neighborhood	—
Alcohol availability	85.20467086
Park access	35.94251251
Retail density	19.06839471
Supermarket access	20.36442962
Tree canopy	73.57885282
Housing	—
Homeownership	50.58385731
Housing habitability	15.50109072
Low-inc homeowner severe housing cost burden	41.6527653
Low-inc renter severe housing cost burden	1.668163737
Uncrowded housing	20.80071859

Health Outcomes	—
Insured adults	43.44924933
Arthritis	50.5
Asthma ER Admissions	10.5
High Blood Pressure	18.7
Cancer (excluding skin)	77.2
Asthma	34.7
Coronary Heart Disease	61.0
Chronic Obstructive Pulmonary Disease	37.6
Diagnosed Diabetes	31.9
Life Expectancy at Birth	3.6
Cognitively Disabled	10.2
Physically Disabled	36.0
Heart Attack ER Admissions	5.5
Mental Health Not Good	34.0
Chronic Kidney Disease	64.9
Obesity	44.9
Pedestrian Injuries	49.9
Physical Health Not Good	37.1
Stroke	39.4
Health Risk Behaviors	—
Binge Drinking	90.4
Current Smoker	28.0
No Leisure Time for Physical Activity	18.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0

Children	18.1
Elderly	63.3
English Speaking	28.3
Foreign-born	67.3
Outdoor Workers	64.7
Climate Change Adaptive Capacity	—
Impervious Surface Cover	63.6
Traffic Density	21.1
Traffic Access	0.0
Other Indices	—
Hardship	79.5
Other Decision Support	—
2016 Voting	9.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	69.0
Healthy Places Index Score for Project Location (b)	25.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	Yes
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Project Site = 13.6 acres
Construction: Construction Phases	No Demolition
Operations: Hearths	No wood stoves assumed

Appendix E.
Cultural Resources Review

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

December 1, 2023

Tim Chamberlain
Wood Rodgers, Inc.
3301 C Street, Building 100-B
Sacramento, CA 95816
tchamberlain@woodrodgers.com

RE: Cultural Resources Review for the Bear Creek Development Project, San Joaquin County, California

Greetings:

At your request, ECORP Consulting, Inc. carried out a cultural resources records search, literature review, and field visit for the Bear Creek Development Project. The Project Area consists of 16.47 acres in the City of Stockton, San Joaquin County, California and is located in the southeastern quarter of the northeastern quarter of Section 10, Township 2 North, Range 6 East, Mount Diablo Base and Meridian, as depicted on the 1968 (photorevised 1976) U.S. Geological Survey (USGS) Lodi South, California 7.5-minute topographic quadrangle map (Figure 1). It is also known as Assessor's Parcel Number (APN) 084-060-100.

This review used reasonably accessible records search and database information and included the examination of aerial photographs and maps, in addition to a pedestrian inspection of the Project Area. This review does not include agency or tribal consultation or evaluations of significance for any previously recorded resources.

RECORDS SEARCH

Qualifications

This assessment was directed by Registered Professional Archaeologist (RPA) Brian S. Marks, Ph.D., who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeology (36 Code of Federal Regulations Part 61). Dr. Marks is a Senior Archaeologist with more than 26 years of experience. Arik J. K. Bord, RPA requested the records search, conducted data gathering, and prepared the report. Mr. Bord is a Staff Archaeologist with more than 10 years of experience in anthropological and archaeological investigations.

Sources Reviewed

ECORP requested a records search for the Project Area at the Central California Information Center (CCIC) of the California Historical Resources Information System at California State University, Stanislaus on October 31, 2023 (CCIC Search #12711L; Appendix A). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location, and whether previously documented pre-contact or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area. CCIC staff completed and returned the records search to ECORP on November 1, 2023.

In addition to the official records and maps for archaeological sites and surveys in San Joaquin County, ECORP also reviewed the following historic references: Office of Historic Preservation, California Historical Landmarks (CHL; California Office of Historic Preservation [OHP] 2022a); Built Environment Resource Directory (OHP 2022b); Historic Property Data File for San Joaquin County (OHP 2012); the National Register Information System (National Park Service [NPS] 2023); CHL (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (California Department of Transportation [Caltrans] 2019); Caltrans State Bridge Survey (Caltrans 2018); and *Historic Spots in California* (Kyle 2002). ECORP also reviewed geologic maps and soils data to assess buried site potential.

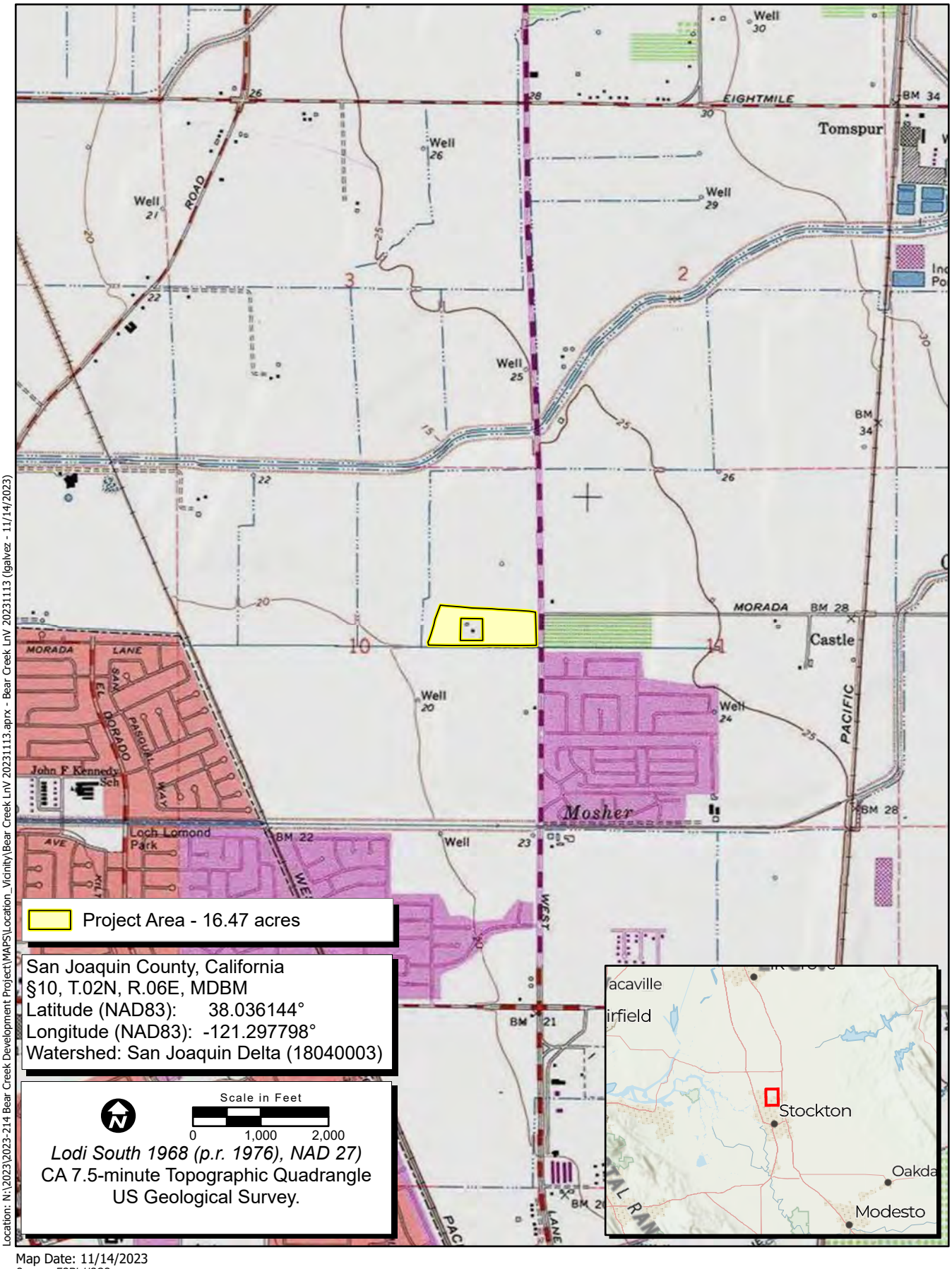
Other references examined include the historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2022). In addition, ECORP reviewed the following maps:

- 1894 USGS Lodi, California topographic quadrangle map (1:125,000 scale);
- 1910 USGS Castle, California topographic Quadrangle map (1:31,680 scale); and
- 1953 and 1968 USGS Lodi South, California topographic quadrangle maps (1:24,000 scale) (including the 1976 photorevised version of the 1968 series).

ECORP reviewed aerial photographs taken in 1949, 1957, 1967, 1970, 1982, 1993, and every year from 2002 through 2020 for any indications of property usage and built environment.

ECORP contacted the California Native American Heritage Commission (NAHC) on November 14, 2023 to request a search of the Sacred Lands File for the Project Area (Appendix B). This search determines whether the California Native American tribes within the Project Area have recorded Sacred Lands because the Sacred Lands File is populated by members of the Native American community with knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding Tribal Cultural Resources, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal laws. The lead agencies do not delegate government-to-government authority to any private entity to conduct tribal consultation.

ECORP emailed a letter to the San Joaquin County Historical Society and Museum on November 14, 2023 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area (Appendix A).



Location: N:\2023\2023-214 Bear Creek Development Project\MAPS\Location_Vicinity\Bear Creek LnV 20231113.aprx - Bear Creek LnV 20231113 (lgalvez - 11/14/2023)

Map Date: 11/14/2023
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

2023-214 Bear Creek Development Project

SEARCH RESULTS

Records Search

Twenty-two previous cultural resource investigations have been conducted within 0.5 mile of the Project Area, covering approximately 66 percent of the total area surrounding the Project Area within the records search radius. Of the 22 studies, 2 included the Project Area (Table 1) and the other 20 were conducted within the 0.5-mile radius. Appendix A lists the reports located within 0.5 mile of the Project Area. These studies revealed the presence of pre-contact sites, including habitation sites, and historical sites, including rock walls and sites associated with historic mining activities. The previous studies were conducted between 1987 and 2019 and vary in size from 1 to 1,100 acres.

Table 1. Previous Cultural Studies within the Project Area

Report Number SJ-	Author(s)	Report Title	Year
5165	Jensen, P. M.	Archaeological Inventory Survey: Proposed Lodi Unified School District's High School Project, c. 75-acres Along Bear Creek Near Stockton, San Joaquin County, California.	2003
6132	Marvin, J. and T. L. Brejla	Historical Resources Survey and Constraints Analysis for the Bear Creek West Development Project Area, Lower Sacramento Road, West Lane, and Eight Mile Road, San Joaquin County, California	2006

Jensen (2003; SJ-5165) consists of a cultural resources inventory of 75 acres, including the Project Area, prior to the construction of Ronald E. McNair High School, which is located across the street to the north of the Project Area. A field survey was conducted using 10- to 15-meter transects and identified two pre-contact resources in close proximity to Bear Creek (P-39-3 and P-39-4). Jensen (2003) did not identify any resources within the Project Area.

Jensen completed another cultural resources inventory approximately 180 feet west of the Project Area in 2004 (SJ-5488) and recorded P-39-4491, a historic-era ranch complex consisting of a residence and barn, which is surrounded by, but not within, the Project Area.

Marvin and Brejla (2006; SJ-6132) consists of an architectural and built environment cursory inventory and records search of approximately 1,100 acres, including the Project Area, for a proposed development project north of Bear Creek. The search identified two built-environment residences outside of the 0.5-mile buffer used for this Project. As this was only a cursory built-environment study, the field survey consisted of a vehicular visit to each of the properties identified in the record search to take photographs and conduct an architectural assessment. Mervin and Brejla (2006) did not identify any resources within the Project Area.

The records search determined that seven previously recorded cultural resources are located within 0.5 mile of the Project Area (Table 2). Of these, four are historic-era resources associated with logging and mining activities, two were pre-contact resources which are believed to be associated with Native

American occupation of the vicinity, and one contained pre-contact and historic components. While there are no previously recorded resources within the Project Area, the Project Area completely surrounds P-39-4491.

Table 2. Previously Recorded Cultural Resources within 0.5 mile of the Project Area

Site Number CA-SJO-	Primary Number P-39-	Year and Recorder (first and most recent)	Age/Period	Site Description	Within Project Area?
251	3	1993 Hinshaw, Cultural Resources Specialist with The Planning Center	Pre-contact	Lithic scatter	No
252	4	1993 Hinshaw, Cultural Resources Specialist with The Planning Center	Pre-contact	Pre-contact habitation site	No
253	5	1993 Hinshaw, Cultural Resources Specialist with the Planning Center	Pre-contact	Pre-contact habitation site	No
–	4491	2004 Sean M. Jensen, Genesis Society	Historic-era	Ranch complex	No, but surrounded by the Project
–	4640	2007 Joanne Grant and Jay Rehor, URS Corporation	Pre-contact	Isolated obsidian flake	No
–	4642	2007 Denise Jurich and Jesse Martinez, PBS&J	Historic-era	Irrigation system	No
321H	4875	2008 Michael R. Hibma, LSA Associates, Inc.; 2023 Polanco letter to Ugan, Office of Historic Preservation	Historic-era	Bear Creek Levees and channelized Bear Creek	No

Literature Review

The OHP's Built Environment Resource Directory for San Joaquin County (dated September 23, 2022) did not list any properties within 0.5 mile of the Project Area (OHP 2022b). The nearest listed property is the South Main Canal of the Woodbridge Irrigation District, which is located at the intersection of Morada Road and North 99 Frontage Road West, approximately 2 miles east of the Project Area. The canal was evaluated on October 10, 2012 and determined ineligible for the National Register of Historic Places by consensus through the Section 106 Process—Not evaluated for the California Register or local listing (6Y).

The National Register Information System (NPS 2022) failed to reveal any eligible or listed properties within 0.5 mile of the Project Area. The nearest National Register property is the Cole's Five Cypress Farm, which is located at 11221 East Eight Mile Road in Stockton, approximately 6.5 miles east-northeast of the Project Area.

ECORP reviewed resources listed as California Historical Landmarks (OHP 1996) by the OHP (2022a) on November 14, 2023. The nearest listed landmark is #801: Reuel Colt Gridley Monument, which is located in the City of Stockton, approximately 4 miles south of the Project Area.

Historic Spots in California (Kyle 2002) mentions that San Joaquin County was one of the original 27 counties in California and that more than 100 village sites have been located throughout the County in the form of mounds or midden deposits.

Historic GLO land patent records from the BLM's patent information database (BLM 2022; Table 3) revealed that three patents were issued within the Project Area to two different entities under two different patent statutes. The Public Land Survey System used by the BLM GLO search system uses a slightly different projection compared to the standard USGS system; therefore, it shows the Project Area as spanning Sections 10 and 11, rather than completely within Section 10.

Table 3. GLO Land Patent Records

Patentee	Patent Date	Serial/Document Number	Patent Type/Authority	Location	Total Acres
State of California	1873	CA-42456	Grant-Certain Land to State (5 Stat. 453)	NE¼ S10 and N½ S11	2,002.39
W. J. Little	1872	4073	Cash Sale (3 Stat. 566)	SW¼ S11	160.00
W. J. Little	1867	1381	Cash Sale	SE¼ S10	160.00

The Caltrans Bridge Local and State Inventories (Caltrans 2018, 2019) lists 3 historic bridges within 0.5 mile of the Project Area: Bridge No. 29C0086 was built in 1966 and carries West Lane over Mosher Slough 0.5-mile south of the Project Area; Bridge No. 29C0123 was built in 1966 and carries West Lane over Bear Creek 0.5 mile north of the Project Area. Both bridges are listed by Caltrans as Category 5: Ineligible for National Register listing.

Historic Map and Aerial Photograph Review

The map and aerial photograph review yielded the following results:

- The ranch compound at 9441 West Lane, which is surrounded by the Project Area, first appears in the 1949 aerial photographs and is first depicted on the 1953 USGS Lodi South, California topographic map (1:24,000 scale). The Project Area has been previously used for commercial agriculture, but it has never been planted with orchard trees.
- The residential development south of the Project Area first appears in the 1982 aerial photograph.
- Ground was cleared for the construction of Ronald E. McNair High School in 2003; construction was completed by 2006.

- The levees on Bear Creek approximately 0.5 mile north of the Project Area were constructed between 1957 and 1967.

In sum, the Project Area has been used for agriculture since at least 1949 as the areas surrounding the Project Area have been developed within the City of Stockton.

Sacred Lands File Results

A search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources in the APE. A record of all correspondence is provided in Appendix B.

Geology and Soils Review

In assessing potential for buried archaeological sites, ECORP reviewed reasonably available information regarding natural water and soils. Geological data from the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) characterize the geology of the local area in reference to archaeological history. Certain geological characteristics and formations are more likely to be of concern for archaeological materials. The underlying geomorphology of the Project Area and vicinity consists of fine-grained Modesto Formation rocks deposited during the late Pleistocene (approximately 40 to 14 thousand years ago). Modesto formation deposits within the Project Area consist of upper member, fine-grained alluvium typically found in flood basins, lower fans, and interdistributary fan areas (Dawson 2009). According to the NRCS Web Soil Survey (WSS) website (NRCS 2023), the Project Area consists of Jacktone clay, 0 to 2 percent slopes (180), which is a somewhat poorly drained alluvium derived from mixed rock sources.

Additionally, the presence of natural water sources is often an indicator for the potential presence of archaeological resources because pre-contact Native American communities and post-contact European-American and Native American communities exploited natural water courses for a variety of subsistence and economic resources. The nearest natural water source to the Project Area is Bear Creek, approximately 0.5 mile to the north. Given the distance between the Project Area and the creek, it is unlikely that any buried Native American cultural resources are within the Project Area.

FIELD SURVEY RESULTS

ECORP subjected the Project Area to an intensive pedestrian survey on November 9,2023, under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using 15-meter transects (Figure 2). ECORP expended 0.5 person-days in the field. At the time, ECORP examined the ground surface for indications of surface or subsurface cultural resources and inspected the general morphological characteristics of the ground surface for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, ECORP examined the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances for artifacts or for indications of buried deposits. ECORP did not conduct subsurface investigations or artifact collections during the pedestrian survey.

Location: N:\2023\2023-214 Bear Creek Development Project\MAPS\Cultural_Resources\Bear Creek Survey Coverage 20231113.aprx - Bear Creek Survey Coverage 20231114 (lgalvez - 11/14/2023)

Map Date: 11/14/2023
Sources: Esri World Imagery

Figure 2. Survey Coverage

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The Project Area comprises a field consisting mostly of wheat that had recently been mowed and was 3 to 6 inches tall, in addition to some patches of bare ground (Figure 3). Surface visibility throughout the Project Area was excellent (i.e., greater than 95 percent). Each tree located within the Project Area had an approximately 15-meter radius of wheat surrounding it that had not been mowed. A one-tractor-wide (approximately 10–15-foot-wide) swath of disced soil was outside of the fence surrounding the compound.

The entire Project Area and the road bounding the Project Area's western side contained scattered modern trash. None of the material observed appeared to be more than 50 years old.

Figure 3. Overview of Project Area (view west; November 9, 2023).

CONCLUSIONS

Summary of Results

The records search and the 2023 field survey did not yield any historic-period or pre-contact cultural resources within the Project Area. Resource P-39-4491, a historic-era ranch complex, is surrounded by the Project Area but will not be affected by the Project. Therefore, no Historic Properties under Section 106 of the National Historic Preservation Act (NHPA) or Historical Resources under the California Environmental Quality Act (CEQA) will be affected by the Proposed Project. Until the lead agencies concur with the identification and evaluation of eligibility of cultural resources, no Project activity should occur.

Potential for Buried Pre-Contact Archaeological Materials

Based on the soil makeup, underlying geological composition, and the Project Area's proximity to water, the likelihood of any undiscovered pre-contact cultural resources buried within the Project Area is considered low to moderate. And while soil and geological composition are not the only factors considered in determining the likelihood of pre-contact archaeological materials in a given location, none of the other factors considered (such as past and current land uses and development, prior survey results, number and distribution of previously recorded resources in the vicinity, or local vegetation and burrowing animal activity that would disturb in-situ contexts) appear to change that probability.

Recommendations

There always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the lead agency to address any unanticipated cultural resource discoveries during Project construction. Therefore, ECORP recommends the following procedures.

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:
    - If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
    - If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the lead agencies. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be a Historical Resource under CEQA, as defined by CEQA or a historic property under Section 106 NHPA, if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
    - If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the Yuba County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code (PRC), and AB 2641 will be implemented. If the coroner determines the remains are Native American and not the result of a crime scene, the coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the Project (Section 5097.98 of the PRC).

The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

I hope this review is helpful to you. If you have any questions or would like to discuss these issues in further detail, please contact me at Bmarks@ecorpconsulting.com or by phone at (916) 782-9100.

Sincerely,

Brian S. Marks, Ph.D., RPA
Senior Archaeologist

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_____. 2022. National Register Information System Website. Electronic document, http://www.nr.nps.gov/nrloc1.htm. Accessed March 21, 2023.

_____. 1983. Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. 48 FR (Federal Register) 44716-68.

Natural Resources Conservation Service (NRCS). 2023. Natural Resources Conservation Service Web Soil Survey. http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed March 28, 2023.

LIST OF APPENDICES

EXHIBIT 1

APPENDIX A

Records Search Confirmation

EXHIBIT 1

CENTRAL CALIFORNIA INFORMATION CENTER

California Historical Resources Information System
Department of Anthropology – California State University, Stanislaus
One University Circle, Turlock, California 95382
(209) 667-3307

Alpine, Calaveras, Mariposa, Merced, San Joaquin, Stanislaus & Tuolumne Counties

Date: 11/1/2023

Records Search File No.: 12711L
Project: Bear Creek 2023-214

Brian S. Marks, Ph.D.
ECORP Consulting, Inc. bmarks@ecorpconsulting.com
2525 Warren Drive
Rocklin, CA 95677
916-782-9100

Dear Dr. Marks:

The Central California Information Center received your record search request for the project area referenced above, located on the Lodi South 7.5' quadrangle in San Joaquin County. The following reflects the results of the records search for the project study area and radius:

As per data currently available at the CCaIC, the locations of resources/reports are provided in the following format: ☒ custom GIS maps ☒ GIS Data/shape files

Summary Data:

Resources within the project area:	1: P-39-004491
Resources within the 1/2-mile radius:	6: P-39-000003, 4, 5, 4640, 4642, 4875
Reports within the project area:	2: SJ-05165, 6132
Reports within the 1/2-mile radius:	20: SJ-00779, 805, 829, 2016, 2824, 3128, 3129, 3130, 4994, 5488, 5887, 6392, 6507, 6541, 6723, 6724, 6843, 6851, 8066, 9645

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed
Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed
Resource Digital Database Records: ☒ enclosed ☐ not requested ☐ nothing listed
Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed
Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed
Report Digital Database Records: ☒ enclosed ☐ not requested ☐ nothing listed
Resource Record Copies: ☒ enclosed ☐ not requested ☐ nothing listed
Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed
OHP Historic Properties Directory: New Excel File: Built Environment Resource Directory (BERD) Dated 9/23/2022
Not all resources listed in the BERD are mapped in GIS, nor do we have records on file for; if you identify additional resources in the BERD that you need copies of, contact the IC. ☐ enclosed ☒ not requested ☐ nothing listed
Archaeological Resource Directory (ARD excerpt): ☐ enclosed ☐ not requested ☒ no evaluations listed

CA Inventory of Historic Resources (1976):	☐ enclosed	☐ not requested	☒ nothing listed
Caltrans Bridge Survey:	☐ enclosed	☒ not requested	☐ nothing listed
Ethnographic Information:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Literature:	☐ enclosed	☒ not requested	☐ nothing listed
Historical Maps:	☐ enclosed	☒ not requested	☐ nothing listed
Local Inventories:	☐ enclosed	☐ not requested	☒ nothing listed
GLO and/or Rancho Plat Maps:	☐ enclosed	☒ not requested	☐ nothing listed

Shipwreck Inventory: ☒ not available at CCIC; please go to http://shipwrecks.slc.ca.gov/ShipwrecksDatabase/Shipwrecks_Database.asp

Soil Survey Maps: ☒ not available at CCIC; please go to http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

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). **Note:** Billing will be transmitted separately via email by our Financial Services office* ($520.10), payable within 60 days of receipt of the invoice.

If you wish to include payment by Credit Card, you must wait to receive the official invoice from Financial Services so that you can reference the CMP # (Invoice Number), and then contact the link below:

https://commerce.cashnet.com/ANTHROPOLOGY

Sincerely,

E. A. Greathouse

E. A. Greathouse, Coordinator
Central California Information Center
California Historical Resources Information System

* Invoice Request sent to: ARBilling@csustan.edu, CSU Stanislaus Financial Services

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SJ-00779	NADB-R - 1361619	1987	Napton, L. K.	Cultural Resource Investigation of the 112.13 Acre Country Greens Development Project, City of Stockton, San Joaquin County, California.	CSU Stanislaus, Institute for Archaeological Research for A.R. Sanguinetti & Associates	
SJ-00805	NADB-R - 1361624	1990	Napton, L. K.	Cultural Resource Investigations of the Kaufman and Broad EIR, 398.50 Acres in North Stockton, San Joaquin County, California	CSU Stanislaus Institute for Archaeological Research for Valley Planning Consultants, Inc.	
SJ-00829	NADB-R - 1364356	1966	Riddell, F. A. and William H. Olsen	An Archaeological Survey of Mosher Creek, San Joaquin County, California.	Francis A. Riddell and William H. Olsen; for CA State Parks and Recreation Dept.	39-000244, 39-000267, 39-000268
SJ-02016	NADB-R - 1360522	1993	Hinshaw, J.	Cultural Resource Reconnaissance Survey of Three Possible High School Site Locations (Approx. 240 Acres) North of Stockton, San Joaquin County, California	The Planning Center	39-000003, 39-000004, 39-000005
SJ-02824	NADB-R - 1362195	1995	Busby, C. I., S. A. Guedon, and M. E. Tannam	Cultural Resources Assessment, San Joaquin Area Flood Control Restoration Plan, San Joaquin County, California	Basin Research Associates, Inc. for EIP Associates	39-000002, 39-000004, 39-000075, 39-000155, 39-000162, 39-000211, 39-000226, 39-000229, 39-000231, 39-000234, 39-000241, 39-000244, 39-000271, 39-002516
SJ-02824B		1996	Busby, Colin I., S. A. Guedoon, and M. E. Tannam	Cultural Resources Assessment Addendum, San Joaquin Area Flood Control Restoration Plan, San Joaquin County, California	Basin Research Associates, Inc. for EIP Associates	
SJ-03128	NADB-R - 1363282	1996	Busby, C. I.	Letter to Ms. Cathy McAfee of EIP Associates, RE: Cultural Resources Inventory - In Compliance with Mitigation Measure 4.5-1(a), Middle Bear Creek and Two Detention Basins, San Joaquin Area Flood Control Restoration Plan	Basin Research Associates for EIP Associates	39-000226
SJ-03129	NADB-R - 1363283	1996	Busby, C. I.	Letter to Ms. Cathy McAfee, EIP Associates, RE: Cultural Resources Inventory - In Compliance with Mitigation Measure 4.5-1(a), Lower Bear Creek and Mosher Slough, San Joaquin Area Flood Control Restoration Plan	Basin Research Associates; for EIP Associates	39-000244
SJ-03130	NADB-R - 1363286	1997	Busby, C. I., S. A. Guedon, and M. E. Tannam	Cultural Resources Assessment, Addendum for Supplementary EIR, San Joaquin Area Flood Control Restoration Plan, San Joaquin County, California, Revised Draft.	Basin Research Associates; for EIP Associates	39-000212, 39-000244, 39-000363

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SJ-04994	NADB-R - 1364881	2003	Jensen, P. M.	Archaeological Inventory Survey, Proposed Lodi Unified Pump Station and Outfall Project, < 1 Acre Along Bear Creek Near Stockton, San Joaquin County, California.	Jensen & Associates for Insite Environmental, Inc.	
SJ-05165	NADB-R - 1365045	2003	Jensen, P. M.	Archaeological Inventory Survey: Proposed Lodi Unified School District's High School Project, c. 75-acres Along Bear Creek Near Stockton, San Joaquin County, California.	Jensen & Associates for Lodi Unified School District	39-000003, 39-000004
SJ-05488	NADB-R - 1365372	2004	Jensen, Peter M.	Archaeological Inventory Survey, Alpine Packing Annexation and Specific Plan Project, c. 1,100 Acres Along Eightmile Road, San Joaquin County, California.	Jensen & Associates for Insite Environmental, Inc.	39-000098, 39-004489, 39-004490, 39-004491
SJ-05887	NADB-R - 1365767	2005	Billat, L.	New Tower Submission Packet, FCC Form 620, Project Name Morada, Project Number CA-3037B, San Joaquin County	EarthTouch Inc., for Cal Com Systems, Sprint Nextel, and FCC	
SJ-06132	NADB-R - 1366151	2006	Marvin, J. and T. L. Brejla	Historical Resources Survey and Constraints Analysis for the Bear Creek West Development Project Area, Lower Sacramento Road, West Lane, and Eight Mile Road, San Joaquin County, California	LSA Associates for InSite Environmental, Inc.	39-004489, 39-004490
SJ-06392	NADB-R - 1366619; Other - Tam O'Shanter; SC-13330A	2007	Billat, L.	New Tower ("NT") Submission Packet, FCC Form 620: Tam O'Shanter SC-13330A, 9019 West Lane Stockton, San Jouquin County, California.	Earth Touch Inc.	
SJ-06507	NADB-R - 1366739	2007	URS Corporation	Cultural Resources Report for Geotechnical Evaluations of the San Joaquin Area Flood Control Agency Project Levees	URS Corporation; for DWR	39-000220, 39-004639, 39-004640
SJ-06541	NADB-R - 1366774	2008	Jurich, D., J. Martinez, and S. Smith	A Phase I Cultural Resource Survey of Approximately 510 Acres For The Bear Creek South Environmental Impact Report, San Joaquin County, California	PBS&J for City of Stockton	39-000005, 39-004641, 39-004642, 39-004643
SJ-06723	NADB-R - 1367019	2008	URS Corporation	Technical Report, Final: Cultural Resources Survey Report for the Urban Levee Project	URS Corporation; for Department of Water Resources	
SJ-06724	NADB-R - 1367026	2008	URS Corporation	Technical Report, Final: Cultural Resources Baseline Literature Review for the Urban Levee Project	URS Corporation; for Department of Water Resources	39-002513
SJ-06843	NADB-R - 1367119	2007	ESA	Stockton Delta Water Supply Project Cultural Resources Inventory Report.	ESA; for the City of Stockton	

Report List

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
SJ-06851	NADB-R - 1367106; Other - Ron MCNair HS; SAC-446B	2008	Billat, L.	New Tower ("NT") Submission Packet FCC Form 620 Project Name: Ron McNair HS, Project Number: SAC-446B, 9550 Ronald McNair Way, Stockton, California	Earth Touch, Inc. for Metro PCS, Inc.	
SJ-08066		2003	Werner, R., and R. P. Hampson	Archaeological Investigations, McNair High School Campus, Ca. 75 Acres North Stockton, San Joaquin County, California	ASI for Lodi Unified School District	39-000003, 39-000004, 39-004491, 39-004640
SJ-09645	Other - Tam O'Shanter CLC Tower	2019	Pentney, S.	Phase I Investigation for the CC061 Tam O-Shanter CLC Tower Modification Project, Stockton, San Joaquin County, California.	NWB Environmental Services, LLC for Trileaf Corporation	

EXHIBIT 1

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

November 14, 2023

San Joaquin Historical Society and Museum
P.O. Box 30
Lodi, CA 95241-0030
Sent via email: info@sanjoaquinhistory.org

RE: Cultural Resources Identification Effort for the Bear Creek Development project, Stockton, San Joaquin County, California

Dear San Joaquin County Historical Society and Museum:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the project indicated above. The proposed project consists of approximately 16.5 acres located at the southeast corner of West Lane and Ronald E. McNair Way/Morada Lane, in Section 10 of Township 2 North, Range 6 East (Mount Diablo Base and Meridian) as depicted on the enclosed map. The property is also known as Assessor Parcel Number (APN) 084-060-100. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

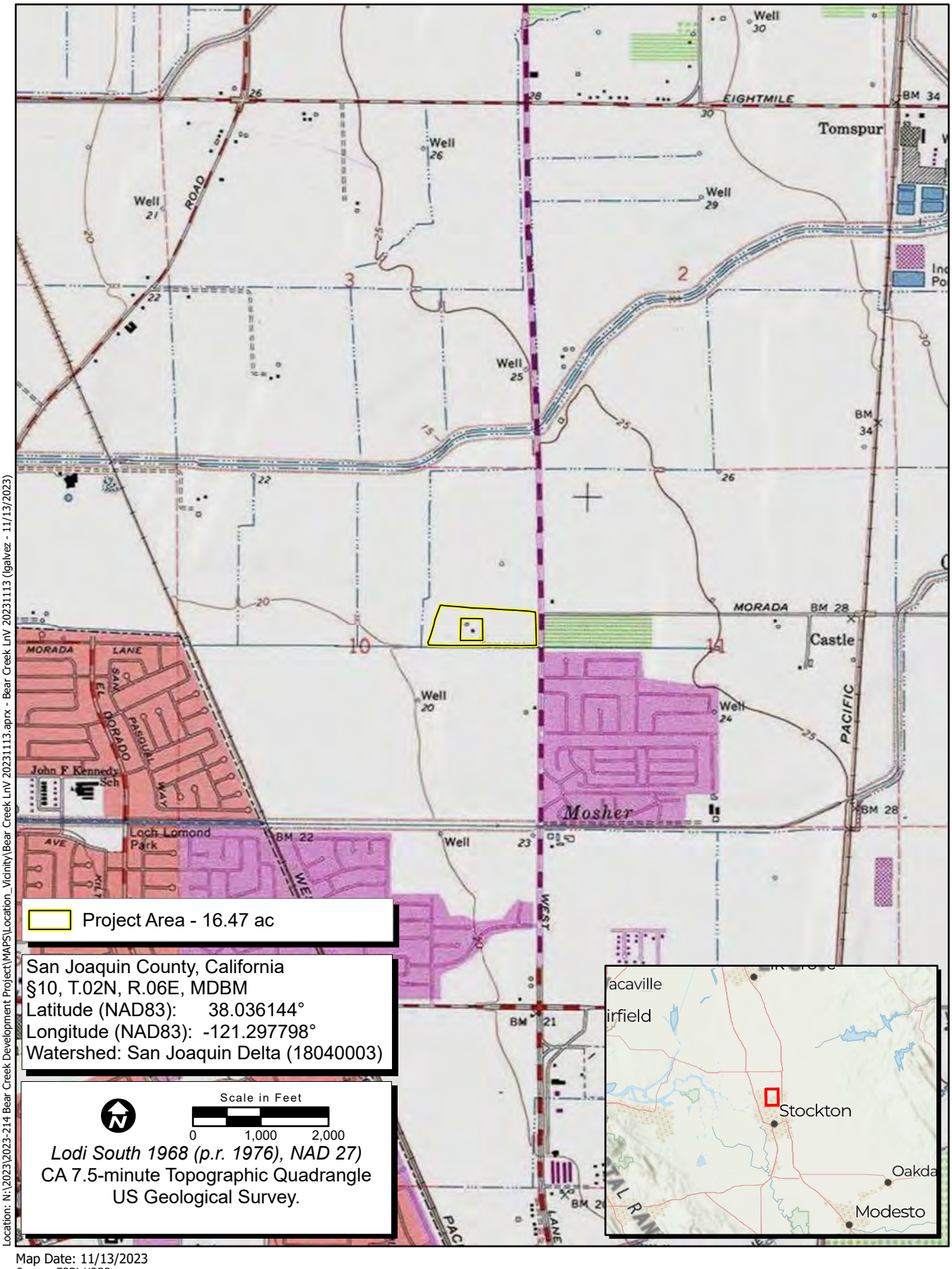
Included are maps showing the project area outlined. We would appreciate input on this undertaking from the historical society with concerns about possible cultural properties or potential impacts within or adjacent to the area of potential effect. If you have any questions, please contact me at (916) 782-9100 or abord@ecorpconsulting.com.

Thank you in advance for your assistance in our cultural resource management study.

Sincerely,

Arik J. K. Bord, MA, RPA
Staff Archaeologist

Attachment(s)
Project Location and Vicinity Map



Location: N:\2023\2023-214 Bear Creek Development Project\MAPS\Location_Vicinity\Bear Creek LnV 20231113.aprx - Bear Creek LnV 20231113 (lgalvez - 11/13/2023)

Map Date: 11/13/2023
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

APPENDIX B

Sacred Lands File Coordination

EXHIBIT 1

From: Arik Bord
Sent: Tuesday, November 14, 2023 10:44 AM
To: NAHC@NAHC
Cc: Brian Marks
Subject: Request for Information, Bear Creek Development Project, 2023-214
Attachments: NAHC-Sacred-Lands-NA-Contact-Form-revised.pdf; Bear Creek LnV 20231113.pdf

Good Afternoon,

Attached, please find a request for a search of the Sacred Land File and a list of Native American tribes for the Bear Creek Development Project in San Joaquin County.

Thanks,

Arik J. K. Bord, M.A., RPA
Staff Archaeologist
ECORP Consulting, Inc.
ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive, Rocklin CA 95677
Ph: 916.782.9100 ◆ Direct Line: 916.251.5149 ◆ Cell: 916.660.6443 ◆ Fax: 916.782.9134
abord@ecorpconsulting.com ◆ www.ecorpconsulting.com
Rocklin ◆ Redlands ◆ Santa Ana ◆ San Diego ◆ Chico ◆ Santa Fe, NM

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

11/14/2023

Information Below is Required for a Sacred Lands File Search

Project: Bear Creek Development Project (2023-214)

County: San Joaquin

USGS Quadrangle: Lodi South 1968 (p.r. 1976)

Township: 2 North **Range:** 6 East **Section(s):** 10

Company/Firm/Agency: ECORP Consulting, Inc.

Contact Person: Arik J. K. Bord

Street Address: 2525 Warren Drive

City: Rocklin **Zip:** 95677

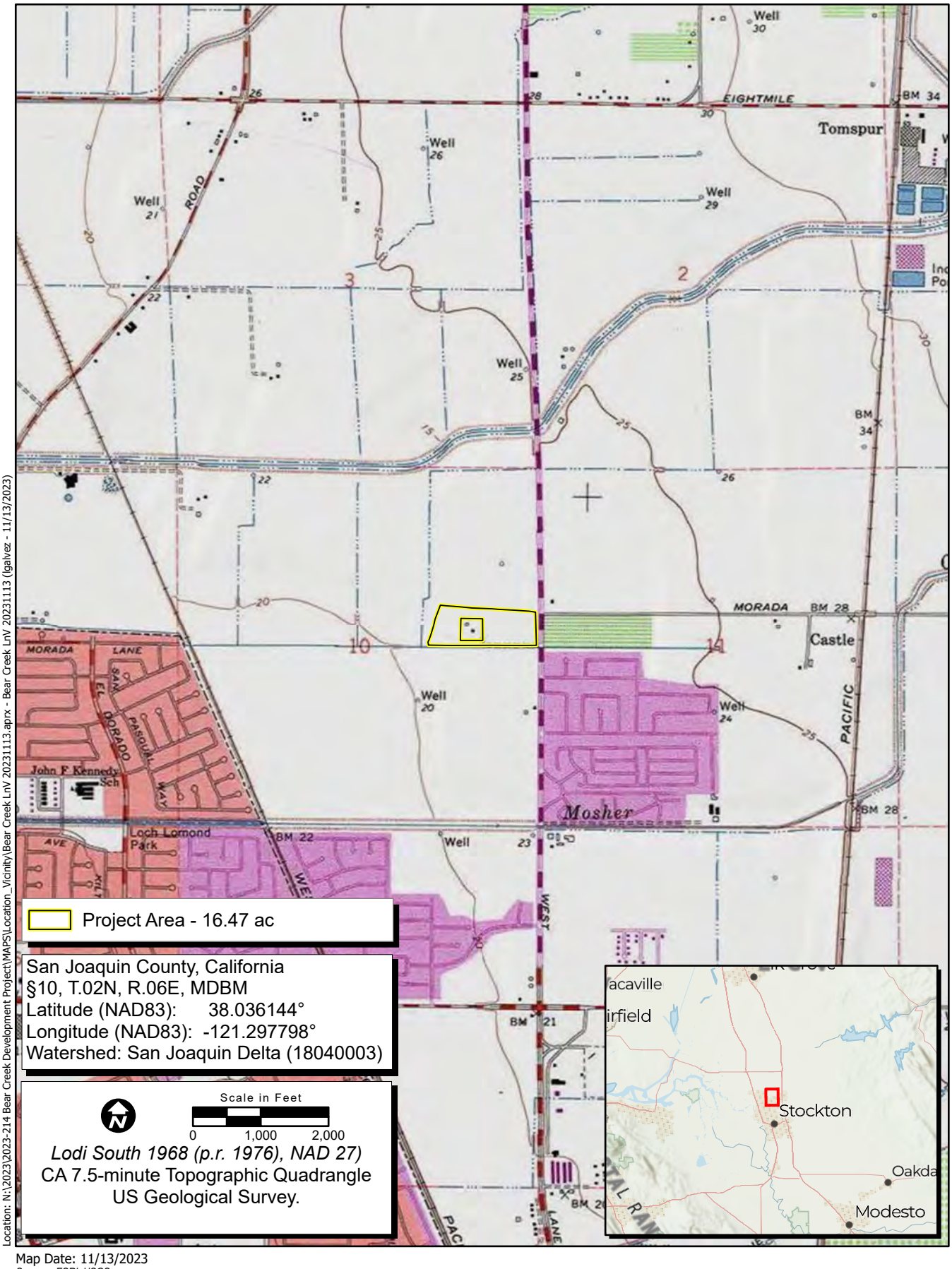
Phone: (916) 782-9100

Fax: (916) 782-9134

Email: abord@ecorpconsulting.com

Project Description:

See attached map.



Location: N:\2023\2023-214 Bear Creek Development Project\MAPS\Location_Vicinity\Bear Creek LnV 20231113.aprx - Bear Creek LnV 20231113 (lgalvez - 11/13/2023)

Map Date: 11/13/2023
Sources: ESRI, USGS

Figure 1. Project Location and Vicinity

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

STATE OF CALIFORNIA **Gavin Newsom, *Governor***

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710

December 1, 2023

Arik Bord
ECORP Consulting, Inc.

Via Email to: abord@ecorpconsulting.com

Re: Bear Creek Development Project, San Joaquin County

Dear Mr. Bord:

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.

Sincerely,

Pricilla Torres-Fuentes

Pricilla Torres-Fuentes
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contact List
San Joaquin County
12/1/2023

EXHIBIT 1

County	Tribe Name	Fed (F) Non-Fed (N)	Contact Person	Contact Address	Phone #	Fax #	Email Address	Cultural Affiliation	Counties	Last Updated
San Joaquin	Buena Vista Rancheria of Me-Wuk Indians	F	Rhonda Morningstar Pope, Chairperson	1418 20th Street, Suite 200 Sacramento, CA, 95811	(916) 491-0011	(916) 491-0012	rhonda@buenavistatribe.com	Me-Wuk	Amador,Sacramento,San Joaquin	
	California Valley Miwok Tribe	F	AKA Sheep Rancheria of Me-Wuk Indians of CA,	P.O. Box 395 West Point, CA, 95255	(209) 293-4179		l.ewilson@yahoo.com	Miwok	Calaveras,Madera,San Joaquin,Stanislaus	7/22/2020
	California Valley Miwok Tribe	F	,	14807 Avenida Central La Grange, CA, 95329	(209) 931-4567	(209) 931-4333		Miwok	Calaveras,Madera,San Joaquin,Stanislaus	
	Chicken Ranch Rancheria of Me-Wuk Indians	F	Lloyd Mathiesen, Chairperson	P.O. Box 1159 Jamestown, CA, 95327	(209) 984-9066	(209) 984-9269	lmathiesen@crtribal.com	Me-Wuk	Alpine,Amador,Calaveras,Contra Costa,El Dorado,Fresno,Madera,Mariposa,Merced,Mono,Sacramento,San	
	Confederated Villages of Lisjan Nation	N	Corrina Gould, Chairperson	10926 Edes Avenue Oakland, CA, 94603	(510) 575-8408		cvltribe@gmail.com	Bay Miwok Ohlone Delta Yokut	Alameda,Contra Costa,Sacramento,San Joaquin,Santa Clara,Solano,Stanislaus	3/22/2023
	Confederated Villages of Lisjan Nation	N	Cheyenne Gould, Tribal Cultural Resource Manager	10926 Edes Ave Oakland, CA, 94603	(510) 575-8408		cvltribe@gmail.com	Bay Miwok Ohlone Delta Yokut	Alameda,Contra Costa,Sacramento,San Joaquin,Santa Clara,Solano,Stanislaus	3/22/2023
	Confederated Villages of Lisjan Nation	N	Deja Gould, Language Program Manager	10926 Edes Ave Oakland, CA, 94603	(510) 575-8408		cvltribe@gmail.com	Bay Miwok Ohlone Delta Yokut	Alameda,Contra Costa,Sacramento,San Joaquin,Santa Clara,Solano,Stanislaus	3/22/2023
	Ione Band of Miwok Indians	F	Sara Dutschke, Chairperson	9252 Bush Street Plymouth, CA, 95669	(209) 245-5800		consultation@ionemiwok.net	Miwok	Amador,Calaveras,El Dorado,Sacramento,San Joaquin	
	Muwekma Ohlone Indian Tribe of the SF Bay Area	N	Monica Arellano, Vice Chairwoman	20885 Redwood Road, Suite 232 Castro Valley, CA, 94546	(408) 205-9714		monicavarellano@gmail.com	Costanoan	Alameda,Contra Costa,Marin,Merced,Napa,Sacramento,San Francisco,San Joaquin,San Mateo,Santa Clara,Santa Cruz,Solano,Sonoma,Stanislaus	7/12/2019
	Nashville Enterprise Miwok-Maidu-Nishinam Tribe	N	Leland Valdez, Cultural Resources		(916) 429-8047			Miwok	Alpine,Amador,Calaveras,Contra Costa,El Dorado,Fresno,Madera,Mariposa,Merced,Mon	7/17/2023
	Nashville Enterprise Miwok-Maidu-Nishinam Tribe	N	Cosme Valdez, Chairperson	P.O. Box 580986 Elk Grove, CA, 95758-0017	(916) 396-1173		valdezcome@comcast.net	Miwok	Alpine,Amador,Calaveras,Contra Costa,El Dorado,Fresno,Madera,Mariposa,Merced,Mono,Sacramento,San	7/17/2023
	North Valley Yokuts Tribe	N	Timothy Perez, Tribal Compliance Officer	P.O. Box 717 Linden, CA, 95236	(209) 662-2788		huskanam@gmail.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023
	North Valley Yokuts Tribe	N	Jessica Murga, Tribal Secretary	990 N. Fine Rd Linden, CA, 95236	(209) 401-6250			Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023
	North Valley Yokuts Tribe	N	John Murga, Tribal Historian	P.O. Box 717 Linden, CA, 95236	(209) 479-0546		johnmurga824@gmail.com	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023
	North Valley Yokuts Tribe	N	Erolinda Perez, Tribal Administrator	P.O. Box 717 Linden, CA, 95236	(209) 649-3155		arr0604w@verizon.net	Costanoan Northern Valley Yokut	Alameda,Calaveras,Contra Costa,Fresno,Madera,Mariposa,Merced,Sacramento,San Benito,San Joaquin,Santa	11/21/2023

EXHIBIT 1

Tule River Indian Tribe	F	Joey Garfield, Tribal Archaeologist	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	joey.garfield@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
Tule River Indian Tribe	F	Neil Peyron, Chairperson	P.O. Box 589 Porterville, CA, 93258	(559) 781-4271	(559) 781-4610	neil.peyron@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	
Tule River Indian Tribe	F	Kerri Vera, Environmental Department	P. O. Box 589 Porterville, CA, 93258	(559) 783-8892	(559) 783-8932	kerri.vera@tulerivertribe-nsn.gov	Yokut	Alameda,Amador,Calaveras,Contra Costa,Fresno,Inyo,Kern,Kings,Madera,Mariposa,Merced,Monterey,Sacramento,San	7/22/2016
United Auburn Indian Community of the Auburn Rancheria	F	Gene Whitehouse, Chairperson	10720 Indian Hill Road Auburn, CA, 95603	(530) 883-2390	(530) 883-2380	bguth@auburnrancheria.com	Maidu Miwok	Amador,Butte,El Dorado,Nevada,Placer,Plumas,Sacramento,San Joaquin,Sierra,Solano,Sutter,Yolo,Yuba	
Wilton Rancheria	F	Cultural Preservation Department,	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		cpd@wiltonrancheria-nsn.gov	Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023
Wilton Rancheria	F	Herbert Griffin, Executive Director of Cultural Preservation	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		hgriffin@wiltonrancheria-nsn.gov	Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023
Wilton Rancheria	F	Dahlton Brown, Executive Director of Administration	9728 Kent Street Elk Grove, CA, 95624	(916) 683-6000		dbrown@wiltonrancheria-nsn.gov	Miwok	Alameda,Alpine,Amador,Contra Costa,El Dorado,Mono,Nevada,Placer,Sacramento,San Joaquin,Solano,Stanislaus,Sutter,Yolo,Yuba	8/7/2023

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 Bear Creek Development Project, San Joaquin County.

Record: PROJ-2023-005838
Report Type: List of Tribes
Counties: San Joaquin
NAHC Group: All

APPENDIX C

Project Area Photographs

EXHIBIT 1

State of California — The Resources Agency **Primary #**
DEPARTMENT OF PARKS AND RECREATION **HRI#**

PHOTOGRAPH RECORD

Trinomial

Page 1 of 1 **Resource/Project Name:** Bear Creek 2023-214 **Year** 2023
Camera: Samsung S21 FE 5G Lens Size: 35mm
Film Type and Speed: Digital Negatives Kept at: ECORP Consulting, Inc.

Mo.	Day	Time	Subject/Description	View Toward	Accession #
11	9	929	Overview Project Area	SE	20231109_092929
11	9	958	Overview Project Area	W	20231109_095838
11	9	958	Overview Project Area	NW	20231109_095842
11	9	1028	Residence Compound entrance	NE	20231109_102834
11	9	1044	Overview Concrete pile at base of tree	E	20231109_104407
11	9	1103	Overview Bear Creek	E	20231109_110303
11	9	1103	Overview Bear Creek	W	20231109_110306

EXHIBIT 1

20231109_110303

20231109_110306

20231109_092929

20231109_095838

20231109_095842

20231109_102834

20231109_104407

EXHIBIT 1

EXHIBIT 1

EXHIBIT 1

EXHIBIT 1

Appendix F.
Noise Impact Assessment

Noise Impact Assessment
for the
Bear Creek Phase 1 Project

Stockton, California

Prepared For:

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December 2023

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LIST OF ACRONYMS AND ABBREVIATIONS

CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
City	City of Stockton
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	Decibel is A-weighted
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Hz	Hertz
L_{dn}	Day-night average sound level
L_{eq}	Measure of ambient noise
L_{max}	The maximum A-weighted noise level during the measurement period.
L_{min}	The minimum A-weighted noise level during the measurement period.
NIOSH	National Institute for Occupational Safety and Health
OPR	Office of Planning and Research
OSHA	Federal Occupational Safety and Health Administration
PPV	Peak particle velocity
Project	Terra Linda High School Modernization Project
RCNM	Roadway Construction Noise Model
RMS	Root mean square
STC	Sound Transmission Class
VdB	Vibration Velocity Level

1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the Bear Creek Phase 1 Project (Project), which proposes the construction of 93 single-family residential units on approximately 13.6 acres in the City of Stockton (City), California. The purpose of this report is to estimate Project-generated noise and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project Area is located on a single parcel of land at 9473 West Lane in the City of Stockton, California. The site is bound by Ronald McNair Way to the north, with Ronald E. McNair High School beyond; West Lane to the east, with a gasoline dispensing station and residential neighborhoods beyond, residential houses fronting Sutherland Drive to the south, and agricultural lands to the west. The Proposed Project would subdivide a portion of the parcel into 93 single-family residential lots, various open space lots and landscape strips. The Project also proposes an off-site stormwater detention basin and the extension of Tam O' Shanter Drive from its current terminus at the southwest corner of the Project Site to Ronald McNair Way. Once operational, the Project Site would be accessed from Morada Lane. A secondary/emergency vehicle access to the Project would be provided at the existing West Lane Frontage Road.

The Project Site contains a City of Stockton General Plan land use designation of Low Density Residential. The Low Density Residential General Plan designation allows for single-family residential units, duplexes, triplexes, semi-detached patio homes, town homes, public and quasi-public uses, second units, and other similar and compatible uses. The maximum density is 6.1 units per acre based on gross acreage and 8.7 units per acre based on net acreage.

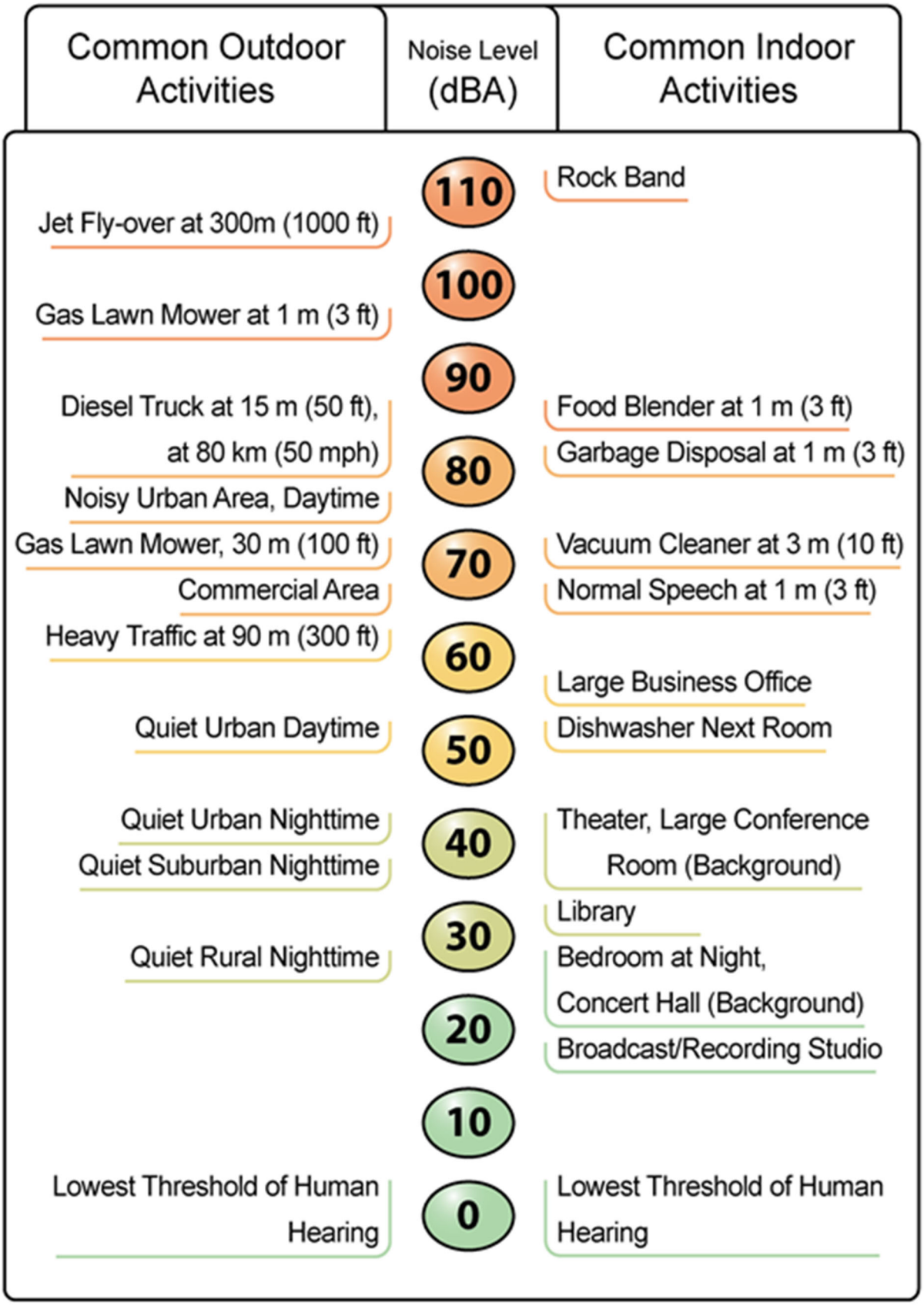
2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

2.1.1 Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted in Figure 2-1. Common Noise Levels.



Source: California Department of Transportation (Caltrans) 2020a

Figure 2-1. Common Noise Levels

2023-214 Bear Creek Phase 1 Project

2.1.2 Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (FHWA 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction of 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. 2013). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the “line of sight” between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typical residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations). In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

2.1.3 Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise. Each is applicable to this analysis and defined as follows:

- **Equivalent Noise Level (L_{eq})** is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
- **Day-Night Average (L_{dn})** is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
- **Community Noise Equivalent Level (CNEL)** is a 24-hour average L_{eq} with a 5-dBA weighting during the hours of 7:00 pm to 10:00 pm and a 10-dBA weighting added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the evening and nighttime, respectively.

Table 2-1 provides a list of other common acoustical descriptors.

Table 2-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit 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. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	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 frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level, CNEL	A 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content, as well as the prevailing ambient noise level.
Decibel, dB	A unit 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. The reference pressure for air is 20.

The A-weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ±1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about ±1 to 2 dBA.

2.1.4 Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL or L_{dn} is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

2.1.5 Effects of Noise on People

2.1.5.1 Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

2.1.5.2 Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources.

2.2 Fundamentals of Environmental Groundborne Vibration

2.2.1 Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage. For human response, however, an average vibration amplitude is more appropriate because it takes time for the human body to respond to the excitation (the human body responds to an average vibration amplitude, not a peak amplitude). Because the average particle velocity over time is zero, the RMS amplitude is typically used to assess human response. The RMS value is the average of the amplitude squared over time, typically a 1- sec. period (FTA 2018).

Table 2-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 2-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

Table 2-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Threshold at which there is a risk of architectural damage to extremely fragile historic buildings, ruins, ancient monuments
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Threshold at which there is a risk of architectural damage to fragile buildings. Virtually no risk of architectural damage to normal buildings
0.25	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to historic and some old buildings
0.3	96	Vibrations may begin to feel severe to people in buildings	Threshold at which there is a risk of architectural damage to older residential structures
0.5	103	Vibrations considered unpleasant by people subjected to continuous vibrations	Threshold at which there is a risk of architectural damage to new residential structures and Modern industrial/commercial buildings

Source: Caltrans 2020b

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

3.1 Noise Sensitive Land Uses

Noise sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise sensitive land uses.

The nearest noise-sensitive receptors to the Project Site include the residences fronting Sutherland Drive directly to the south. There is also a single-family residential property bisecting the Project Site. Ronald E. McNair High School, to the north of the Project Site across Ronald E. McNair Way, is also considered a noise-sensitive receptor. There are also residences to the southwest and southeast of the Project Site.

3.1.1 Existing Ambient Noise Environment

The Project Site is currently undeveloped and bound by Ronald McNair Way to the north, with Ronald E. McNair High School beyond; West Lane to the east, with a gasoline dispensing station and residential neighborhoods beyond, residential houses fronting Sutherland Drive to the south, and agricultural lands to the west. The most common and significant source of noise in the Project Area is traffic noise generated from vehicles traveling West Lane, which traverses the eastern boundary of the Project Site. As shown in Table 3-1 below, the ambient recorded noise level on the Project Site was 58.8 dBA L_{dn}. This measurement is generally verified by the predicted roadway noise contours provided in the City of Stockton General Plan, which identifies the western edge of the Project Site as laying within the 60 dBA CNEL noise contour. The majority of the Project Site is located outside of the 60 dBA CNEL noise contour (City of Stockton 2018).

3.1.2 Existing Ambient Noise Measurements

In order to quantify existing ambient noise levels in the Project Area, ECORP Consulting, Inc. conducted a long-term noise measurement (24-hours) on the Project Site on November 29, 2023, and extending into November 30, 2023. This 24-hour noise measurement site is representative of typical existing noise exposure on the Project Site during a typical 24-hour day (see Attachment A). Additionally, ECORP conducted three short-term measurements (15 minutes) in the neighborhoods immediately surrounding the Project Site. These short-term noise measurements are representative of typical existing noise exposure within and immediately adjacent to the Project Site during the daytime (see Attachment A). The 15-minute measurements were taken between 12:43 p.m. and 1:39 a.m. The average noise levels and sources of noise measured at each location are listed in Table 3-1.

Table 3-1. Existing (Baseline) Noise Measurements						
Location Number	**Location**	**L_{dn}**	**L_{eq}**	**L_{min}**	**L_{max}**	**Time**
15-Minute Measurements						
1	Adjacent to McNair High School Staff Parking Lot and West Lane	-	**63.7**	39.2	79.9	12:43 p.m. – 12:58 p.m.
2	On Tuscany Circle, Adjacent to House #9457	-	**48.5**	38.9	69.7	1:05 p.m. – 1:20 p.m.
3	On West Lane Frontage Road, Adjacent to House #9413	-	**68.8**	45.2	77.7	1:24 p.m. – 1:39 p.m.
24-Hour Measurement						
4	On Project Site, Adjacent to Existing Residence Bisecting Site	**58.4**	53.1	33.3	78.3	1:51 p.m. – 1:51 p.m.

Source: Measurements were taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Attachment A for noise measurement outputs.

Notes: L_{dn} is a 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. L_{eq} is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. L_{min} is the minimum noise level during the measurement period and L_{max} is the maximum noise level during the measurement period.

As shown in Table 3-1, the short-term (15 minutes) ambient recorded noise levels range from 48.5 to 68.8 dBA L_{eq} at the three locations near the Project Site. The long-term (24 hours) ambient recorded noise level recorded on the Project Site is 58.4.0 dBA L_{dn}. The most common noise in the Project vicinity is produced by automotive vehicles (e.g., cars, trucks, buses, motorcycles) on area roadways.

4.0 REGULATORY FRAMEWORK

4.1 Federal

4.1.1 Occupational Safety and Health Act of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an eight-hour work shift (29 Code of Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.1.2 National Institute of Occupational Safety and Health

A division of the US Department of Health and Human Services, the National Institute for Occupational Safety and Health (NIOSH) has established a construction-related noise level threshold as identified in the Criteria for a Recommended Standard: Occupational Noise Exposure prepared in 1998. NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. The intention of these thresholds is to protect people from hearing losses resulting from occupational noise exposure.

4.2 State

4.2.1 State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

4.2.2 State Office of Planning and Research Noise Element Guidelines

The State OPR *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a Land Use Compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.2.3 California Department of Transportation

In 2020, Caltrans published the Transportation and Construction Vibration Manual (Caltrans 2020b). The manual provides general guidance on vibration issues associated with the construction and operation of projects concerning human perception and structural damage. Table 2-2 above presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

4.3 Local

4.3.1 City of Stockton General Plan

The City of Stockton General Plan Safety Chapter strives to curb noise impacts from existing sources and prevent adverse effects from potential new sources. The noise element establishes policies and actions to limit the impacts of noise on residents and employees within the City. The following are applicable to the Project:

Action SAF-2.5B: Require projects that would locate noise sensitive land uses where the projected ambient noise level is greater than the "normally acceptable" noise level indicated on Table 5-1 [Table 4-1 of this Report] to provide an acoustical analysis that shall:

- Be the responsibility of the applicant;
- Be prepared by a qualified person experienced in the fields of environmental noise assessment and architectural acoustics;
- Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions;
- Estimate existing and projected (20-year) noise levels in terms of L_{dn}/CNEL and compare the levels to the adopted noise policies and actions in this General Plan;
- Recommend appropriate mitigation to achieve compatibility with the adopted noise policies and standards;
- Where the noise source in question consists of intermittent single events, address the effects of maximum noise levels in sleeping rooms in terms of possible sleep disturbance;
- Estimate noise exposure after the prescribed mitigation measures have been implemented;
- If the project does not comply with the adopted standards and policies of this General Plan, provide acoustical information for a statement of overriding considerations for the project; and
- Describe a post-project assessment program, which could be used to evaluate the effectiveness of the proposed mitigation measures.

Action SAF-2.5E: Require all new habitable structures to be set back from railroad tracks to protect residents from noise, vibration, and safety impacts.

Table 4-1. Maximum Allowable Noise Exposure by Land Use			
Land Use	**Noise Level, dBA L_{dn}**		
	Normally Acceptable	**Conditionally Acceptable**	**Unacceptable**
Residential	0 – 60	61 – 70	>70
Urban Residential Infill*	0 – 70	71 – 80	>80
Hotels, Motels	0 – 60	61 – 75	>75
Schools, Libraries, Churches, Hospitals, Extended Care Facilities	0 – 60	61 – 70	>70
Auditoriums, Concert Halls, Amphitheaters	N/A	0 – 70	>70
Sports Arenas, Outdoor Spectator Sports	0 – 55	56 – 75	>75
Playgrounds, Neighborhood Parks	0 – 70	N/A	>70
Golf Courses, Riding Stables, Water Recreation, Cemeteries	0 – 65	66 – 80	>80
Office Buildings, Business Commercial and Professional	0 – 65	66 – 80	>80
Mining, Industrial, Manufacturing, Utilities, Agriculture	0 – 70	71 – 80	>80

Source: City of Stockton 2018
Notes:
Normally Acceptable = Specified land use is satisfactory based on the assumption that any buildings involved are of normal, conventional construction, without any special noise insulation requirements.
Conditionally Acceptable = New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design.
Unacceptable = New construction or development should not be undertaken.
*Urban residential infill applies to residential uses in the Greater Downtown.

4.3.2 City of Stockton Municipal Code

The City of Stockton Municipal Code, Chapter 16.60, specifies noise regulations within the City. Specifically, Section 16.60.040 presents general nose limits for various land uses. The noise limits that pertain to the Project are presented in Table 4-2.

Table 4-2. Maximum Allowable Noise Exposure for Noise-Sensitive Land Uses		
Part I: Transportation-Related Noise Standards		
Noise-Sensitive Land Use Type	**Maximum Allowable Noise Exposure (L_{dn})**	
	Outdoor Activity Areas	**Indoor Spaces**
Residential (all types)	65	45
Childcare	--	45
Educational Facilities	--	45
Libraries and Museums	--	45
Live-Work Facilities	65	45
Lodging	65	45
Medical Services	--	45
Multi-Use (with Residential)	65	45
Part II: Land Use-Related Noise Standard		
Noise Level Descriptor	**Outdoor Activity Areas**	
	Day (7:00 a.m. to 10:00 p.m.)	**Night (10:00 p.m. to 7:00 a.m.**
Hourly Equivalent Sound Level (L_{eq})	55	45
Maximum Sound Level (L_{max})	75	65

Source: City of Stockton 2023
Notes:
The noise standard shall be applied at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards shall be applied on the receiving side of noise barriers or other property line noise mitigation measures.
Each of the noise level standards specified shall be decreased by five (5) for impulse noise, simple tone noise, or noise consisting primarily of speech or music.

Section 16.60.030 deems the following activities as violations of the Noise Control Ordinance: construction noise between the hours of 10:00 p.m. and 7:00 a.m., loading and unloading operations between the hours of 10:00 p.m. and 7:00 a.m., public nuisance noise, and stationary non-emergency signaling devices, among other activities. Regarding construction noise, Section 16.60.030 also includes restrictions on construction noise. This section prohibits operating or causing the operation of tools or equipment on private property used in alteration, construction, demolition, drilling, or repair work between the hours of 10:00 p.m. and

7:00 a.m. so that the sound creates a noise disturbance across a residential property line, except for emergency work of public service utilities.

Stockton Municipal Code Section 16.32.100 includes qualitative benchmarks for reducing vibration effects within Stockton. Land uses that generate vibrations may not generate ground vibration that is perceptible by the average person without instruments at any point along or beyond the property line of the parcel containing the activities. Such uses also may not generate vibrations that cause discomfort or annoyance to reasonable persons of normal sensitivity or that endangers the comfort, repose, health, or peace of residents whose property abuts the use. Vibrations from temporary construction and demolition activities are exempt from the provisions of this section, as are vehicles that leave the subject parcel (e.g., trucks, trains, and aircraft).

5.0 Impact Assessment

5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would result in the:

1) 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.

2) Generation of excessive groundborne vibration or groundborne noise levels.

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

For the purposes of this analysis, Project construction noise is compared to the NIOSH standard of 85 dBA for more than 8 hours per day, since construction work for the Proposed Project is anticipated to span a typical workday of 8 hours daily. Construction vibration will be compared to the Caltrans recommended standard of 0.3 inch per second PPV with respect to the prevention of structural damage for older residential buildings. This is also the level at which vibrations may begin to annoy people in buildings. The Project would not be a source of groundborne vibration during operations. The determination of Project noise/land use compatibility is addressed consistent with the standards established in City of Stockton General Plan Action SAF-2.5B (see Table 4-1). Noise as a result of Project operations is compared to the noise standards presented in the City's Municipal Code (see Table 4-2).

5.2 Methodology

This analysis of the existing and future noise environments is based on empirical observations and noise prediction modeling. Predicted construction noise levels were calculated utilizing the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (2006). Groundborne vibration levels associated with construction-related activities for the Project have been evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance. The assessment of the noise/land use compatibility of the Project's proposal to locate sensitive noise receptors within the existing noise environment affecting the Project Site was completed by conducting a long-term (24 hour) existing ambient baseline noise measurement on the Project Site from November 29 to November 30 with the use of a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute standard for general environmental noise measurement instrumentation (see Measurement Location 4 in Table 3-1 above). This 24-hour measurement is presented in the noise metric, dBA L_{dn}, consistent with the metric used in the City's

noise/land use compatibility standard (see Table 4-1 above). As previously described, L_{dn} is 24-hour average L_{eq} with a 10-dBA "weighting" added to noise during the hours of 10:00 pm to 7:00 am to account for noise sensitivity in the nighttime. It should be noted that the measured L_{dn} at Measurement Location 4 in Table 3-1 differs from measured levels at Measurement Locations 1 - 3 in that Measurements 1 – 3 represent a sampling (15 minutes) of daytime noise levels in the neighborhoods surrounding the Project Site and are therefore reported in the L_{eq} noise metric. For the purposes of determining noise/land use compatibility, a 24-hour noise measurement is required. Offsite Project traffic noise and onsite noise sources produced by the Project are discussed qualitatively.

5.3 Impact Analysis

5.3.1 Would the Project Result in Short-Term Construction-Generated Noise in Excess of City Standards?

Onsite Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the specific nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., site preparation, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The Project Site is surrounded mainly by residential land uses. The nearest noise-sensitive receptors to the Project Site include the residences fronting Sutherland Drive directly to the south. There is also a single-family residential property bisecting the Project Site. Ronald E. McNair High School, to the north of the Project Site across Ronald E. McNair Way, is also considered a noise-sensitive receptor. There are also residences to the southwest and southeast of the Project Site. The City does not promulgate a numeric threshold pertaining to the noise associated with construction. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Instead, construction noise is regulated by allowable hours of construction. Section 16.60.030 of the City's Municipal Code prohibits construction between the hours of 10:00 p.m. and 7:00 a.m. The Project is required to adhere to the City Municipal Code and this construction timing limitation.

To estimate the worst-case onsite construction noise levels that may occur at the nearest noise-sensitive receptors and in order to evaluate the potential health-related effects (physical damage to the ear) from construction noise, the construction equipment noise levels were calculated using the Federal Highway Administration's Roadway Noise Construction Model and compared against the construction-related noise level threshold established in the Criteria for a Recommended Standard: Occupational Noise Exposure

prepared in 1998 by NIOSH. A division of the U.S. Department of Health and Human Services, NIOSH identifies a noise level threshold based on the duration of exposure to the source. The NIOSH construction-related noise level threshold starts at 85 dBA for more than 8 hours per day; for every 3-dBA increase, the exposure time is cut in half. This reduction results in noise level thresholds of 88 dBA for more than 4 hours per day, 92 dBA for more than 1 hour per day, 96 dBA for more than 30 minutes per day, and up to 100 dBA for more than 15 minutes per day. For the purposes of this analysis, the lowest, more conservative threshold of 85 dBA L_{eq} is used as an acceptable threshold for construction noise at the nearby sensitive receptors.

Construction equipment anticipated to be used for Project construction is provided by the California Emissions Estimator Model (CalEEMod 2022.1). CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. The anticipated construction equipment for each specific construction activity (i.e., site preparation, grading, building construction, etc.) is then entered individually into the FHWA's Roadway Construction Model.

It is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Site and at various distances from sensitive receptors. Therefore, this analysis employs FTA guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment simultaneously from the center of the Project Site (FTA 2018), which in this case is approximately 100 feet from single-family residence bisecting the Project Site. The anticipated short-term construction noise levels generated for the necessary equipment for each phase of construction are presented in Table 5-1.

Table 5-1. Bear Creek Phase 1 Construction Average (dBA) Noise Levels at Project Area Receptors

Construction Phase	Estimated Exterior Construction Noise Level @ Closest Receptor (L_{eq} dBA)	NIOSH Construction Noise Standard (L_{eq} dBA)	Exceeds Standard?
Site Preparation	78.3	*85*	**No**
Grading	81.0	*85*	**No**
Building Construction	80.2	*85*	**No**
Paving	80.5	*85*	**No**
Painting	67.7	*85*	**No**

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment B for Model Data Outputs.

Notes: Construction equipment used during construction is provided by the California Emissions Estimator Model. The California Emissions Estimator Model contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. Consistent with FTA recommendations for calculating construction noise, construction noise was modeled accounting for all construction equipment operating simultaneously from the center of the Project Site (FTA 2018).

L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 5-1, construction activities would not exceed the applicable noise standards. It is noted that construction noise was modeled on a worst-case basis. It is unlikely that all pieces of construction equipment would be operating at the same time for the various phases of Project construction.

While no noise standard would be exceeded by construction of the Proposed Project, the Project Site is located directly adjacent to several noise-sensitive receptors and therefore the following best management practices are recommended during the times when construction occurs:

Mitigation Measure NOI-1: The following measures shall be applied to the Project during construction:

1. All construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers, consistent with manufacturer standards.
2. All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the Project Site.
3. As applicable, shut off all equipment when not in use.
4. Equipment staging shall be located in areas that create the greatest distance between construction-related noise/vibration sources and sensitive receptors surrounding the project site.

5. Jackhammers, pneumatic equipment, and all other portable stationary noise sources will be directed away from the noise sensitive receptors nearest the Project Site to the extent possible. Either one-inch plywood or sound blankets can be utilized for this purpose. One-inch plywood and/or sound blankets should reach up from the ground and block the line of sight between equipment and the nearest off-site residences. The shielding should be without holes and cracks.

6. No amplified music and/or voice will be allowed on the construction site.

Offsite Construction Worker Trips

Project construction would result in additional traffic on adjacent roadways over the period that construction occurs. According to the California Emissions Estimator Model, which is used to predict the number of construction-related automotive trips, the maximum number of Project construction trips traveling to and from the Project Site during a single construction phase would not be expected to exceed 44 daily trips in total (34 worker commute trips and 10 vendor truck trips). According to the Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). Per the City of Stockton General Plan Transportation Chapter (2018), the primary Project access roads, Morada Lane and West Lane, are classified as Arterial roadways that accommodate between 20,000 to 50,000 automobile trips daily. Additionally, Tam O' Shanter Drive is classified as a Collector roadway that accommodates up to 10,000 automobile trips daily. Thus, Project construction would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible.

5.3.2 Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of City Standards During Operations?

As previously described, noise sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The nearest noise-sensitive receptors to the Project Site include the residences fronting Sutherland Drive directly to the south. There is also a single-family residential property bisecting the Project Site. Ronald E. McNair High School, to the north of the Project Site across Ronald E. McNair Way, is also considered a noise-sensitive receptor. There are also residences to the southwest and southeast of the Project Site.

Project Land Use Compatibility

The City of Stockton uses the noise/land use compatibility matrix presented in the General Plan Noise Element, which provides the City with a tool to gauge the compatibility of new land users relative to existing noise levels. This table, presented as Table 5-1, *Maximum Allowable Noise Exposure by Land Use* (see Table 4-1 of this Report), in the General Plan, identifies normally acceptable, conditionally acceptable and unacceptable exterior noise levels for various land uses, including single-family residential land uses such as those proposed by the Project. In the case that the noise levels identified at the Proposed Project Site

are measured within noise levels presented in the General Plan as normally acceptable, the Project is considered compatible with the existing noise environment. In the case that noise levels measured at the Project Site lay within the ranges identified as conditionally acceptable, new development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed insulation features have been included in the design. New construction or development should generally not be undertaken in areas identified as unacceptable.

As previously stated, the Project is proposing the construction of 93 single-family residential units. Table 5-1 in the General Plan Noise Element (Table 4-1 of this Report) identifies the normally acceptable noise standard for single-family residential land uses as any noise level under 60 dBA L_{dn}. In order to quantify existing ambient noise levels in the Project Area, ECORP conducted a 24-hour noise measurement from November 29, 2023, extending into November 30. The 24-hour noise measurement is representative of the typical existing noise exposure on the Project Site over the span of a typical 24-hour period. As shown in Table 3-1 above (see Measurement Location 4), the ambient noise level recorded on the Project Site is 58.4 dBA L_{dn}, with the predominant noise sources in the area being vehicle traffic on area roadways. This noise level is below the City's land use compatibility noise standard of 60 dBA L_{dn} for single-family residential land uses. Therefore, the Project Site is considered an appropriate noise environment to locate the proposed land use. It is noted that the measured L_{dn} at Measurement Location 4 in Table 3-1 differs from measured levels at Measurement Locations 1 - 3 in that Measurements 1 – 3 represent a sampling (15 minutes) of daytime noise levels in the neighborhoods surrounding the Project Site. Additionally, the Project Site is predominately surrounded by residential land uses and therefore is consistent with the types, intensity, and patterns of land use existing in the Project Area.

Operational Onsite Noise

The main noise source generated from the proposed residences on the Project Site would include mechanical equipment and other typical sources specific to residential neighborhoods, such as barking dogs, internal traffic circulation, power tools and landscaping equipment, radios, and people talking. According to previous field noise measurements conducted by ECORP, mechanical heating, ventilation, and air conditioning equipment generates noise levels less than 45 dBA at 20 feet. This noise level is less than the City's daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise standard for land use (non-transportation) noise sources as presented in the City's Municipal Code (Table 4-2 of this Report). Additionally, previous field measurements at six different residential neighborhoods, including two multi-family neighborhoods, two single-family neighborhoods, and two mixed density neighborhoods provide a daytime average of 51.9 dBA, which is under the City's daytime standard. The Project proposes to place residential uses adjacent to other residential uses. The most basic planning strategy to minimize adverse impacts on new and existing land uses due to noise is to avoid designating certain land uses at locations within the community that would negatively affect noise sensitive land uses. The Project proposes a residential neighborhood in an area surrounded by predominately by residential land uses and is therefore consistent with the types, intensity, and patterns of land use existing in the Project Area. It can be expected that once operational, the Project would generate daytime and nighttime noise at similar levels currently generated by the surrounding, existing residential neighborhoods.

Operational Offsite Traffic Noise

The Proposed Project would subdivide a portion of a parcel into 93 single-family residential lots, various open space lots and landscape strips. The Project also proposes an off-site stormwater detention basin and the extension of Tam O' Shanter Drive from its current terminus at the southwest corner of the Project Site to Ronald McNair Way. Once operational, the Project Site would be accessed from Morada Lane. A secondary/emergency vehicle access to the Project would be provided at the existing West Lane Frontage Road. According to the Institute of Transportation Engineers' 10th Edition Trip Generation Manual (2017), single family homes generate an average of 9.44 trips daily, and therefore these 93 proposed residences could be expected to contribute up to 877 traffic trips daily to these Project vicinity roadways (93 x 9.44= 877).

According to Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). Per the City of Stockton General Plan Transportation Chapter (2018), the primary Project access road, Morada Lane, is classified as an Arterial roadway that accommodates between 20,000 to 50,000 automobile trips daily. Similarly, West Lane, which traverses the eastern boundary of the Project Site is classified as an Arterial roadway that accommodates between 20,000 to 50,000 automobile trips daily. Additionally, Tam O' Shanter Drive is classified as a Collector roadway that accommodates up to 10,000 automobile trips daily. Thus, Project operations would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible.

5.3.3 Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Project would be primarily associated with short-term construction-related activities. Construction on the Project Site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. Vibration decreases rapidly with distance, and it is acknowledged that construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in Table 5-2.

Table 5-2. Representative Vibration Source Levels for Construction Equipment	
Equipment Type	**Peak Particle Velocity at 25 Feet (inches per second)**
Large Bulldozer	0.089
Caisson Drilling	0.089
Pile Driver	0.170
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: FTA 2018; Caltrans 2020b

It is noted that Caltrans recommends a standard of 0.3 inches per second PPV with respect to the prevention of structural damage for older residential buildings (Caltrans 2020b). This is also the level at which vibrations may begin to annoy people in buildings (Caltrans 2020b). As shown in Table 5-2, the most impactful construction equipment would only result in vibrations of 0.21 inch per second PPV at 25 feet. While there are existing structures located directly adjacent to the Project Site, construction activities would occur throughout the Project Site and would not be concentrated at the point closest to sensitive receptors. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. Thus, onsite Project construction would not exceed the Caltrans threshold.

The City does not regulate or have a numeric threshold associated with construction vibrations. As previously stated, Stockton Municipal Code Section 16.32.100 includes qualitative benchmarks for reducing vibration effects within Stockton. Vibrations from temporary construction and demolition activities are exempt from the provisions of Section 16.32.100, as are vehicles that leave the subject parcel (e.g., trucks, trains, and aircraft).

5.3.4 Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. Therefore, the Project would result in negligible groundborne vibration impacts during operations.

5.3.5 Would the Project Expose People Residing or Working in the Project area to Excessive Airport Noise?

The nearest airport to the Project Site is the Stockton Metropolitan Airport located approximately 9.5 miles south of the Project Site. According to the Stockton Metropolitan Airport Land Use Compatibility Plan Exhibit 2F (2016), the Project Site is located outside of all airport noise contours. Implementation of the Proposed Project would not affect airport operations nor result in increased exposure of people on the Project Site to aircraft noise.

5.4 Summary

The Proposed Project has been analyzed for potential noise-related effects associated with Project construction, Project Site noise/land use compatibility, Project onsite operations, Project generated offsite traffic, Project groundborne vibrations, and Project Site exposure to excessive airport noise.

As identified above, Section 16.60.030 of the City's Municipal Code prohibits construction between the hours of 10:00 p.m. and 7:00 a.m. and the Project is required to adhere to the City Municipal Code and this construction timing limitation. Furthermore, as shown in Table 5-1 above, construction activities would not exceed NIOSH noise standards, which are intended to protect people from hearing losses resulting from occupational noise exposure. Nonetheless, while no noise standard would be exceeded by construction of the Proposed Project, the Project Site is located directly adjacent to several noise-sensitive receptors and therefore noise-reducing best management practices are recommended during the times when construction occurs.

The City of Stockton uses the noise/land use compatibility matrix presented in the General Plan Noise Element, which provides the City with a tool to gauge the compatibility of new land users relative to existing noise levels. The ambient noise level recorded on the Project Site is 58.4 dBA L_{dn}, with the predominant noise sources in the area being vehicle traffic on area roadways. This noise level is below the City's land use compatibility noise standard of 60 dBA L_{dn} for single-family residential land uses.

The Project proposes a residential neighborhood in an area surrounded by predominately by residential land uses and is therefore consistent with the types, intensity, and patterns of land use existing in the Project Area. It can be expected that once operational, the Project would generate daytime and nighttime noise at similar levels currently generated by the surrounding, existing residential neighborhoods.

According to Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), a doubling of traffic on a roadway is required to result in an increase of 3 dB (outside of the laboratory, a 3-dBA change is considered a just-perceivable difference). As demonstrated, Project operations would not result in a doubling of traffic on the local transportation network, and therefore its contribution to existing traffic noise would not be perceptible.

As identified, Stockton Municipal Code Section 16.32.100 includes qualitative benchmarks for reducing vibration effects within Stockton. Vibrations from temporary construction and demolition activities are exempt from the provisions of Section 16.32.100, as are vehicles that leave the subject parcel (e.g., trucks,

trains, and aircraft). Further, the Project would result in negligible groundborne vibration impacts during operations.

According to the Stockton Metropolitan Airport Land Use Compatibility Plan Exhibit 2F (2016), the Project Site is located outside of all airport noise contours. Implementation of the Proposed Project would not affect airport operations nor result in increased exposure of people on the Project Site to aircraft noise.

There are no substantial noise-related impacts associated with the Proposed Project.

6.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – Baseline (Existing) Noise Measurements – Project Vicinity

Attachment B – Federal Highway Administration Roadway Construction Noise Model Outputs – Project Construction

ATTACHMENT A

Baseline (Existing) Noise Measurements – Project Vicinity

Site Number: 1			
Recorded By: Rosey Worden			
Job Number: 2023-214			
Date: 11/29/2023			
Time: 12:43 p.m. – 12:58 p.m.			
Location: Adjacent to McNair High School staff parking lot and West Lane.			
Source of Peak Noise: Vehicles on West Lane.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
63.7	39.2	79.9	100.3

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0006133**	**05/25/2023**	
	Microphone	**Larson Davis**	**377B02**	**346688**	**05/23/2023**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**069947**	**05/25/2023**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**05/12/2023**	

Weather Data			
Est.	**Duration:** 15 min.		**Sky:** Clear
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 4
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4	58	29.99

Photo of Measurement Location

EXHIBIT 1

Measurement Report

Report Summary

Meter's File Name	LxT_Data.046.s	Computer's File Name	LxT_0006133-20231129 124302-LxT_Data.046.ldbin
Meter	LxT1 0006133	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-29 12:43:02	Duration	0:15:00.0		
End Time	2023-11-29 12:58:02	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-29 10:19:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	63.7 dB		
LAE	93.2 dB	SEA	--- dB
EA	234.4 µPa²h		
EA8	7.5 mPa²h		
EA40	37.5 mPa²h		
LZS_{peak}	100.3 dB	2023-11-29 12:57:14	
LAS_{max}	79.9 dB	2023-11-29 12:52:35	
LAS_{min}	39.2 dB	2023-11-29 12:52:14	
LA_{eq}	63.7 dB		
LC_{eq}	69.5 dB	LC_{eq} - LA_{eq}	5.8 dB
LAI_{eq}	65.8 dB	LAI_{eq} - LA_{eq}	2.1 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
63.7 dB	63.7 dB	0.0 dB

LDEN	LDay	LEve	LNight
63.7 dB	63.7 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	63.6 dB		--- dB		--- dB	
$LS_{(max)}$	79.9 dB	2023-11-29 12:52:35	--- dB	None	--- dB	None
$LS_{(min)}$	39.2 dB	2023-11-29 12:52:14	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	100.3 dB	2023-11-29 12:57:14

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	70.8 dB
LAS 10.0	67.6 dB
LAS 33.3	57.1 dB
LAS 50.0	51.3 dB
LAS 66.6	47.7 dB
LAS 90.0	43.0 dB

Site Number: 2
Recorded By: Rosey Worden
Job Number: 2023-214
Date: 11/29/2023
Time: 1:05 p.m. – 1:20 p.m.
Location: On Tuscany Circle adjacent to house 9457
Source of Peak Noise: Vehicles on Tuscany Circle and neighborhood noise (car door opening & closing, people talking, etc.)

Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
48.5	38.9	69.7	101.6

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0006133**	**05/25/2023**	
	Microphone	**Larson Davis**	**377B02**	**346688**	**05/23/2023**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**069947**	**05/25/2023**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**05/12/2023**	

Weather Data			
Est.	**Duration:** 15 min.		**Sky:** Clear
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 4
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4	58	29.99

Photo of Measurement Location

EXHIBIT 1

Measurement Report

Report Summary

Meter's File Name	LxT_Data.047.s	Computer's File Name	LxT_0006133-20231129 130521-LxT_Data.047.ldbin
Meter	LxT1 0006133	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-29 13:05:21	Duration	0:15:00.0		
End Time	2023-11-29 13:20:21	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-29 10:19:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	48.5 dB		
LAE	78.0 dB	SEA	--- dB
EA	7.1 µPa²h		
EA8	226.5 µPa²h		
EA40	1.1 mPa²h		
LZS_{peak}	101.6 dB	2023-11-29 13:08:08	
LAS_{max}	69.7 dB	2023-11-29 13:08:16	
LAS_{min}	38.9 dB	2023-11-29 13:10:16	
LA_{eq}	48.5 dB		
LC_{eq}	62.7 dB	LC_{eq} - LA_{eq}	14.2 dB
LAI_{eq}	58.3 dB	LAI_{eq} - LA_{eq}	9.8 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
48.5 dB	48.5 dB	0.0 dB

LDEN	LDay	LEve	LNight
48.5 dB	48.5 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	48.5 dB		--- dB		--- dB	
$LS_{(max)}$	69.7 dB	2023-11-29 13:08:16	--- dB	None	--- dB	None
$LS_{(min)}$	38.9 dB	2023-11-29 13:10:16	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	101.6 dB	2023-11-29 13:08:08

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	52.1 dB
LAS 10.0	49.8 dB
LAS 33.3	45.8 dB
LAS 50.0	44.3 dB
LAS 66.6	43.1 dB
LAS 90.0	41.3 dB

Site Number: 3			
Recorded By: Rosey Worden			
Job Number: 2023-214			
Date: 11/29/2023			
Time: 1:24 p.m. – 1:39 p.m.			
Location: On West Lane Frontage Road adjacent to house 9413.			
Source of Peak Noise: Vehicles on West Lane.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
68.8	45.2	77.7	104.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0006133**	**05/25/2023**	
	Microphone	**Larson Davis**	**377B02**	**346688**	**05/23/2023**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**069947**	**05/25/2023**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**05/12/2023**	

Weather Data			
Est.	**Duration:** 15 min.	**Sky:** Clear	
	Note: dBA Offset = 0.01	**Sensor Height (ft):** 4	
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4	58	29.99

Photo of Measurement Location

EXHIBIT 1

Measurement Report

Report Summary

Meter's File Name	LxT_Data.048.s	Computer's File Name	LxT_0006133-20231129 132429-LxT_Data.048.ldbin
Meter	LxT1 0006133	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-29 13:24:29	Duration	0:15:00.0		
End Time	2023-11-29 13:39:29	Run Time	0:15:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-29 10:19:05	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	68.8 dB		
LAE	98.3 dB	SEA	--- dB
EA	758.6 µPa²h		
EA8	24.3 mPa²h		
EA40	121.4 mPa²h		
LZS_{peak}	104.5 dB	2023-11-29 13:38:14	
LAS_{max}	77.7 dB	2023-11-29 13:33:41	
LAS_{min}	45.2 dB	2023-11-29 13:33:07	
LA_{eq}	68.8 dB		
LC_{eq}	74.7 dB	LC_{eq} - LA_{eq}	5.9 dB
LAI_{eq}	70.9 dB	LAI_{eq} - LA_{eq}	2.1 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
68.8 dB	68.8 dB	0.0 dB

LDEN	LDay	LEve	LNight
68.8 dB	68.8 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	68.8 dB		--- dB		--- dB	
$LS_{(max)}$	77.7 dB	2023-11-29 13:33:41	--- dB	None	--- dB	None
$LS_{(min)}$	45.2 dB	2023-11-29 13:33:07	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	104.5 dB	2023-11-29 13:38:14

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	74.4 dB
LAS 10.0	73.4 dB
LAS 33.3	68.8 dB
LAS 50.0	64.5 dB
LAS 66.6	60.7 dB
LAS 90.0	54.4 dB

Site Number: 4			
Recorded By: Rosey Worden			
Job Number: 2023-214			
Date: 11/29/2023 – 11/30/2023			
Start Time: 1:51 p.m.			
Location: On Project Site adjacent to existing residence.			
Source of Peak Noise: Vehicles on adjacent roadways.			
Noise Data			
L_{dn} (dB)	**Leq (dB)**	**Lmin (dB)**	**Lmax (dB)**
58.4	53.1	33.3	78.3

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0006133**	**05/25/2023**	
	Microphone	**Larson Davis**	**377B02**	**346688**	**05/23/2023**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**069947**	**05/25/2023**	
	Calibrator	**Larson Davis**	**CAL200**	**17325**	**05/12/2023**	

Weather Data			
Est.	**Duration:** 24 hr.	**Sky:** Clear	
	Note: dBA Offset = 0.01	**Sensor Height (ft):** 4	
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	4	58	29.99

Photo of Measurement Location

EXHIBIT 1

Measurement Report

Report Summary

Meter's File Name	LxT_Data.049.s	Computer's File Name	LxT_0006133-20231129 135139-LxT_Data.049.ldbin
Meter	LxT1 0006133	Firmware	2.404
User		Location	
Job Description			
Note			

Start Time	2023-11-29 13:51:39	Duration	24:00:00.0		
End Time	2023-11-30 13:51:39	Run Time	24:00:00.0	Pause Time	0:00:00.0
Pre-Calibration	2023-11-29 13:47:39	Post-Calibration	None	Calibration Deviation	---

Results

Overall Metrics

LA_{eq}	53.1 dB		
LAE	102.5 dB	SEA	--- dB
EA	2.0 mPa²h		
EA8	653.4 µPa²h		
EA40	3.3 mPa²h		
LZS_{peak}	112.4 dB	2023-11-29 13:51:46	
LAS_{max}	78.3 dB	2023-11-29 13:51:46	
LAS_{min}	33.3 dB	2023-11-30 00:27:40	
LA_{eq}	53.1 dB		
LC_{eq}	59.2 dB	LC_{eq} - LA_{eq}	6.1 dB
LAI_{eq}	56.4 dB	LAI_{eq} - LA_{eq}	3.3 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LZSpk > 135.0 dB	0	0:00:00.0
LZSpk > 137.0 dB	0	0:00:00.0
LZSpk > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
58.4 dB	53.7 dB	0.0 dB

LDEN	LDay	LEve	LNight
58.8 dB	53.7 dB	53.9 dB	51.7 dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	53.1 dB		--- dB		--- dB	
$LS_{(max)}$	78.3 dB	2023-11-29 13:51:46	--- dB	None	--- dB	None
$LS_{(min)}$	33.3 dB	2023-11-30 00:27:40	--- dB	None	--- dB	None
$L_{Peak(max)}$	--- dB	None	--- dB	None	112.4 dB	2023-11-29 13:51:46

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	57.8 dB
LAS 10.0	56.1 dB
LAS 33.3	52.3 dB
LAS 50.0	50.3 dB
LAS 66.6	48.2 dB
LAS 90.0	43.5 dB

ATTACHMENT B

Federal Highway Administration Roadway Construction Noise Model Outputs – Project Construction

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/30/2023
Case Description: Bear Creek Phase 1 - Site Preparation

Description	**Affected Land Use**
Site Preparation	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**	**Estimated Shielding (dBA)**
Dozer	No	40		81.7	100	0
Dozer	No	40		81.7	100	0
Dozer	No	40		81.7	100	0
Backhoe	No	40		77.6	100	0
Backhoe	No	40		77.6	100	0
Backhoe	No	40		77.6	100	0
Backhoe	No	40		77.6	100	0

Results

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Dozer		75.6	71.7
Dozer		75.6	71.7
Dozer		75.6	71.7
Backhoe		71.5	67.6
Backhoe		71.5	67.6
Backhoe		71.5	67.6
Backhoe		71.5	67.6
	Total	75.6	**78.3**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/30/2023
Case Description: Bear Creek Phase 1 - Grading

Description	**Affected Land Use**
Grading	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**	**Estimated Shielding (dBA)**
Grader	No	40	85		100	0
Excavator	No	40		80.7	100	0
Excavator	No	40		80.7	100	0
Backhoe	No	40		77.6	100	0
Backhoe	No	40		77.6	100	0
Scraper	No	40		83.6	100	0
Scraper	No	40		83.6	100	0
Dozer	No	40		81.7	100	0

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Grader	79	75
Excavator	74.7	70.7
Excavator	74.7	70.7
Backhoe	71.5	67.6
Backhoe	71.5	67.6
Scraper	77.6	73.6
Scraper	77.6	73.6
Dozer	75.6	71.7
Total	79	**81**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/30/2023
Case Description: Bear Creek Phase 1 - Building Construction

Description	**Affected Land Use**
Building Construction	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**	**Estimated Shielding (dBA)**
Gradall	No	40		83.4	100	0
Gradall	No	40		83.4	100	0
Gradall	No	40		83.4	100	0
Generator	No	50		80.6	100	0
Crane	No	16		80.6	100	0
Welder / Torch	No	40		74	100	0
Backhoe	No	40		77.6	100	0
Backhoe	No	40		77.6	100	0
Backhoe	No	40		77.6	100	0

Results

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Gradall		77.4	73.4
Gradall		77.4	73.4
Gradall		77.4	73.4
Generator		74.6	71.6
Crane		74.5	66.6
Welder / Torch		68	64
Backhoe		71.5	67.6
Backhoe		71.5	67.6
Backhoe		71.5	67.6
	Total	77.4	**80.2**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/30/2023
Case Description: Bear Creek Phase 1 - Paving

Description	**Affected Land Use**
Paving	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**	**Estimated Shielding (dBA)**
Paver	No	50		77.2	100	0
Paver	No	50		77.2	100	0
Pavement Scarafier	No	20		89.5	100	0
Pavement Scarafier	No	20		89.5	100	0
Roller	No	20		80	100	0
Roller	No	20		80	100	0

Results

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Paver	71.2	68.2
Paver	71.2	68.2
Pavement Scarafier	83.5	76.5
Pavement Scarafier	83.5	76.5
Roller	74	67
Roller	74	67
Total	83.5	**80.5**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 11/30/2023
Case Description: Bear Creek Phase 1 - Painting

Description	**Land Use**
Painting	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**	**Estimated Shielding (dBA)**
Compressor (air)	No	40		77.7	100	0

Results

Calculated (dBA)

Equipment		***Lmax**	**Leq**
Compressor (air)		71.6	67.7
	Total	71.6	**67.7**

*Calculated Lmax is the Loudest value.

Appendix G.
Transportation Impact Analysis

Memorandum

WOOD RODGERS
BUILDING RELATIONSHIPS ONE PROJECT AT A TIME

To: James Wong
City of Stockton Public Works - Transportation

From: Mario Tambellini, PE, TE
Nicole Scappaticci, PE

Date: April 18, 2024

Subject: **Bear Creek Residential Transportation Impact Analysis**

1. INTRODUCTION

This memorandum has been prepared to present the results of a Transportation Impact Analysis (TIA) for the proposed Bear Creek Residential Project (Project) located in the City of Stockton (City). The Project would develop 93 single-family residential unit lots contained within a gated community on a currently vacant parcel.

The purpose of this TIA is to address the Project's impacts under the California Environmental Quality Act (CEQA) and evaluate the Project's potential off-site and on-site traffic operations. The CEQA analysis will consider the Project's effects on regional VMT. The local access operations study will be conducted to evaluate the Project's potential off-site traffic operational deficiencies and confirm the adequacy of site access and circulation. The local access operations analysis portion of this TIA includes the following sections:

- Project Description
- Study Facilities and Analysis Scenarios
- Analysis Methodology
- Intersection Operations
- Operational Deficiencies
- Site Access and Internal Circulation

The CEQA impact analysis portion of this TIA includes the following sections:

- Project Impacts on Multimodal Facilities
- Safety Evaluation
- Vehicle Miles Traveled (VMT) Analysis

A Conclusion section is also provided at the end of this memorandum. This TIA has been prepared based on the *Envision Stockton 2040 General Plan* (December 4, 2018) Transportation Element and the *City of Stockton Transportation Impact Analysis Guidelines*.

2. LOCAL ACCESS OPERATIONS ANALYSIS

PROJECT DESCRIPTION

The Project is located at 9473 West Lane on a currently undeveloped site (APN 084-060-10) totaling 13.6 acres. The Project would gain access to the existing roadway network via a new Project driveway ("Street A") intersection with Morada Lane. The Project would also extend Tam O'Shanter Drive north from Sutherland Drive to connect with Ronald E. McNair Way/Morada Lane. The Project site is currently zoned as Low Density Residential (R-1/RL). The Project proposes to develop 93 single-family residential unit lots contained within a gated community. The Project location is included in **Figure 1** and the Project site plan is shown in **Figure 2**.

EXHIBIT 1

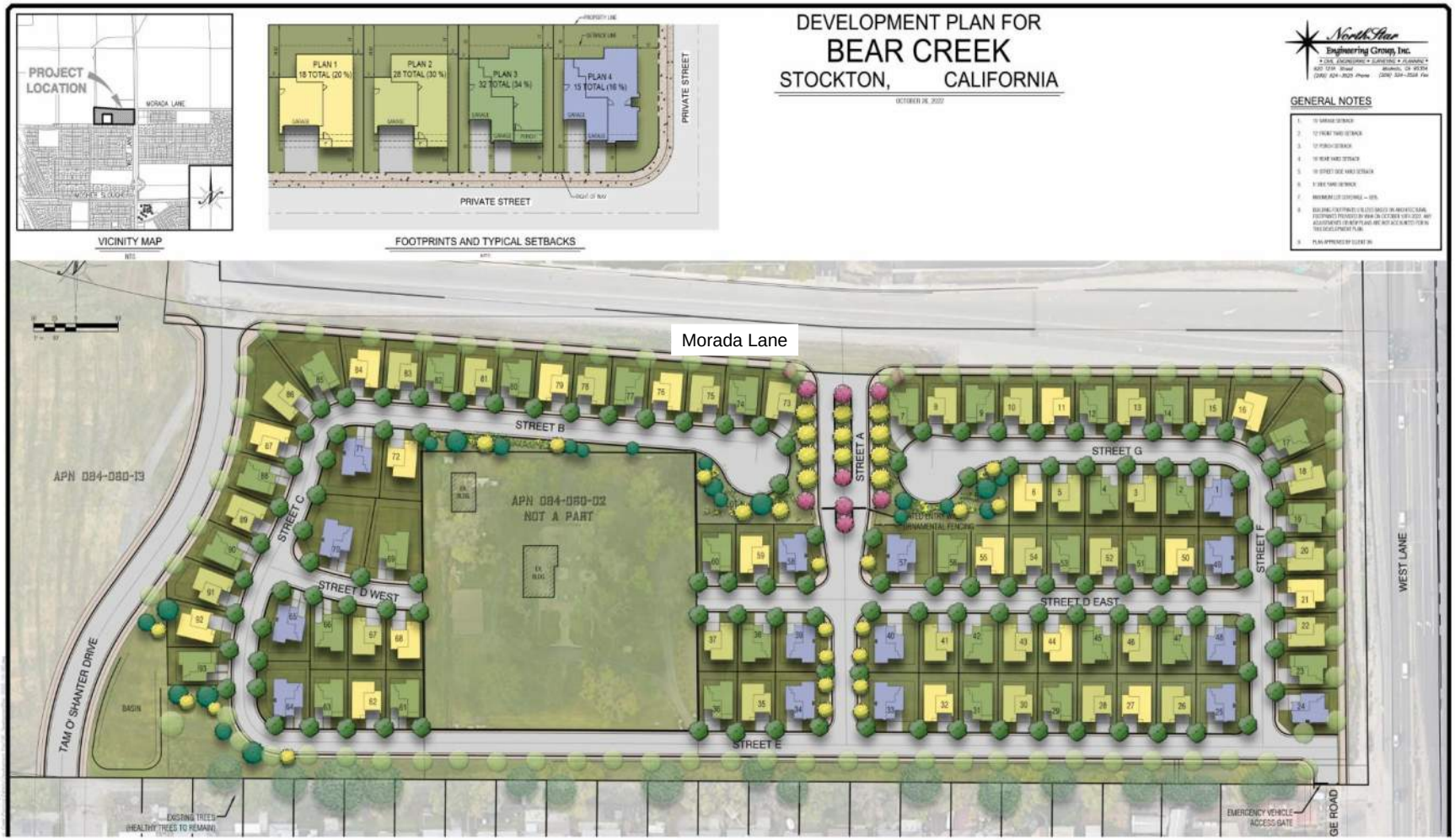
Project Location and Study Facilities
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 1

WOOD RODGERS

\\woodrodgers.loc\ProductionData\Jobs\4000-s\4405001_Bear_Creek_Ph1\GIS\Tasks\Fig_1_Bear_Creek_Study_Facilities.mxd 11/27/2023 3:21:08 PM nscappaticci

Figure 2. Project Site Plan



Illustrative Site Plan

BRIGHT HOMES

BEAR CREEK
STOCKTON, CA

SP1.0

WHA.

STUDY FACILITIES AND ANALYSIS SCENARIOS

Traffic operations analyses were performed under the following scenarios:

- Existing Conditions
- Existing Plus Project Conditions

Note that cumulative future conditions were not analyzed as the Project use is consistent with the existing zoning and General Plan designation for the site and would therefore be consistent with studies performed for the buildout scenario of the City's General Plan. Projects that are consistent with existing zoning typically do not require cumulative analysis. Additionally, VMT, not LOS, is now the primary focus of CEQA transportation analysis, and VMT primarily focuses on an existing plus project conditions analysis. Existing plus project conditions operations were studied in this TIA memorandum to determine how Project traffic would affect existing nearby traffic facilities which already experience high traffic from the nearby school.

The following four (4) intersections were included in this analysis:

1. West Lane & East Morada Lane
2. Library Driveway & Morada Lane
3. High School Parking Lot Driveway & Morada Lane
4. Ronald E. McNair Way & Morada Lane

The locations of the above study intersection are shown in **Figure 1**.

ANALYSIS METHODOLOGY

Level of Service Methodology

Synchro 11 software and Highway Capacity Manual, 6th Edition (HCM 6th Edition) methodology were used to determine intersection delay and level of service (LOS) operations under Existing weekday AM and PM peak hour conditions.

For signalized intersections, the intersection delays and LOS reported are the average values for the whole intersection. For one-way stop-controlled (OWSC) and two-way stop-controlled (TWSC) intersections, the worst approach/movement delay and LOS is reported. The delay-based HCM 6th Edition LOS criteria for different types of intersection controls are outlined in **Table 1**.

Table 1. HCM 6th Edition Intersection LOS Thresholds

Level of Service	Description	Intersection Control Delay (seconds/vehicle)	
		Unsignalized	Signalized
A	Free-flow conditions with negligible to minimal delays.	delay ≤ 10.0	delay ≤ 10.0
B	Good progression with slight delays.	10.0 < delay ≤ 15.0	10.0 < delay ≤ 20.0
C	Relatively higher delays.	15.0 < delay ≤ 25.0	20.0 < delay ≤ 35.0
D	Somewhat congested conditions with longer but tolerable delays.	25.0 < delay ≤ 35.0	35.0 < delay ≤ 55.0
E	Congested conditions with significant delays.	35.0 < delay ≤ 50.0	55.0 < delay ≤ 80.0
F	Jammed or grid-lock type operating conditions.	delay > 50.0	delay > 80.0
Source: HCM 6th Edition Exhibit 19-8 and 20-2.			

HCM 6th Edition reports were generated to determine the delay and LOS at the study intersections in *Synchro 11* software. Existing signal timings for the West Lane & East Morada Lane intersection were obtained from the City and utilized in the analysis.

Signal Warrants

California Manual on Uniform Traffic Control Devices (CA MUTCD) Peak Hour Signal Warrant #3 was used to evaluate the potential need for installation of a traffic signal at unsignalized study intersections.

Level of Service Criteria

As stated in *Envision Stockton 2040 General Plan* Action TR-4.1A, the City currently utilizes LOS D as the minimum acceptable LOS threshold for most intersections within the City. The *City of Stockton Transportation Impact Analysis Guidelines* outlines the following methodology for determining if a Project-related traffic operational deficiency would occur within the context of the Level of Service goals:

- The Project causes an intersection currently operating at acceptable LOS to decrease to an unacceptable LOS; or
- The Project causes an intersection currently operating below acceptable LOS to experience an increase in average delay of 5 seconds or greater.

Multimodal Deficiency Criteria

The *City of Stockton Transportation Impact Analysis Guidelines* outlines the following deficiency criteria for multimodal operations in the City:

Transit: *"A significant impact to the transit system would occur where project generated ridership, when added to existing or future ridership, exceeds available or planned system capacity. Capacity is defined as the total number of passengers the system of busses and light rail vehicles can carry during the peak hours."*

Bicycles: *"A significant bikeway impact would occur if the project hindered or eliminated an existing designated bikeway, or if the project interfered with implementation of a proposed bikeway. A significant bikeway impact could occur if the project were to result in unsafe conditions for bicyclists, including unsafe bicycle/pedestrian or bicycle/motor vehicle conflicts."*

Pedestrians: *"A significant pedestrian circulation impact would occur if the project were to result in unsafe conditions for pedestrians, including unsafe increase in pedestrian/bicycle or pedestrian/motor vehicle conflicts."*

INTERSECTION OPERATIONS

Existing Traffic Counts

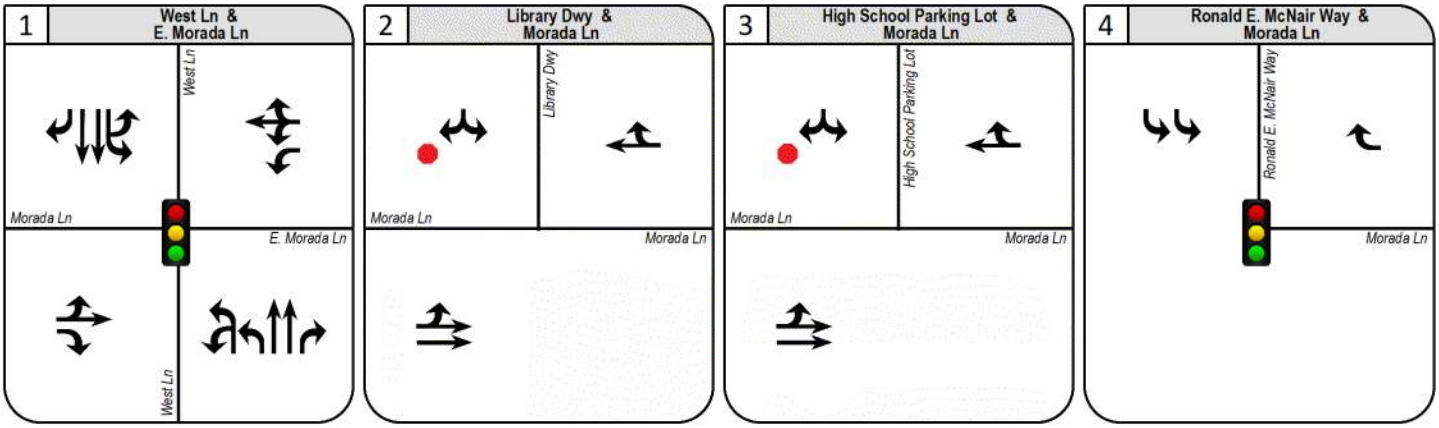
Due to the Project's proximity to Ronald E. McNair High School, weekday daily turning movement counts, as well as bicycle and pedestrian counts, were collected on Tuesday, November 7, 2023, during peak school pickup hours, with AM and PM Peak Hour Volumes collected between 7:00 AM to 9:00 AM and between 2:30 PM to 4:30 PM, respectively. Traffic data count sheets are included in **Attachment A**.

Note that at the time of data collection, the Northeast Library and Community Center was under construction on the northwest corner of the West Lane & East Morada Lane intersection and was not yet open and operational. Once open, the Northeast Library and Community Center will be served by the Library Driveway on Morada Lane. The Library Driveway & Morada Lane intersection was observed during the AM and PM peak hours when traffic counts were performed, but no vehicles were observed using the Library Driveway.

In order to approximate the near-term condition in which the Northeast Library and Community Center is open and operational, the *Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition,* was used to approximate the number of peak hour trips generated by the library. Estimated library trips were added to intersection counts to represent a near-term Existing condition where the Northeast Library and Community Center is open and operational.

Existing conditions Lane geometrics and control are presented in **Figure 3** and Existing conditions traffic volumes are shown in **Figure 4**.

EXHIBIT 1



Existing Conditions Lane Geometrics and Control
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 3

WOOD RODGERS

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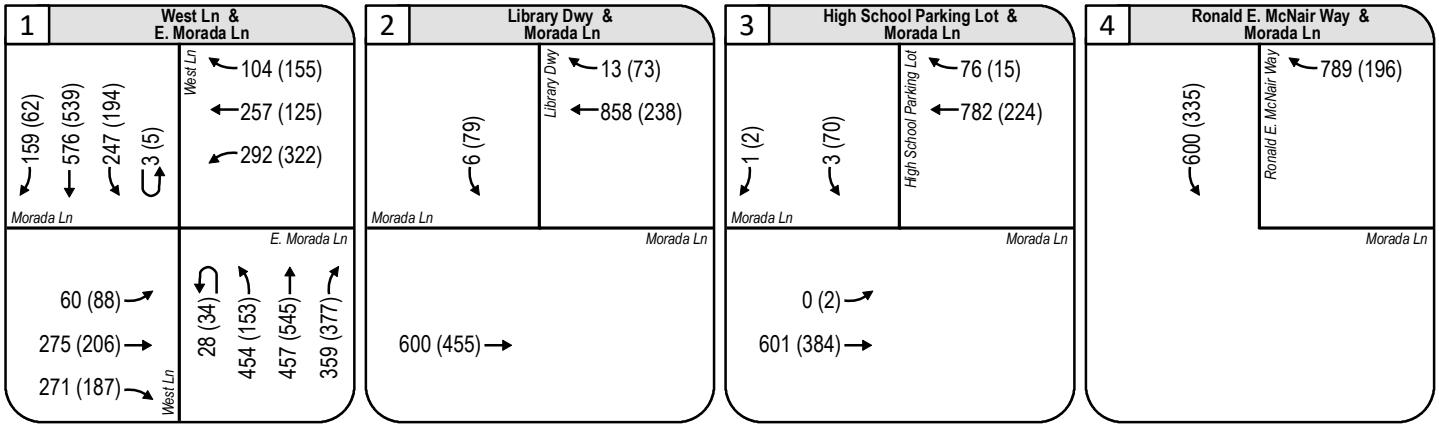
EXHIBIT 1



Existing Conditions Traffic Volumes
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 4

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Existing Intersection Level of Service

Table 2 presents a summary of the intersection LOS operations under weekday AM and PM peak hour Existing conditions. Note that the intersection of Ronald E. McNair Way & Morada Lane is currently a two-legged intersection and therefore, does not experience vehicle delay.

Table 2. Existing Intersection Operations

#	Intersection	Control Type	LOS Criteria	Peak Hour	Existing		Warrant Met?[3]
					Delay (sec/veh)[2]	LOS	
1	West Ln & E. Morada Ln	Signal	D	AM	**78.1**	**E**	-
				PM	**59.6**	**E**	-
2	Library Dwy & Ronald E. McNair Way	OWSC[1]	D	AM	**44.1**	**E**	No
				PM	19.4	C	No
3	High School Parking Lot & Ronald E. McNair Way	OWSC[1]	D	AM	**38.7**	**E**	No
				PM	16.7	C	No
4	Ronald E. McNair Way & Morada Ln	Signal	D	AM	-	-	-
				PM	-	-	-

*Notes: **Bold** values indicate unacceptable LOS.*
[1] OWSC = One-Way Stop-Controlled
[2] For OWSC, the worst approach/movement delay and LOS is reported. For signalized intersection, average delay and LOS is reported.
[3] Wrnt Met? = Peak Hour Signal Warrant #3

As shown in **Table 2**, the West Lane & East Morada Lane intersection is projected to operate at unacceptable LOS E under Existing AM and PM peak hour conditions. The Library Driveway & Morada Lane and High School Parking Lot & Morada Lane intersections are projected to operate at unacceptable LOS E conditions under the Existing AM peak hour. Synchro software HCM 6th Edition intersection LOS output reports are included in **Attachment B**. CA MUTCD Peak Hour Signal Warrant #3 is projected to be unmet at all unsignalized study intersections. Signal warrant worksheets are provided in **Attachment C**.

Project Trip Generation

The trip generation data contained in the *ITE Trip Generation Manual, 11th Edition,* was used to approximate the number of trips generated by the Project. The ITE land use category of Single-Family Detached Housing (ITE Code 210) was used to represent the Project. **Table 3** shows the Project trip generation estimate.

Table 3. Project Trip Generation

Land Use	Units	Quantity	Daily[1]	AM Peak Hour[1]			PM Peak Hour[1]		
				In	Out	Total	In	Out	Total
Single-Family Detached Housing	DU[2]	93	944	18	52	70	59	34	93

Notes:
[1] Trip rates are based on fitted curve equations contained in the ITE Trip Generation Manual, 11th Edition
[2]DU = Dwelling Unit

As illustrated in **Table 3**, the proposed Project is anticipated to generate a total of 944 daily trips, 70 AM peak hour primary trips (18 inbound, 52 outbound), and 93 PM peak hour trips (59 inbound, 34 outbound) under typical weekday traffic demand conditions.

The Project driveway (Street A) would form the south leg of the existing High School Parking Lot & Morada Lane intersection. The Project would also construct an extension of Tam O'Shanter Drive north from Sutherland Drive to form the southern leg of the existing Ronald E. McNair Way & Morada Lane intersection.

The new Tam O'Shanter Drive/Ronald E. McNair Way & Morada Lane intersection was assumed to be improved with a westbound left-turn pocket. It was assumed the westbound right turn phase would overlap with the southbound left-turn phase to accommodate the high volumes entering and exiting the school. The overlap phase would not conflict with any pedestrian crossing movements. The Project would be responsible for implementing the necessary signal modifications at this intersection when constructing the extension. Proposed lane geometrics and control under Existing Plus Project conditions are presented in **Figure 5**.

The Project trip distribution was estimated based on existing traffic counts and engineering judgement. Project trip distribution and assignment are shown in **Figure 6**.

Tam O'Shanter Drive Extension

The Tam O'Shanter Drive extension to Ronald E. McNair Way & Morada Lane is anticipated to cause some rerouting of existing trips. A portion of trips generated by the homes in the neighborhood bound by Sutherland Drive, West Lane, Castle Oaks Drive, and the railroad tracks were assumed to use the new Tam O'Shanter Drive extension to travel to/from West Lane north of Morada Lane, to/from East Morada Lane east of West Lane, and to/from Ronald E. McNair High School. Peak hour trip generation was estimated for the households that would re-route to the Tam O'Shanter Drive extension. Location-based services data from the Replica platform was used to determine the percentage of household trips from the neighborhood traveling to/from West Lane north of Morada Lane and East Morada Lane east of West Lane. These trips were then re-routed from West Lane to the Tam O'Shanter Drive extension.

Some existing trips entering and exiting Ronald E. McNair High School at the West Lane & East Morada Lane intersection were assumed to originate from other neighborhoods beyond the one adjacent to the Project site. These trips were also rerouted to utilize the Tam O'Shanter Drive extension, which would provide a similar or shorter length route to the school when approaching from the south and allow drivers to avoid the existing congestion at the West Lane & East Morada Lane intersection.

The new routes that existing traffic would take at West Lane & East Morada Lane via the Tam O'Shanter Drive extension are illustrated in **Figure 7**. Total rerouted existing trips are shown in **Figure 8**. Project trips, re-routed trips, and Existing conditions volumes were combined to obtain Existing Plus Project conditions volumes, as shown in **Figure 9**.

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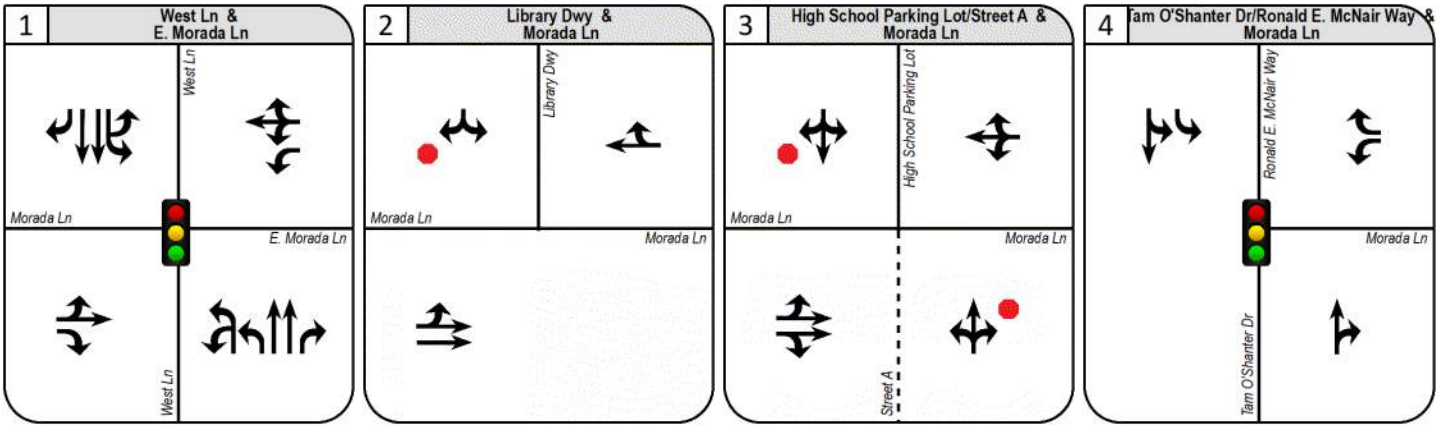

Existing Plus Project Conditions Lane Geometrics and Control
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 5

WOOD RODGERS

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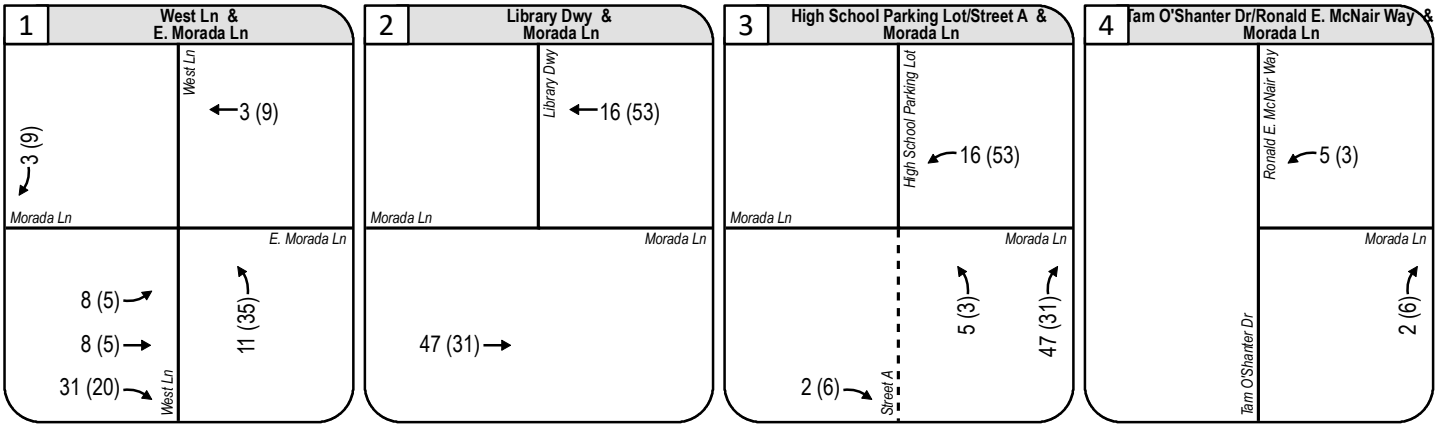


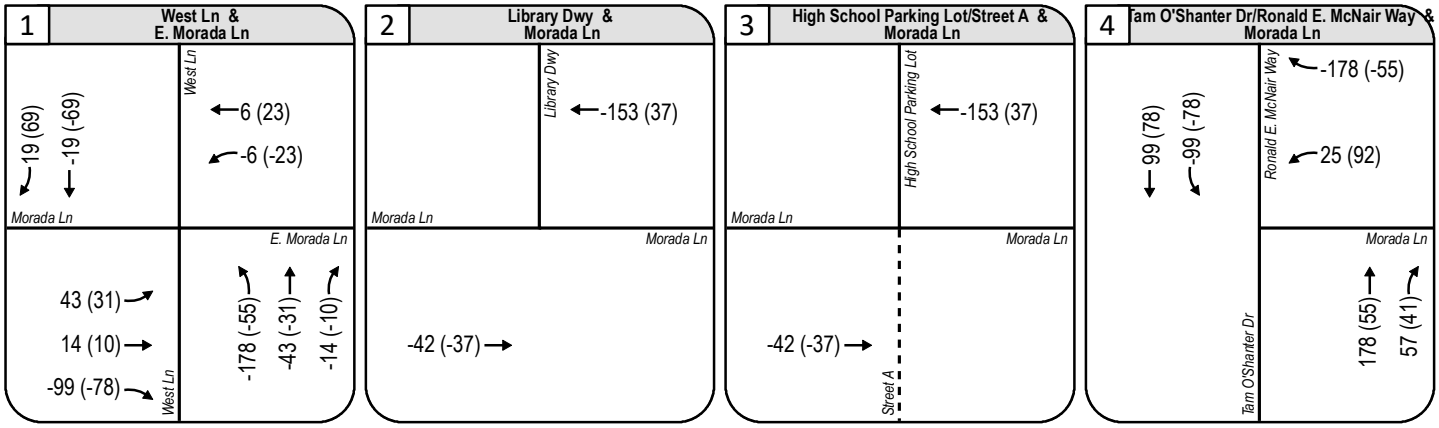
Project-Only Trips
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 6

WOOD RODGERS

Figure 7. Rerouted Existing Trips

EXHIBIT 1



Rerouted Existing Trips
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 8

WOOD RODGERS

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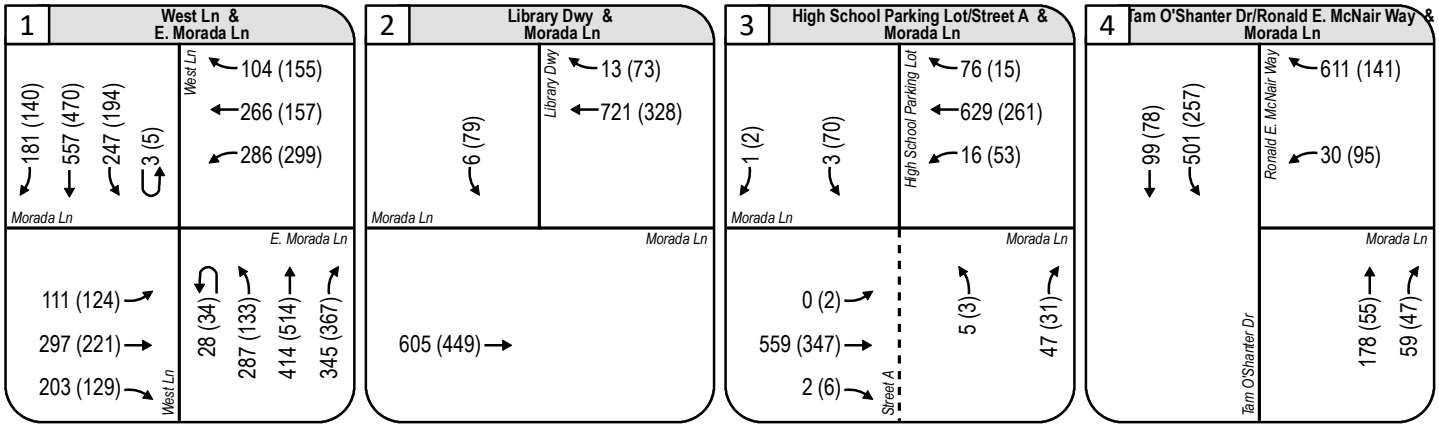
EXHIBIT 1

Legend

- (#) Study Intersection
- Proposed Roadways
- Project Location
- XX(XX) AM(PM) Peak Hour Volumes



Existing Plus Project Traffic Volumes
Bear Creek Residential TIA
Stockton, CA
April 2024

Figure 9

WOOD RODGERS

Existing Plus Project Intersection Level of Service

Table 4 presents a summary of the intersection LOS operations under weekday AM and PM peak hour Existing Plus Project conditions. Existing conditions LOS operations are also shown for comparison.

Table 4. Intersection Operations

#	Intersection	Control Type	LOS Criteria	Peak Hour	Existing			Existing Plus Project			Change in Delay (s)
					Delay (sec/veh)[2]	LOS	Warrant Met?[3]	Delay (sec/veh)	LOS	Warrant Met?	
1	West Ln & E. Morada Ln	Signal	D	AM	**78.1**	**E**	-	**72.8**	**E**	-	-5.3
				PM	**59.6**	**E**	-	**58.3**	**E**	-	-1.3
2	Library Dwy & Morada Ln	OWSC[1]	D	AM	**44.1**	**E**	No	34.7	D	No	-9.4
				PM	19.4	C	No	23.3	C	No	3.9
3	High School Parking Lot/Street A & Morada Ln	TWSC[1]	D	AM	**38.7**	**E**	No	**41.8**	**E**	No	3.1
				PM	16.7	C	No	26.9	D	No	10.2
4	Tam O'Shanter Drive/ Ronald E. McNair Way & Morada Ln	Signal	D	AM	-	-	-	25.5	C	-	25.5
				PM	-	-	-	18.5	B	-	18.5

*Notes: **Bold** values indicate unacceptable LOS.*
[1] OWSC = One-Way Stop-Controlled, TWSC = Two-Way Stop-Controlled
[2] For OWSC and TWSC, the worst approach/movement delay and LOS is reported. For signalized intersection, average delay and LOS is reported.
[3] Wrnt Met? = Peak Hour Signal Warrant #3

As shown in **Table 4**, the West Lane & East Morada Lane intersection is projected to continue operating at unacceptable LOS E under AM and PM peak hour conditions. Operations at the Library Driveway & Morada Lane intersection are projected to improve to LOS D as a result of reduced traffic on Morada Lane due to rerouted traffic at the Tam O'Shanter Drive extension. The High School Parking Lot/Street A & Morada Lane intersection is projected to continue operating at unacceptable LOS E during the AM peak hour. Synchro software HCM 6th Edition intersection LOS output reports are included in **Attachment B**. CA MUTCD Peak Hour Signal Warrant #3 is currently unmet at all unsignalized study intersections. Signal warrant worksheets are provided in **Attachment C**.

Intersection Queueing Analysis

Vehicle queuing was analyzed at the study intersections for all stop-controlled movements and movements with turn pockets that the Project would add trips to. **Table 5** shows the available storage lengths and 95th percentile queues under all analysis scenarios.

As shown in **Table 5**, the northbound left turn queue at the West Lane & East Morada Lane intersection currently exceeds storage by 42 feet (approximately two vehicles) during the AM peak hour. Under Existing Plus Project conditions, the northbound left turn queue length would decrease as a result of a decrease in volumes, due to re-routed traffic utilizing the Tam O'Shanter extension, and no longer exceed storage.

All other queues are projected to fit within available storage with the addition of Project trips. It is recommended that the proposed westbound left-turn pocket at Tam O'Shanter Drive/Ronald E. McNair Way & Morada Lane be designed to accommodate the maximum 95th percentile queue of 63 feet projected to occur under Existing Plus Project conditions.

95th percentile queueing results are included in the Synchro reports contained in **Attachment B**.

Table 5. Queueing Analysis Results

#	Intersection	Movement	Available Storage (ft)[1]	Peak Hour	95th Percentile Queue (ft)	
					Existing	Existing Plus Project
1	West Ln & E. Morada Ln	NBL	325	AM	**367**	239
				PM	158	144
3	High School Parking Lot/Street A & Morada Ln	NB	240	AM	-	22
				PM	-	4
4	Tam O'Shanter Drive/Ronald E. McNair Way & Morada Ln	WBL	N/A[2]	AM	-	39
				PM	-	63

Notes: One queued vehicle length is considered to be 20 feet long. ***Bold*** *values indicate that queue exceeds storage length.*
[1] For stop-controlled movements, available storage represents the distance to the nearest major cross-street or driveway.
[2] Under Plus Project conditions, it is assumed that the westbound approach of the Tam O'Shanter Drive/Ronald E. McNair Way & Morada Lane intersection would include a westbound left turn pocket, and that the westbound right-turn phase would overlap with the southbound left turn phase.

OPERATIONAL DEFICIENCIES

Intersection LOS

The following intersections were shown to experience unacceptable LOS under the study scenarios:

West Lane & East Morada Lane: This intersection is projected to operate at unacceptable LOS E under Existing AM and PM peak hour conditions. This intersection is projected to continue to operate at unacceptable LOS E under Existing Plus Project conditions. However, as shown in **Table 4**, the addition of Project trips is projected to decrease average intersection delay as a result of rerouted trips due to the Tam O'Shanter Way extension. Therefore, based on City criteria, this intersection is not considered to experience a Project-related deficiency.

Library Driveway & Morada Lane: This intersection is projected to operate at unacceptable LOS E under Existing AM peak hour conditions. However, operations at the intersection are projected to improve to LOS D under Existing Plus Project conditions as a result of reduced traffic on Morada Lane due to rerouted traffic at the Tam O'Shanter Drive extension. This intersection also does not meet CA MUTCD Peak Hour Signal Warrant #3 under either study condition or peak hour. Therefore, based on City criteria, this intersection is not considered to experience a Project-related deficiency.

High School Parking Lot/Street A & Morada Lane: This intersection is projected to operate at unacceptable LOS E under Existing AM peak hour conditions and is projected to continue to operate at unacceptable LOS E under Existing Plus Project AM peak hour conditions. However, delay at the intersections is projected to increase by less than 5 seconds under AM peak hour conditions. This intersection also does not meet CA MUTCD Peak Hour Signal Warrant #3 under either study condition or peak hour. Therefore, based on City criteria, this intersection is not considered to experience a Project-related deficiency.

As there is an existing deficiency at this intersection, the Project team will reach out to the high school to discuss overall traffic operations and potential solutions to manage traffic at the Highs School Parking Lot/Street A & Morada Lane intersection, and Morada lane adjacent to the Project and school overall.. A mid-block traffic signal at this intersection could cause queueing issues due to the closely spaced existing adjacent signals. Traffic control measures could include a traffic circle, pedestrian crossing, or traffic calming features such as speed tables or curb extensions.

Peak Hour Signal Warrant #3, Pedestrian Volume Signal Warrant #4, and School Crossing Signal Warrant #5 could be explored at this intersection in the future in coordination with the high school, if/when school operations/enrollment increase, to determine if a signal or other improvement would be warranted at this intersection.

Queueing Deficiencies

The northbound left turn queue at the West Lane & East Morada Lane intersection is projected to exceed storage by 40 feet (approximately two vehicles) during the Existing AM peak hour. Under Existing Plus Project conditions, the northbound left turn queue length would decrease as a result of a decrease in volumes due to re-routed traffic utilizing the Tam O'Shanter extension; and no longer exceed storage. Therefore, this intersection is not considered to experience a Project-related queueing deficiency.

SITE ACCESS AND INTERNAL CIRCULATION

Access to the Project site would be provided via a new driveway (Street A) on Morada Lane across from the existing High School Parking Lot driveway. Street A would be stop-controlled and provide 140 feet of on-site stacking distance (approximately 7 vehicles) for ingress vehicles between Morada Lane and the gates to the development. Maximum ingress volume at the gate is estimated to be 59 vehicles during the PM peak hour. As the majority of ingress vehicles would be residents that would be able to activate the gate without much delay, and given the 140 feet of stacking distance, ingress queueing during peak hour is not anticipated to spillback to Morada Lane. Egress queues are projected to be 22 feet (approximately one vehicle), which would also fit between the gated entry and Morada Lane.

Internal circulation of the site would be provided by private residential roads. The existing single-family residential parcel (APN 084-060-02) enclosed within the site that is currently not a part of the Project would utilize prosed Project roadways to access Morada Lane.

Emergency access to the Project site would be provided via Street A or a gated emergency access point that connects Street E with the existing West Lane Frontage Road.

Traffic Calming on Tam O'Shanter Drive

The Tam O'Shanter Drive extension will provide a second access to the Project site from the surrounding local roadway network. As a result, existing re-routed traffic could cause an increase in volume on Tam O'Shanter Drive south of Sutherland Drive. Based on traffic conditions after the extension is built, the City and surrounding nieghborhoods could consider implementing traffic calming measures on the roadway. Traffic calming measures could include speed tables, bulbouts/curb extensions at the stop-controlled intersections throughout the neighborhoods, or striped Class II bike lanes.

3. CEQA TRANSPORTATION ANALYSIS

PROJECT IMPACTS ON MULTIMODAL FACILITIES

Existing Multimodal Facilities

The City of Stockton is served by the San Joaquin Regional Transit District (RTD). The closest transit stops to the Project site serve RTD Routes 3 and 93. The Route 93 stops are located on northbound West Lane approximately 150 feet south of East Morada Lane and on southbound West Lane approximately 630 feet north of Morada Lane. Route 93 is a County Metro Hopper route that provides access between downtown Stockton and downtown Lodi. Route 93 has rural deviation areas available and operates Monday through Friday from approximately 6 AM to 6:30 PM with 1 to 2-hour headways. The Route 3 stops are located on Prospector Drive between Tam O'Shanter Drive and West Lane Frontage Road, approximately 1,200 feet south of the Project site. Route 3 is a Local Metro Hopper route that provides access to the Sherwood and Weberstown Malls and the Kaiser Permanente facility. Route 3 includes a 1-mile ADA deviation area and operates Monday through Friday from 6 AM to 6:30 PM with 1-hour headways.

Pedestrian sidewalks currently exist along the south side of Morada Lane, ending 450 feet west of West Lane, and along the entirety of the north side of Morada Lane. The northwest, southwest, and southeast corners of West Lane & East Morada Lane include pedestrian curb ramps. Currently, the northwest and northeast corners of the Ronald E. McNair Way & Morada Lane intersection contain pedestrian curb ramps. During the AM and PM peak hours, data shows over 150 pedestrians travel northbound and southbound across Morada Lane via the unpaved path that extends north from Tam O'Shanter Drive.

There are currently not bicycle facilities on study area roadways.

Proposed Multimodal Facilities

There are currently no proposed transit facilities within the vicinity of the Project site.

The new Tam O'Shanter Way extension would include pedestrian sidewalks on both sides of the roadway and should include a crosswalk crossing the east leg of Tam O'Shanter/Ronald E. McNair Way & Morada Lane. The Project would also construct sidewalks along Project frontage on Morada Lane and West Lane. All Project internal streets include sidewalks on at least on side of the roadway.

The *Envision Stockton 2040 General Plan* and *City of Stockton Bicycle Master Plan* (dated December 2017) indicate a Class IV Separated Bikeway is proposed on West Lane.

Multimodal Impacts

Based on the criteria outlined in the *City of Stockton Transportation Impact Analysis Guidelines*, the Project is not anticipated to cause a significant increase in pedestrian, bicycle, or transit demand in the study area that would put existing facilities over capacity or adversely affect existing or proposed pedestrian, bicycle, or transit facilities in a way that would discourage their use. The Project would not result in unsafe conditions for bicyclists or pedestrians or result in unsafe bicycle/pedestrian/motor vehicle conflicts. Tam O'Shanter Drive is currently a Class III bike route south of the Project and contains Class II bike lanes south of Erie Drive. The Tam O'Shanter Drive extension is recommended to accommodate Class II bike lanes so there is no gap in existing bicycle facilities.

Safety Evaluation

Five years of crash data (October 2018 – October 2023) was obtained from the Statewide Integrated Traffic Records System (SWITRS) to identify high collision locations and common collision characteristics. SWITRS collision data is included in **Attachment D**.

Table 6 summarizes the collisions in the study area and describes the collision severity (fatal, serious injury, other visible injury, complaint of pain, and property damage (PDO)) and the collision type. The SWITRS data indicated that a total of 24 collisions occurred at the study facilities over the last five years. The severity of most collisions involved PDO, followed by Other Visible Injury. The most common collision types were rear-end and hit object collisions, followed by broadside type collisions.

Table 6. Summary of Collision Severity and Type

Intersection	Total Collisions	Severity					Type						
		Fatal	Serious Injury	Other Visible Injury	Complaint of Pain	PDO	Head-On	Sideswipe	Rear-End	Broadside	Hit Object	Overturned	Vehicle/Pedestrian
West Lane & East Morada Lane	20	0	0	1	0	19	1	4	6	4	4	0	1
High School Parking Lot/Street A & Morada Lane	2	0	0	0	0	2	0	0	0	1	1	0	0
Tam O'Shanter Dr/Ronald E. McNair Way & Morada Lane	2	0	0	1	0	1	0	0	0	0	1	1	0
Totals	**24**	**0**	**0**	**2**	**0**	**22**	**1**	**4**	**6**	**5**	**6**	**1**	**1**

Table 7 shows the primary collision factors (PCFs) at each study intersection. The most common PCF was unsafe speed, followed by driving or bicycling under the influence. It is unlikely that the addition of Project traffic would contribute to an increased collision rate at the study facilities.

Table 7. Summary of Primary Collision Factors

Intersection	Total Collisions	PCF										
		Driving or Bicycling Under the Influence	Unsafe Speed	Wrong Side of Road	Unsafe Lane Change	Improper Turning	Automobile Right of Way	Traffic Signals and Signs	Other Than Driver (or Pedestrian)	Unsafe Starting or Backing	Other Improper Driving	Unknown
West Lane & East Morada Lane	20	1	8	1	2	2	2	1	1	0	1	1
High School Parking Lot/Street A & Morada Lane	2	0	1	0	0	0	0	0	0	1	0	0
Tam O'Shanter Dr/Ronald E. McNair Way & Morada Lane	2	2	0	0	0	0	0	0	0	0	0	0
Totals	**24**	**3**	**9**	**1**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**

VEHICLE MILES TRAVELED (VMT) ANALYSIS

Senate Bill 743 (SB 743), signed in 2013, required changes to CEQA guidelines on the measurement and identification of transportation impacts due to new projects in California. Revised CEQA Guidelines were adopted in 2018 which identified VMT as the most appropriate metric to evaluate transportation impacts. Statewide implementation of assessment of VMT as a metric of transportation impact occurred for all jurisdictions on July 1, 2020. The Governor's Office of Planning and Research (OPR) *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR Technical Advisory) (December 2018), contains technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The City has not currently adopted official VMT guidelines or thresholds. Therefore, this memorandum utilizes recommended thresholds outlined in the OPR Technical Advisory for residential uses.

Residential VMT Criteria

Based on OPR Technical Advisory guidance, this memorandum assumes the Project would result in a less-than-significant VMT impact if the Project site's VMT per Capita is at least 15% below the City average VMT per Capita (i.e., less than or equal to 85% of the City average VMT per Capita).

Methodology

This analysis utilizes trip generation and trip length information from the location-based services data vendor Replica. Additional information on Replica can be found here: https://replicahq.com/about/. The latest available Replica data for average Thursday daily conditions in Spring of 2023 was utilized for this analysis. All data used in this analysis was from the California-Nevada region, which means it will capture all trips that start or end within the states of California or Nevada. Replica has nation-wide data, which means all trip lengths reported from Replica are full trip lengths and are not truncated due to jurisdictional boundaries. All Replica data used in this study can be provided upon request.

Representative Project Study Area Residential VMT Per Capita

In order to determine Project site residential VMT per Capita, a "Representative Project Study Area" was created in Replica directly adjacent to the Project site that contained a large number of residential land uses. The Representative Project Study Area utilized in this Replica analysis is shown in **Figure 10** below.

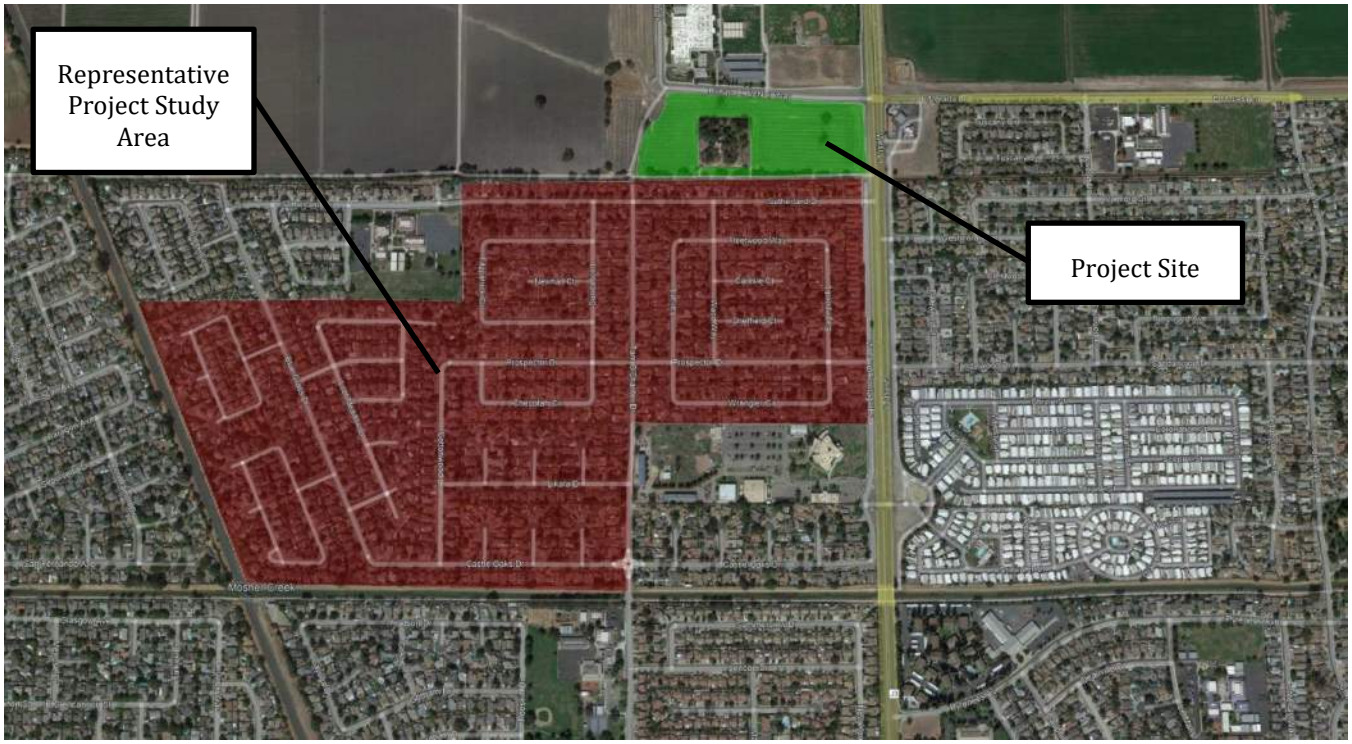


Figure 10. Representative Project Study Area

Replica was used to extract all existing vehicle trips and corresponding trip lengths for residents of the Representative Project Study Area under average Thursday daily conditions. Replica was also used to extract total existing residents of the Representative Project Study Area. The trip and resident data from Replica were used to calculate VMT per Capita for the Representative Project Study Area and is summarized in **Table 8.**

Table 8. Representative Project Study Area VMT per Resident Data

Representative Project Study Area Metrics	Value
Existing Residents	4,210
Average Daily Vehicle Trips by Residents	10,420
Average Daily Vehicle Miles Traveled by Residents[1]	68,495
VMT Per Capita	**16.3**

Notes:
All vales are based on average Thursday daily conditions (Spring of 2023) data obtained from Replica.
[1]Calculated by summing all resident trip lengths reported by Replica.

As shown in **Table 8**, it can be generally assumed that the Project would generate a VMT of approximately 16.3 VMT per Capita based on existing travel characteristics of land uses in the Representative Project Study Area and Replica data.

City Existing Baseline Residential VMT per Capita

Existing average baseline City VMT per Capita was calculated using Replica data to maintain consistency between the methods used to calculate Representative Project Study Area VMT and City VMT.

Replica was used to extract all existing trips and corresponding trip lengths for residents of the City under average Thursday daily year 2023 conditions. Replica was also used to extract total existing residents of the City. The trip and resident data from Replica were used to calculate VMT per Capita for the City of Stockton and is summarized in **Table 9.**

Table 9. City of Stockton VMT per Resident Data

City Metrics	Value
Existing Residents	316,000
Average Daily Vehicle Trips by Residents	675,871
Average Daily Vehicle-Miles Traveled by Residents[1]	6,219,191
VMT Per Capita	**19.7**

Notes:
All vales are based on average Thursday daily conditions (Spring of 2023) data obtained from Replica.
[1]Calculated by summing all resident trip lengths reported by Replica.

As shown in **Table 9**, the existing average baseline City VMT is approximately 19.7 VMT per Capita based on the average year 2023 Spring Thursday Replica data.

Effects of Tam O'Shanter Drive Extension on VMT

The construction of the Tam O'Shanter Drive extension would generally reroute and shorten the existing trips traveling between the neighborhood directly south of Morada Lane and the West Lane & East Morada Lane intersection (and nearby high school). An estimate of the VMT savings from the rerouted trips is summarized in **Table 10** below.

Table 10. Estimated VMT Reduction Due to Tam O'Shanter Drive Extension

Route[1]	Average Distance Without Tam O'Shanter Extension (mi)	Average Distance With Tam O'Shanter Extension (mi)	Change in Distance (mi)	Number of Rerouted Daily Trips[2]	Change in VMT
Neighborhood to West Ln & E. Morada Ln (Intersection #1)	1.21	0.84	-0.37	1,223	-453
Neighborhood to Tam O'Shanter Dr/Ronald E. McNair Way & Morada Ln (Intersection #4)	1.47	0.58	-0.89	517	-460
Total Estimated Change in VMT with Tam O'Shanter Drive Extension					**-913**

Notes:
[1]Route distances were calculated from a central point of the neighborhood bound by Sutherland Drive, West Lane, Castle Oaks Drive, and the railroad tracks, which would contain the majority of rerouted existing trips takers.
[2]Data is based on average Thursday daily conditions (Spring of 2023) data obtained from Replica and ITE Trip Generation.

As shown in **Table 10**, an average estimated reduction in VMT due to the Tam O'Shanter Drive extension is 913 VMT.

VMT Impacts and Mitigation Measures

The Project VMT was compared against the City's VMT threshold to determine if the Project would have a significant VMT impact.

As shown in **Table 11**, the Project VMT is 2.4% lower than the City threshold. Therefore, the Project would have a less than significant VMT impact.

Table 11. Project VMT Impact

Metric	Value
City Average VMT per Capita	19.7 VMT per Capita
15% Below City Average VMT per Capita (Threshold)	16.7 VMT per Capita
Project VMT	16.3 VMT per Capita
Percent Difference	-2.4%
Impact	Less-Than-Significant

4. CONCLUSION

Project Trip Generation

The proposed Project is anticipated to generate a total of 944 daily trips, 70 AM peak hour primary trips (18 inbound, 52 outbound), and 93 PM peak hour trips (59 inbound, 34 outbound) under typical weekday traffic demand conditions.

Intersection Operations

The following intersections were shown to experience unacceptable LOS under the study scenarios:

West Lane & East Morada Lane: This intersection is projected to operate at unacceptable LOS E during the Existing AM and PM peak hours. This intersection is projected to continue to operate at unacceptable LOS E under Existing Plus Project conditions. However, as shown in **Table 4**, the addition of Project trips is projected to decrease average intersection delay as a result of rerouted trips due to the Tam O'Shanter Way extension. Therefore, based on City criteria, this intersection is not considered to experience a Project-related deficiency.

Library Driveway & Morada Lane: This intersection is projected to operate at unacceptable LOS E during Existing AM peak hour conditions. However, operations at the intersection are projected to improve to LOS D under Existing Plus Project conditions as a result of reduced traffic on Morada Lane due to rerouted traffic at the Tam O'Shanter Drive extension. This intersection also does not meet CA MUTCD Peak Hour Signal Warrant #3 under either study condition or peak hour. Therefore, based on City criteria, this intersection is not considered to experience a Project-related deficiency.

High School Parking Lot/Street A & Morada Lane: This intersection is projected to operate at unacceptable LOS E during Existing AM peak hour conditions and is projected to continue to operate at unacceptable LOS E under Existing Plus Project AM peak hour conditions. However, delay at the intersections is projected to increase by less than 5 seconds. This intersection also does not meet CA MUTCD Peak Hour Signal Warrant #3 under either study condition or peak hour. Therefore, based on City criteria, this intersection is not considered to experience a Project-related deficiency.

Intersection Queueing

The northbound left turn queue at the West Lane & East Morada Lane intersection is projected to exceed storage by 42 feet (approximately two vehicles) during the Existing AM peak hour. Under Existing Plus Project conditions, the northbound left turn queue length would decrease and no longer exceed storage as a result of a decrease in volumes due to re-routed traffic utilizing the Tam O'Shanter extension. Therefore, this intersection is not considered to experience a Project-related queueing deficiency.

All other queues are projected to fit within available storage.

Site Access and Internal Circulation

Access to the Project site would be provided via new driveway (Street A) on Morada Lane across from the existing High School Parking Lot driveway. Street A would be stop-controlled and provide 140 feet of on-site stacking distance for ingress vehicles between Morada Lane and the gates to the development. Maximum ingress volume at the gate is estimated to be 59 vehicles during the PM peak hour. As the majority of ingress vehicles would be residents that would be able to activate the gate without much delay, and given the 140 feet of stacking distance, ingress queueing during peak hour is not anticipated to spillback to Morada Lane. Egress queues are projected to be 22 feet (approximately one vehicle), which would also fit between the gated entry and Morada Lane.

Emergency access to the Project site would be provided via Street A or a gated emergency access point that connects Street E with the existing West Lane Frontage Road.

Project Impact on Multimodal Facilities

Based on the criteria outlined in the *City of Stockton Transportation Impact Analysis Guidelines*, the Project is not anticipated to cause a significant increase in pedestrian, bicycle, or transit demand in the study area that would put existing facilities over capacity or adversely affect existing or proposed pedestrian, bicycle, or transit facilities in a way that would discourage their use. The Project would not result in unsafe conditions for bicyclists or pedestrians or result in unsafe bicycle/pedestrian/motor vehicle conflicts.

Safety Evaluation

Data indicated that a total of 24 collisions occurred at the study facilities over the last five years. The severity of most collisions involved PDO, followed by Other Visible Injury. The most common collision types were rear-end and hit object collisions, followed by broadside type collisions.

The most common PCF was unsafe speed, followed by driving or bicycling under the influence. It is unlikely that the addition of Project traffic would contribute to an increased collision rate at the study facilities.

VMT Analysis

The Project VMT was compared against the City's VMT threshold to determine if the Project would have a significant VMT impact. The Project VMT was estimated to be 2.4% lower than the City threshold. Therefore, the Project would have a less than significant VMT impact. Additionally, the construction of the Tam O'Shanter Drive extension would generally reroute and shorten the existing trips traveling between the neighborhood directly south of Morada Lane and the West Lane & East Morada Lane intersection (and nearby high school), resulting in an average estimated reduction of area VMT of 913 VMT per day.

ATTACHMENT A

TRAFFIC COUNTS

Prepared by National Data & Surveying Services

West Ln & Ronald E McNair Way/E Morada Ln

Peak Hour Turning Movement Count

ID: 23-090140-001
City: Stockton

Day: Tuesday
Date: 11/7/2023

PEAK HOURS	COUNT PERIODS
07:30 am - 08:30 am	7:00 AM - 09:00 AM
NONE	NONE
03:00 pm - 04:00 pm	2:30 PM - 04:30 PM

SOUTHBOUND (West Ln)

AM	155	576	247	3	622	AM
NOON	0	0	0	0	0	NOON
PM	40	539	194	5	769	PM
	1	2	1	0		

EASTBOUND (Ronald E McNair Way/E Morada Ln)

AM	NOON	PM		
857	0	267		
0	0	0	0	
58	0	64	0.5	
273	0	183	0.5	
269	0	155	1	
AM	NOON	PM		

CONTROL

Signalized

TEV	3523 AM	0 NOON	2840 PM
PHF	0.90		0.94

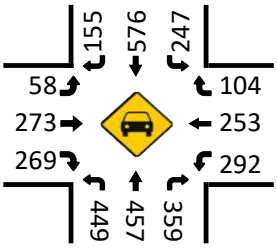
WESTBOUND (Ronald E McNair Way/E Morada Ln)

PM	NOON	AM		
155	0	104	0.3	
103	0	253	0.3	
322	0	292	1.3	
0	0	0	0	
754	0	879		
PM	NOON	AM		

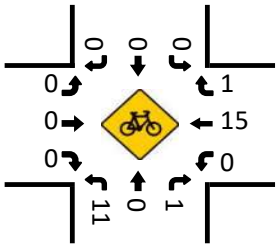
NORTHBOUND (West Ln)

	0	2	2	1		
PM	1050	34	124	545	377	PM
NOON	0	0	0	0	0	NOON
AM	1165	28	449	457	359	AM

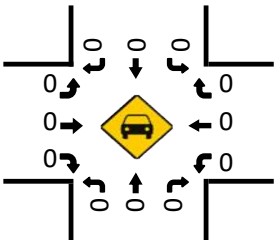
Total (AM)



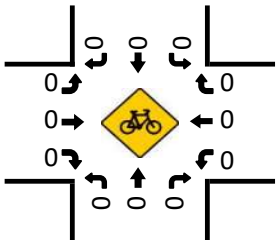
Total Bikes (AM)



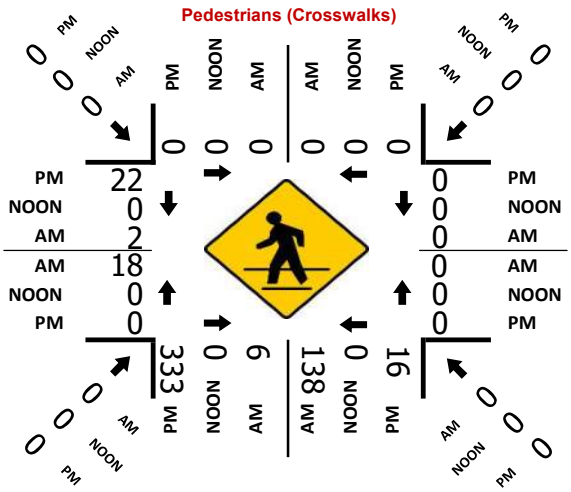
Total (NOON)



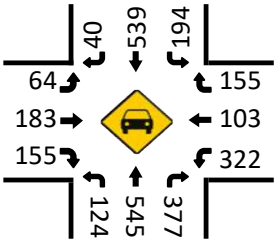
Total Bikes (NOON)



Pedestrians (Crosswalks)



Total (PM)



Total Bikes (PM)

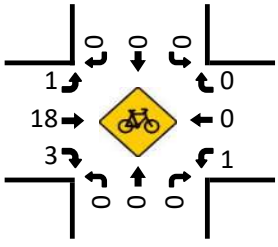
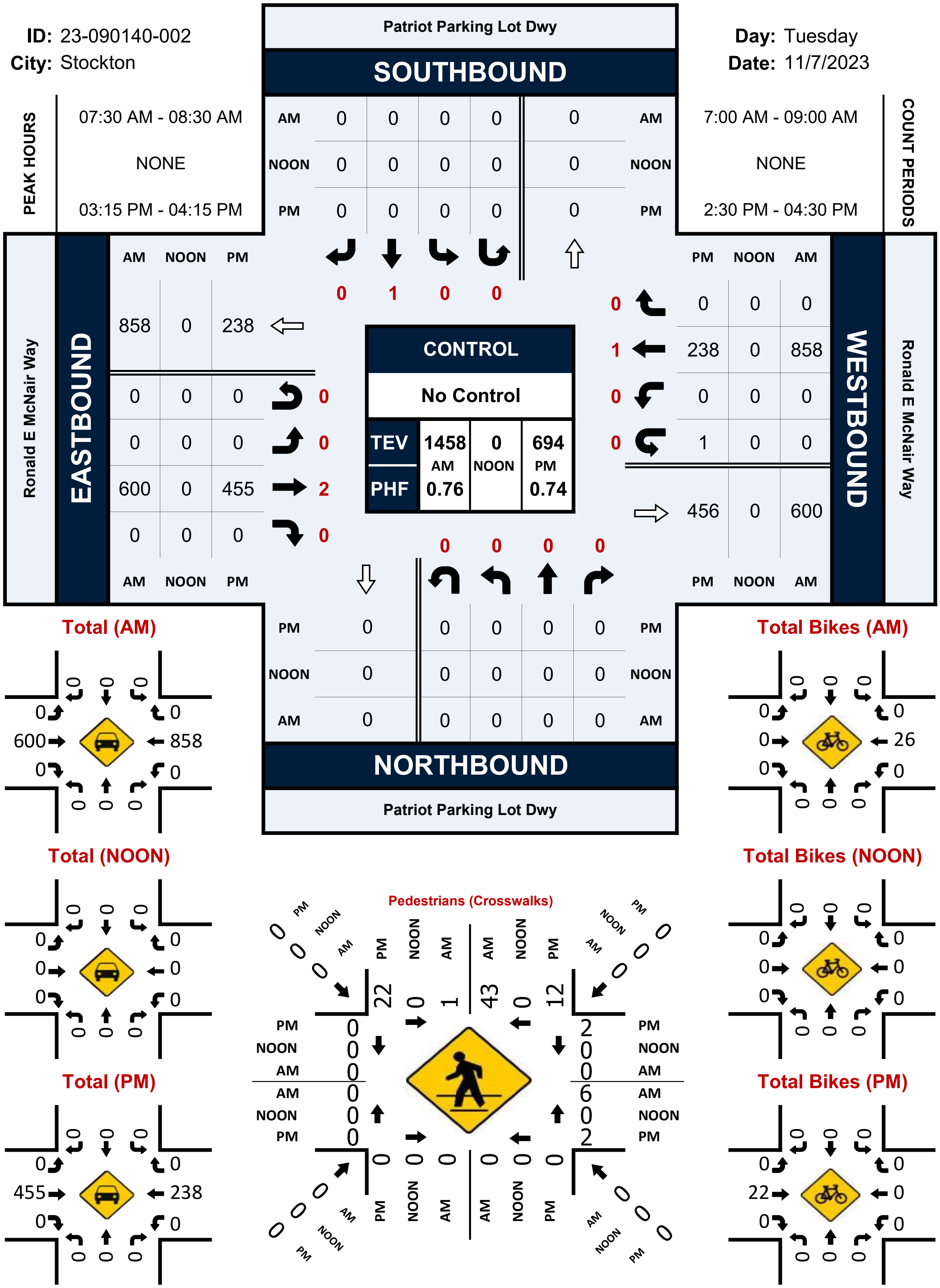


EXHIBIT 1

Prepared by National Data & Surveying Services

Patriot Parking Lot Dwy & Ronald E McNair Way

Peak Hour Turning Movement Count



ID: 23-090140-002
City: Stockton
Day: Tuesday
Date: 11/7/2023
PEAK HOURS
07:30 AM - 08:30 AM
NONE
03:15 PM - 04:15 PM
COUNT PERIODS
7:00 AM - 09:00 AM
NONE
2:30 PM - 04:30 PM
Patriot Parking Lot Dwy
SOUTHBOUND
AM 0 0 0 0 0
NOON 0 0 0 0 0
PM 0 0 0 0 0
0 1 0 0
Ronald E McNair Way
EASTBOUND
AM NOON PM
858 0 238
0 0 0 0
0 0 0 0
600 0 455 2
0 0 0 0
CONTROL
No Control
TEV 1458 AM 0 NOON 694 PM
PHF 0.76 0.74
WESTBOUND
Ronald E McNair Way
PM NOON AM
0 0 0 0
1 238 0 858
0 0 0 0
0 1 0 0
456 0 600
0 0 0 0
NORTHBOUND
Patriot Parking Lot Dwy
PM 0 0 0 0 0
NOON 0 0 0 0 0
AM 0 0 0 0 0
Total (AM)
Total (NOON)
Total (PM)
Total Bikes (AM)
Total Bikes (NOON)
Total Bikes (PM)
Pedestrians (Crosswalks)

Prepared by National Data & Surveying Services

Ronald E McNair High School Dwy & Ronald E McNair Way

Peak Hour Turning Movement Count

ID: 23-090140-003
City: Stockton

Day: Tuesday
Date: 11/7/2023

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NONE	NONE
03:15 PM - 04:15 PM	2:30 PM - 04:30 PM

SOUTHBOUND — Ronald E McNair High School Dwy

AM	1	0	3	0	76	AM
NOON	0	0	0	0	0	NOON
PM	2	0	70	0	17	PM

EASTBOUND — Ronald E McNair Way

AM	NOON	PM	
783	0	226	⇦
0	0	0	↶ 0
0	0	2	↱ 0
601	0	384	→ 2
0	0	0	↷ 0

WESTBOUND — Ronald E McNair Way

PM	NOON	AM	
15	0	76	0 ↶
224	0	782	1 ←
0	0	0	0 ↰
1	0	0	0 ↶
455	0	604	⇨

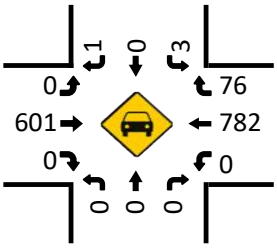
NORTHBOUND — Ronald E McNair High School Dwy

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

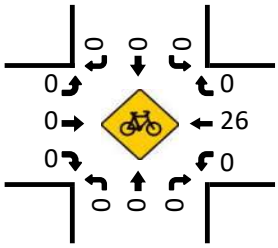
CONTROL: No Control

TEV	1463 AM	0 NOON	698 PM
PHF	0.78		0.78

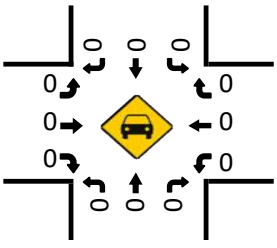
Total (AM)



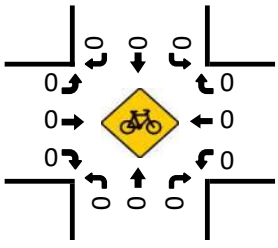
Total Bikes (AM)



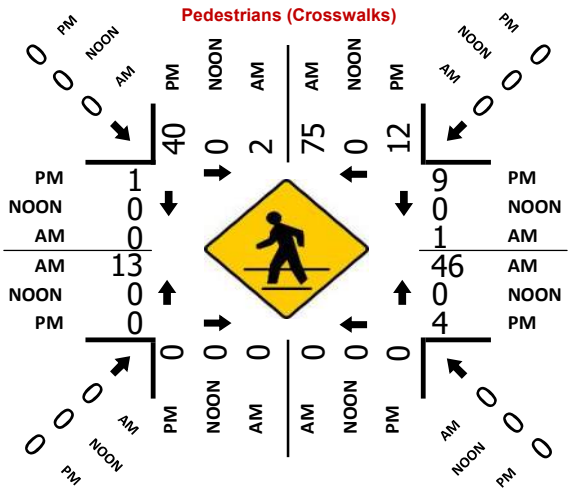
Total (NOON)



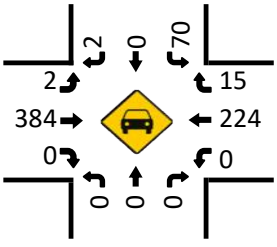
Total Bikes (NOON)



Pedestrians (Crosswalks)



Total (PM)



Total Bikes (PM)

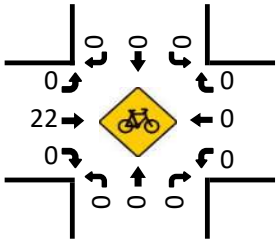


EXHIBIT 1

Prepared by National Data & Surveying Services

Ronald E McNair Way N & Ronald E McNair Way E

Peak Hour Turning Movement Count

ID: 23-090140-004
City: Stockton

Day: Tuesday
Date: 11/7/2023

PEAK HOURS		COUNT PERIODS
AM	07:30 AM - 08:30 AM	7:00 AM - 09:00 AM
NOON	NONE	NONE
PM	03:15 PM - 04:15 PM	2:30 PM - 04:30 PM

Ronald E McNair Way N — SOUTHBOUND

	Right	Thru	Left	U-Turn	Northbound exit
AM	0	0	600	0	789
NOON	0	0	0	0	0
PM	0	0	335	0	196
Bikes	0	0	2	0	

Ronald E McNair Way E — WESTBOUND

	Bikes	PM	NOON	AM
Right	0	196	0	789
Thru	1	0	0	0
Left	0	1	0	0
U-Turn	0	4	0	0
Eastbound exit		343	0	601

Ronald E McNair Way E — EASTBOUND

	AM	NOON	PM	Bikes
Westbound exit	0	0	0	
U-Turn	0	0	0	0
Left	0	0	0	0
Thru	0	0	1	0
Right	0	0	0	0

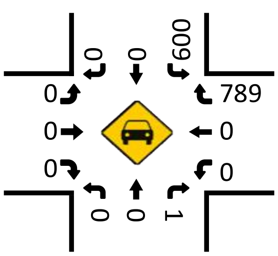
Ronald E McNair Way N — NORTHBOUND

	Southbound exit	U-Turn	Left	Thru	Right
Bikes		0	0	1	0
PM	1	0	0	0	3
NOON	0	0	0	0	0
AM	0	0	0	0	1

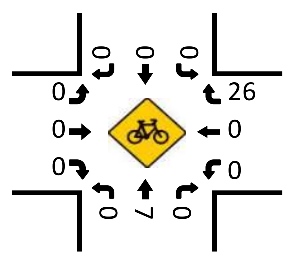
CONTROL: Signalized

	AM	NOON	PM
TEV	1390	0	540
PHF	0.82		0.65

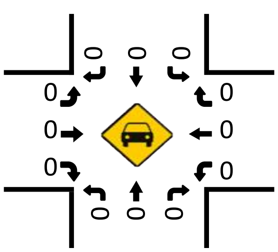
Total (AM)



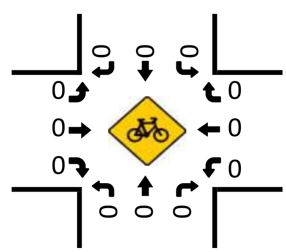
Total Bikes (AM)



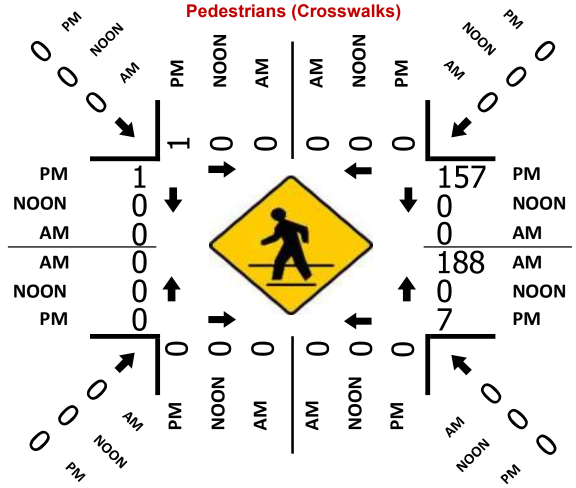
Total (NOON)



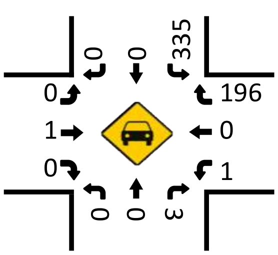
Total Bikes (NOON)



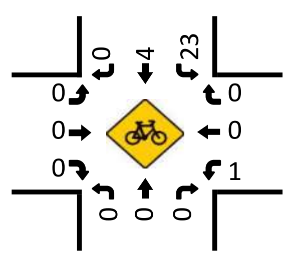
Pedestrians (Crosswalks)



Total (PM)



Total Bikes (PM)



ATTACHMENT B

SYNCHRO HCM 6TH EDITION LOS REPORTS AND QUEUEING REPORTS

Bear Creek Residential TIA

1: West Ln & Morada Ln/E. Morada Ln

Existing AM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	373	301	292	434	536	508	399	278	640	177
v/c Ratio	0.82	0.63	0.82	1.20	0.83	0.66	0.61	0.87	0.86	0.41
Control Delay	75.3	22.7	82.8	166.5	77.4	63.5	8.5	93.4	76.2	17.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.3	22.7	82.8	166.5	77.4	63.5	8.5	93.4	76.2	17.8
Queue Length 50th (ft)	394	79	329	~608	297	268	0	303	357	34
Queue Length 95th (ft)	#597	204	#528	#900	367	332	94	#505	#459	113
Internal Link Dist (ft)	277			850		253			751	
Turn Bay Length (ft)			290		325		220	345		
Base Capacity (vph)	456	476	354	361	1034	1216	805	319	789	446
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.63	0.82	1.20	0.52	0.42	0.50	0.87	0.81	0.40

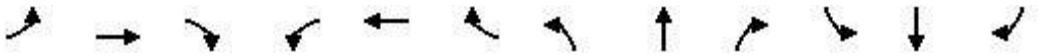
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Bear Creek Residential TIA
1: West Ln & Morada Ln/E. Morada Ln

Existing AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	275	271	292	257	104	482	457	359	250	576	159
Future Volume (veh/h)	60	275	271	292	257	104	482	457	359	250	576	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.83	1.00		0.97	1.00		1.00	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	67	306	301	324	286	116	536	508	266	278	640	177
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	84	382	329	382	269	109	607	780	348	299	751	326
Arrive On Green	0.25	0.25	0.25	0.21	0.21	0.21	0.18	0.22	0.22	0.17	0.21	0.21
Sat Flow, veh/h	333	1521	1312	1781	1253	508	3456	3554	1585	1781	3554	1540
Grp Volume(v), veh/h	373	0	301	324	0	402	536	508	266	278	640	177
Grp Sat Flow(s),veh/h/ln	1854	0	1312	1781	0	1762	1728	1777	1585	1781	1777	1540
Q Serve(g_s), s	30.8	0.0	36.3	28.5	0.0	35.0	24.7	21.2	25.7	25.1	28.2	16.7
Cycle Q Clear(g_c), s	30.8	0.0	36.3	28.5	0.0	35.0	24.7	21.2	25.7	25.1	28.2	16.7
Prop In Lane	0.18		1.00	1.00		0.29	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	465	0	329	382	0	378	607	780	348	299	751	326
V/C Ratio(X)	0.80	0.00	0.91	0.85	0.00	1.06	0.88	0.65	0.76	0.93	0.85	0.54
Avail Cap(c_a), veh/h	466	0	330	382	0	378	1060	780	348	328	806	349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.3	0.0	59.3	61.5	0.0	64.0	65.6	58.0	59.7	66.9	61.8	57.3
Incr Delay (d2), s/veh	9.7	0.0	28.7	16.1	0.0	64.0	4.6	1.9	9.7	31.0	8.3	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.7	0.0	14.7	14.7	0.0	22.5	11.3	9.8	11.3	14.0	13.7	6.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	0.0	88.0	77.6	0.0	128.0	70.2	59.9	69.4	97.9	70.1	58.8
LnGrp LOS	E	A	F	E	A	F	E	E	E	F	E	E
Approach Vol, veh/h		674			726			1310			1095	
Approach Delay, s/veh		76.3			105.5			66.0			75.3	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	34.7	40.5		41.0	33.3	41.8		46.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	50.0	37.0		35.0	30.0	30.0		41.0				
Max Q Clear Time (g_c+I1), s	26.7	30.2		37.0	27.1	27.7		38.3				
Green Ext Time (p_c), s	2.0	2.7		0.0	0.2	1.0		1.0				

Intersection Summary		
HCM 6th Ctrl Delay		78.1
HCM 6th LOS		E

Notes
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	600	858	13	6	0
Future Vol, veh/h	0	600	858	13	6	0
Conflicting Peds, #/hr	44	0	0	44	6	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	789	1129	17	8	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1190	0	-	0	1583	1182
Stage 1	-	-	-	-	1182	-
Stage 2	-	-	-	-	401	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	585	-	-	-	109	230
Stage 1	-	-	-	-	290	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	560	-	-	-	100	220
Mov Cap-2 Maneuver	-	-	-	-	100	-
Stage 1	-	-	-	-	278	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	44.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	560	-	-	-	100
HCM Lane V/C Ratio	-	-	-	-	0.079
HCM Control Delay (s)	0	-	-	-	44.1
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	601	782	76	3	1
Future Vol, veh/h	0	601	782	76	3	1
Conflicting Peds, #/hr	77	0	0	77	47	13
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	771	1003	97	4	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1177	0	-	0	1562	1142
Stage 1	-	-	-	-	1129	-
Stage 2	-	-	-	-	433	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	591	-	-	-	112	243
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	622	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	548	-	-	-	96	222
Mov Cap-2 Maneuver	-	-	-	-	96	-
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	577	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	38.7
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	548	-	-	-	112
HCM Lane V/C Ratio	-	-	-	-	0.046
HCM Control Delay (s)	0	-	-	-	38.7
HCM Lane LOS	A	-	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Bear Creek Residential TIA

1: West Ln & Morada Ln/E. Morada Ln

Existing PM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	313	199	309	332	199	580	401	212	573	66
v/c Ratio	0.64	0.48	0.83	0.87	0.62	0.81	0.69	0.77	0.62	0.14
Control Delay	60.9	12.8	78.3	78.0	78.8	70.5	18.5	83.7	54.2	3.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.9	12.8	78.3	78.0	78.8	70.5	18.5	83.7	54.2	3.6
Queue Length 50th (ft)	307	12	329	332	108	311	63	223	282	0
Queue Length 95th (ft)	453	98	#504	#532	158	412	202	321	362	18
Internal Link Dist (ft)	277			850		253			751	
Turn Bay Length (ft)			290		325		220	345		
Base Capacity (vph)	488	412	436	442	779	849	631	402	980	486
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.48	0.71	0.75	0.26	0.68	0.64	0.53	0.58	0.14

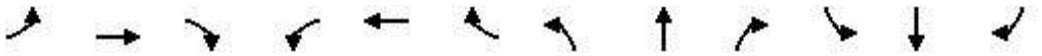
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Bear Creek Residential TIA

1: West Ln & Morada Ln/E. Morada Ln

Existing PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	206	187	322	125	155	187	545	377	199	539	62
Future Volume (veh/h)	88	206	187	322	125	155	187	545	377	199	539	62
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.67	1.00		1.00	1.00		1.00	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	94	219	199	320	164	165	199	580	273	212	573	66
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	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	156	364	301	385	185	186	258	719	321	239	930	404
Arrive On Green	0.28	0.28	0.28	0.22	0.22	0.22	0.07	0.20	0.20	0.13	0.26	0.26
Sat Flow, veh/h	553	1289	1067	1781	855	860	3456	3554	1585	1781	3554	1545
Grp Volume(v), veh/h	313	0	199	320	0	329	199	580	273	212	573	66
Grp Sat Flow(s),veh/h/ln	1843	0	1067	1781	0	1715	1728	1777	1585	1781	1777	1545
Q Serve(g_s), s	21.4	0.0	23.9	24.9	0.0	27.0	8.2	22.6	24.1	17.0	20.6	4.8
Cycle Q Clear(g_c), s	21.4	0.0	23.9	24.9	0.0	27.0	8.2	22.6	24.1	17.0	20.6	4.8
Prop In Lane	0.30		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	520	0	301	385	0	371	258	719	321	239	930	404
V/C Ratio(X)	0.60	0.00	0.66	0.83	0.00	0.89	0.77	0.81	0.85	0.89	0.62	0.16
Avail Cap(c_a), veh/h	520	0	301	490	0	472	832	856	382	429	930	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.1	0.0	46.0	54.4	0.0	55.2	66.0	55.3	55.9	61.8	47.2	41.4
Incr Delay (d2), s/veh	2.0	0.0	5.3	9.3	0.0	15.3	4.8	4.9	14.6	10.5	1.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.1	0.0	6.8	12.2	0.0	13.3	3.8	10.6	11.0	8.4	9.4	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	0.0	51.3	63.7	0.0	70.5	70.8	60.2	70.5	72.4	48.4	41.6
LnGrp LOS	D	A	D	E	A	E	E	E	E	E	D	D
Approach Vol, veh/h		512			649			1052			851	
Approach Delay, s/veh		48.7			67.2			64.9			53.9	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	16.9	44.0		37.4	25.5	35.4		47.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	35.0	37.0		40.0	35.0	35.0		41.0				
Max Q Clear Time (g_c+I1), s	10.2	22.6		29.0	19.0	26.1		25.9				
Green Ext Time (p_c), s	0.7	3.5		2.4	0.5	3.3		2.7				

Intersection Summary			
HCM 6th Ctrl Delay		59.6	
HCM 6th LOS		E	

Notes
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	455	238	73	79	0
Future Vol, veh/h	0	455	238	73	79	0
Conflicting Peds, #/hr	34	0	0	34	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	615	322	99	107	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	455	0	-	0	718	406
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	312	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1104	-	-	-	379	644
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1068	-	-	-	355	623
Mov Cap-2 Maneuver	-	-	-	-	355	-
Stage 1	-	-	-	-	650	-
Stage 2	-	-	-	-	693	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1068	-	-	-	355
HCM Lane V/C Ratio	-	-	-	-	0.301
HCM Control Delay (s)	0	-	-	-	19.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	384	224	15	70	2
Future Vol, veh/h	2	384	224	15	70	2
Conflicting Peds, #/hr	52	0	0	52	13	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	492	287	19	90	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	358	0	-	0	614	350
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	265	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	1199	-	-	-	439	693
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	756	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1140	-	-	-	395	658
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	718	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1140	-	-	-	399
HCM Lane V/C Ratio	0.002	-	-	-	0.231
HCM Control Delay (s)	8.2	0	-	-	16.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.9

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	453	226	286	444	350	460	383	278	619	201
v/c Ratio	0.95	0.53	0.76	1.17	0.75	0.74	0.65	0.83	0.77	0.43
Control Delay	86.5	25.1	72.4	151.4	76.2	69.5	10.3	82.8	64.4	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.5	25.1	72.4	151.4	76.2	69.5	10.3	82.8	64.4	15.0
Queue Length 50th (ft)	465	79	295	~571	182	239	0	281	316	31
Queue Length 95th (ft)	#721	178	#454	#844	239	303	98	#453	406	111
Internal Link Dist (ft)	277			850		253			751	
Turn Bay Length (ft)			290		325		220	345		
Base Capacity (vph)	479	428	374	380	1091	1282	818	337	832	481
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.53	0.76	1.17	0.32	0.36	0.47	0.82	0.74	0.42

Intersection Summary

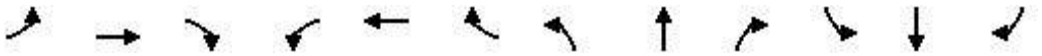
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Bear Creek Residential TIA

1: West Ln & Morada Ln/E. Morada Ln

Existing Plus Project AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	297	203	286	266	104	315	414	345	250	557	181
Future Volume (veh/h)	111	297	203	286	266	104	315	414	345	250	557	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.84	1.00		0.97	1.00		1.00	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	123	330	226	318	296	116	350	460	250	278	619	201
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	134	360	356	408	290	114	417	631	282	301	804	349
Arrive On Green	0.27	0.27	0.27	0.23	0.23	0.23	0.12	0.18	0.18	0.17	0.23	0.23
Sat Flow, veh/h	501	1344	1329	1781	1268	497	3456	3554	1585	1781	3554	1543
Grp Volume(v), veh/h	453	0	226	318	0	412	350	460	250	278	619	201
Grp Sat Flow(s),veh/h/ln	1845	0	1329	1781	0	1765	1728	1777	1585	1781	1777	1543
Q Serve(g_s), s	36.5	0.0	23.0	25.6	0.0	35.0	15.2	18.7	23.6	23.5	25.0	17.7
Cycle Q Clear(g_c), s	36.5	0.0	23.0	25.6	0.0	35.0	15.2	18.7	23.6	23.5	25.0	17.7
Prop In Lane	0.27		1.00	1.00		0.28	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	494	0	356	408	0	404	417	631	282	301	804	349
V/C Ratio(X)	0.92	0.00	0.64	0.78	0.00	1.02	0.84	0.73	0.89	0.92	0.77	0.58
Avail Cap(c_a), veh/h	495	0	356	408	0	404	1130	697	311	349	860	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.4	0.0	49.4	55.4	0.0	59.0	65.8	59.4	61.4	62.6	55.5	52.7
Incr Delay (d2), s/veh	22.1	0.0	3.7	9.4	0.0	50.0	4.6	3.5	23.8	27.3	4.1	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	20.0	0.0	8.1	12.6	0.0	21.3	7.0	8.8	11.4	13.0	11.7	7.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	76.4	0.0	53.1	64.8	0.0	109.0	70.4	62.9	85.2	89.9	59.5	54.6
LnGrp LOS	E	A	D	E	A	F	E	E	F	F	E	D
Approach Vol, veh/h		679			730			1060			1098	
Approach Delay, s/veh		68.7			89.7			70.6			66.3	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	24.4	40.6		41.0	31.9	33.2		46.9				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	50.0	37.0		35.0	30.0	30.0		41.0				
Max Q Clear Time (g_c+I1), s	17.2	27.0		37.0	25.5	25.6		38.5				
Green Ext Time (p_c), s	1.3	3.5		0.0	0.3	1.6		1.0				

Intersection Summary			
HCM 6th Ctrl Delay		72.8	
HCM 6th LOS		E	

Notes

User approved volume balancing among the lanes for turning movement.

User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	605	721	13	6	0
Future Vol, veh/h	0	605	721	13	6	0
Conflicting Peds, #/hr	44	0	0	44	6	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	796	949	17	8	0

Major/Minor	Major1			Major2		
Conflicting Flow All	1010	0	-	0	1406	1002
Stage 1	-	-	-	-	1002	-
Stage 2	-	-	-	-	404	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	684	-	-	-	141	293
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	644	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	655	-	-	-	129	281
Mov Cap-2 Maneuver	-	-	-	-	129	-
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	655	-	-	-	129
HCM Lane V/C Ratio	-	-	-	-	0.061
HCM Control Delay (s)	0	-	-	-	34.7
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	559	2	16	629	76	5	0	47	3	0	1
Future Vol, veh/h	0	559	2	16	629	76	5	0	47	3	0	1
Conflicting Peds, #/hr	77	0	0	0	0	77	13	0	47	47	0	13
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	717	3	21	806	97	6	0	60	4	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	980	0	0	720	0	0	1629	1741	407	1380	1694	945
Stage 1	-	-	-	-	-	-	719	719	-	974	974	-
Stage 2	-	-	-	-	-	-	910	1022	-	406	720	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	702	-	-	879	-	-	74	86	594	112	92	317
Stage 1	-	-	-	-	-	-	387	432	-	302	329	-
Stage 2	-	-	-	-	-	-	328	312	-	593	431	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	651	-	-	879	-	-	70	76	567	85	81	290
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	76	-	85	81	-
Stage 1	-	-	-	-	-	-	387	432	-	280	290	-
Stage 2	-	-	-	-	-	-	307	275	-	506	431	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.2	18.3	41.8
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	337	651	-	-	879	-	-	103
HCM Lane V/C Ratio	0.198	-	-	-	0.023	-	-	0.05
HCM Control Delay (s)	18.3	0	-	-	9.2	0	-	41.8
HCM Lane LOS	C	A	-	-	A	A	-	E
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.2

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	37	745	289	360	372
v/c Ratio	0.19	0.82	0.59	0.46	0.47
Control Delay	33.1	19.9	26.4	16.7	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	33.1	19.9	26.4	16.7	16.7
Queue Length 50th (ft)	16	221	107	120	124
Queue Length 95th (ft)	39	310	168	184	190
Internal Link Dist (ft)	629		662		849
Turn Bay Length (ft)	100				
Base Capacity (vph)	644	1022	616	901	917
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.73	0.47	0.40	0.41

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	611	178	59	501	99
Future Volume (veh/h)	30	611	178	59	501	99
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.64	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	745	217	72	697	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	527	857	315	105	873	458
Arrive On Green	0.30	0.30	0.27	0.27	0.24	0.00
Sat Flow, veh/h	1781	1585	1157	384	3563	1870
Grp Volume(v), veh/h	37	745	0	289	697	0
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1541	1781	1870
Q Serve(g_s), s	1.1	22.0	0.0	12.5	13.7	0.0
Cycle Q Clear(g_c), s	1.1	22.0	0.0	12.5	13.7	0.0
Prop In Lane	1.00	1.00		0.25	1.00	
Lane Grp Cap(c), veh/h	527	857	0	420	873	458
V/C Ratio(X)	0.07	0.87	0.00	0.69	0.80	0.00
Avail Cap(c_a), veh/h	527	857	0	450	1552	815
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.8	12.9	0.0	24.2	26.4	0.0
Incr Delay (d2), s/veh	0.1	9.5	0.0	4.0	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	15.5	0.0	4.9	5.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.9	22.4	0.0	28.3	28.1	0.0
LnGrp LOS	B	C	A	C	C	A
Approach Vol, veh/h	782		289			697
Approach Delay, s/veh	22.3		28.3			28.1
Approach LOS	C		C			C

Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	24.9				22.8	26.7
Change Period (Y+Rc), s	4.6				4.6	4.7
Max Green Setting (Gmax), s	21.7				32.4	22.0
Max Q Clear Time (g_c+I1), s	14.5				15.7	24.0
Green Ext Time (p_c), s	1.1				2.6	0.0

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Bear Creek Residential TIA

1: West Ln & Morada Ln/E. Morada Ln

Existing Plus Project PM Peak Hour

Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	367	137	286	364	178	547	390	212	500	149
v/c Ratio	0.77	0.39	0.72	0.90	0.60	0.79	0.67	0.78	0.54	0.29
Control Delay	68.1	17.6	68.4	80.8	80.2	70.7	15.7	85.1	52.6	7.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.1	17.6	68.4	80.8	80.2	70.7	15.7	85.1	52.6	7.7
Queue Length 50th (ft)	371	23	295	375	96	292	44	222	240	0
Queue Length 95th (ft)	#576	98	447	#624	144	387	170	321	310	57
Internal Link Dist (ft)	277			850		253			751	
Turn Bay Length (ft)			290		325		220	345		
Base Capacity (vph)	477	351	428	434	764	833	633	394	973	524
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.39	0.67	0.84	0.23	0.66	0.62	0.54	0.51	0.28

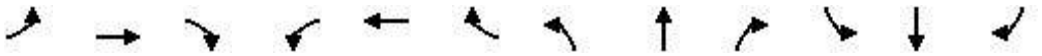
Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Bear Creek Residential TIA

1: West Ln & Morada Ln/E. Morada Ln

Existing Plus Project PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	221	129	299	157	155	167	514	367	199	470	140
Future Volume (veh/h)	124	221	129	299	157	155	167	514	367	199	470	140
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.67	1.00		1.00	1.00		1.00	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	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	132	235	137	318	167	165	178	547	262	212	500	149
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	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	335	304	389	188	186	236	697	311	239	932	405
Arrive On Green	0.28	0.28	0.28	0.22	0.22	0.22	0.07	0.20	0.20	0.13	0.26	0.26
Sat Flow, veh/h	661	1176	1068	1781	864	853	3456	3554	1585	1781	3554	1545
Grp Volume(v), veh/h	367	0	137	318	0	332	178	547	262	212	500	149
Grp Sat Flow(s),veh/h/ln	1837	0	1068	1781	0	1717	1728	1777	1585	1781	1777	1545
Q Serve(g_s), s	25.7	0.0	15.2	24.5	0.0	27.0	7.3	21.1	22.9	16.8	17.4	11.3
Cycle Q Clear(g_c), s	25.7	0.0	15.2	24.5	0.0	27.0	7.3	21.1	22.9	16.8	17.4	11.3
Prop In Lane	0.36		1.00	1.00		0.50	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	523	0	304	389	0	374	236	697	311	239	932	405
V/C Ratio(X)	0.70	0.00	0.45	0.82	0.00	0.89	0.75	0.78	0.84	0.89	0.54	0.37
Avail Cap(c_a), veh/h	523	0	304	495	0	477	840	863	385	433	932	405
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	0.0	42.3	53.6	0.0	54.6	65.9	55.0	55.7	61.3	45.6	43.4
Incr Delay (d2), s/veh	4.2	0.0	1.0	8.3	0.0	15.2	4.8	3.8	13.0	10.4	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.4	0.0	4.1	11.9	0.0	13.3	3.4	9.8	10.3	8.3	7.8	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.2	0.0	43.3	61.9	0.0	69.8	70.7	58.8	68.8	71.7	46.2	43.9
LnGrp LOS	D	A	D	E	A	E	E	E	E	E	D	D
Approach Vol, veh/h		504			650			987			861	
Approach Delay, s/veh		48.4			65.9			63.6			52.1	
Approach LOS		D			E			E			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	15.9	43.8		37.4	25.4	34.3		47.0				
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0				
Max Green Setting (Gmax), s	35.0	37.0		40.0	35.0	35.0		41.0				
Max Q Clear Time (g_c+I1), s	9.3	19.4		29.0	18.8	24.9		27.7				
Green Ext Time (p_c), s	0.6	3.6		2.4	0.5	3.3		2.5				

Intersection Summary			
HCM 6th Ctrl Delay		58.3	
HCM 6th LOS		E	

Notes
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	449	328	73	79	0
Future Vol, veh/h	0	449	328	73	79	0
Conflicting Peds, #/hr	34	0	0	34	4	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	607	443	99	107	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	576	0	-	0	835	527
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	4.13	-	-	-	6.63	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.83	-
Follow-up Hdwy	2.219	-	-	-	3.519	3.319
Pot Cap-1 Maneuver	995	-	-	-	322	550
Stage 1	-	-	-	-	591	-
Stage 2	-	-	-	-	719	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	963	-	-	-	302	532
Mov Cap-2 Maneuver	-	-	-	-	302	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	23.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	963	-	-	-	302
HCM Lane V/C Ratio	-	-	-	-	0.353
HCM Control Delay (s)	0	-	-	-	23.3
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.5

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	347	6	53	261	15	3	0	31	70	0	2
Future Vol, veh/h	2	347	6	53	261	15	3	0	31	70	0	2
Conflicting Peds, #/hr	52	0	0	0	0	52	1	0	13	13	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	445	8	68	335	19	4	0	40	90	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	406	0	0	453	0	0	938	997	240	775	992	398
Stage 1	-	-	-	-	-	-	455	455	-	533	533	-
Stage 2	-	-	-	-	-	-	483	542	-	242	459	-
Critical Hdwy	4.13	-	-	4.13	-	-	7.33	6.53	6.93	7.33	6.53	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3.519	4.019	3.319	3.519	4.019	3.319
Pot Cap-1 Maneuver	1151	-	-	1106	-	-	231	243	762	301	245	651
Stage 1	-	-	-	-	-	-	555	568	-	530	524	-
Stage 2	-	-	-	-	-	-	564	519	-	741	566	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1094	-	-	1106	-	-	216	212	753	251	214	618
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	212	-	251	214	-
Stage 1	-	-	-	-	-	-	553	566	-	502	460	-
Stage 2	-	-	-	-	-	-	518	455	-	690	564	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.4	11.3	26.9
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	618	1094	-	-	1106	-	-	255
HCM Lane V/C Ratio	0.071	0.002	-	-	0.061	-	-	0.362
HCM Control Delay (s)	11.3	8.3	0	-	8.5	0	-	26.9
HCM Lane LOS	B	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.2	0	-	-	0.2	-	-	1.6

Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	146	217	157	253	262
v/c Ratio	0.41	0.29	0.27	0.61	0.61
Control Delay	24.9	3.3	10.3	29.7	29.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	24.9	3.3	10.3	29.7	29.7
Queue Length 50th (ft)	46	5	21	84	87
Queue Length 95th (ft)	63	13	37	111	114
Internal Link Dist (ft)	629		662		849
Turn Bay Length (ft)	100				
Base Capacity (vph)	857	775	801	458	470
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.17	0.28	0.20	0.55	0.56

Intersection Summary

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	95	141	55	47	257	78
Future Volume (veh/h)	95	141	55	47	257	78
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.76	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	146	217	85	72	258	312
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	286	595	272	230	383	402
Arrive On Green	0.16	0.16	0.34	0.34	0.21	0.21
Sat Flow, veh/h	1781	1585	806	683	1781	1870
Grp Volume(v), veh/h	146	217	0	157	258	312
Grp Sat Flow(s),veh/h/ln	1781	1585	0	1489	1781	1870
Q Serve(g_s), s	3.6	4.8	0.0	3.8	6.4	7.6
Cycle Q Clear(g_c), s	3.6	4.8	0.0	3.8	6.4	7.6
Prop In Lane	1.00	1.00		0.46	1.00	
Lane Grp Cap(c), veh/h	286	595	0	502	383	402
V/C Ratio(X)	0.51	0.36	0.00	0.31	0.67	0.78
Avail Cap(c_a), veh/h	810	1062	0	668	457	480
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.6	10.9	0.0	11.9	17.4	17.9
Incr Delay (d2), s/veh	1.4	0.4	0.0	0.4	3.0	6.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.2	0.0	1.1	2.6	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	20.0	11.3	0.0	12.2	20.5	24.5
LnGrp LOS	B	B	A	B	C	C
Approach Vol, veh/h	363		157			570
Approach Delay, s/veh	14.8		12.2			22.7
Approach LOS	B		B			C

Timer - Assigned Phs	2			6	8
Phs Duration (G+Y+Rc), s	20.9			15.0	12.5
Change Period (Y+Rc), s	4.6			4.6	4.7
Max Green Setting (Gmax), s	21.7			12.4	22.0
Max Q Clear Time (g_c+I1), s	5.8			9.6	6.8
Green Ext Time (p_c), s	0.8			0.8	1.0

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

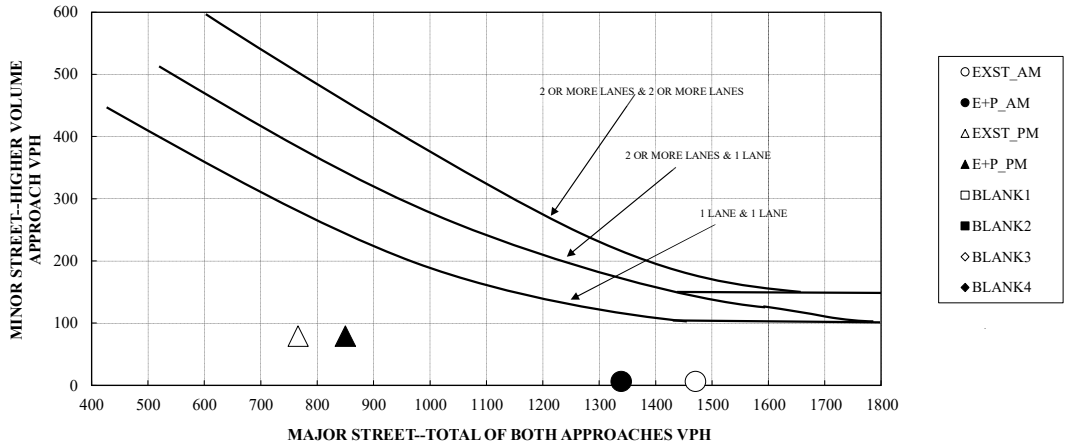
ATTACHMENT C

CA MUTCD PEAK HOUR SIGNAL WARRANT #3 SIGNAL WARRANT WORKSHEETS

CA SIGNAL WARRANT 3 ANALYSIS

SCENARIOS: "AM/PM PEAK HOUR" CONDITIONS

FIGURE 4C-3 WARRANT 3 PEAK HOUR VOLUME (CALIFORNIA MUTCD)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

SCENARIO	APPROACH(ES)		WARRANT MET?
	MAJOR	MINOR	
EXST_AM	1471	6	NO
E+P_AM	1339	6	NO
EXST_PM	766	79	NO
E+P_PM	850	79	NO
BLANK1	0	0	NO
BLANK2	0	0	NO
BLANK3	0	0	NO
BLANK4	0	0	NO

Note: Major approach is the total of both approaches. Minor approach is the highest of both approaches.

Date: **April 16, 2024** Intersection No.: **2**

Intersection: **Library Driveway & Morada Ln**

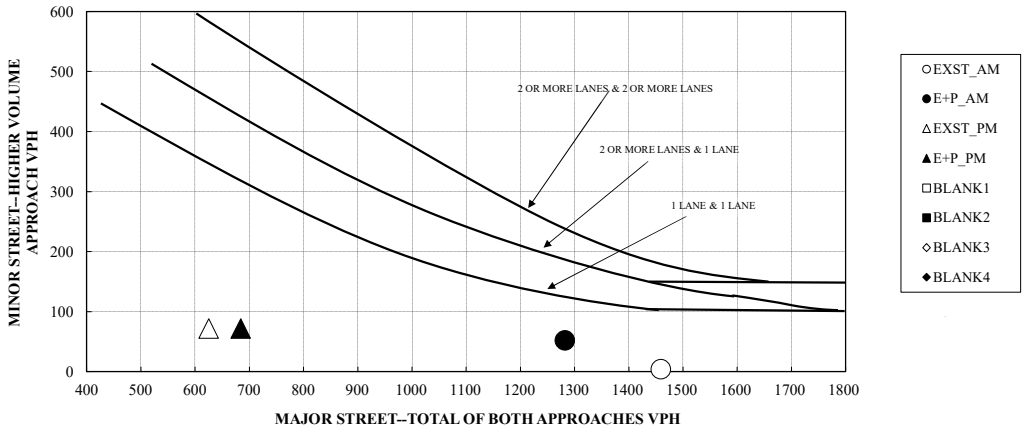
Number of lanes on MAJOR street: **2**

Number of lanes on MINOR street: **1**

CA SIGNAL WARRANT 3 ANALYSIS

SCENARIOS: "AM/PM PEAK HOUR" CONDITIONS

FIGURE 4C-3 WARRANT 3 PEAK HOUR VOLUME (CALIFORNIA MUTCD)



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

SCENARIO	APPROACH(ES)		WARRANT MET?
	MAJOR	MINOR	
EXST_AM	1459	4	NO
E+P_AM	1282	52	NO
EXST_PM	625	72	NO
E+P_PM	684	72	NO
BLANK1	0	0	NO
BLANK2	0	0	NO
BLANK3	0	0	NO
BLANK4	0	0	NO

Note: Major approach is the total of both approaches. Minor approach is the highest of both approaches.

Date: **April 16, 2024** Intersection No.: **3**

Intersection: **High School Staff Parking Lot/Street A & Morada Ln**

Number of lanes on MAJOR street: **2**

Number of lanes on MINOR street: **1**

ATTACHMENT D

SWITRS COLLISION DATA

EXHIBIT 1

CASE_ID	ACCIDENT_YEAR	PROC_DATE	JURIS	COLLISION_DATE	COLLISION_TIME	OFFICER_ID	REPORTING_DISTRICT
81726082	2022	20220317	3905	20220203	1617	7035	VAL
81751905	2022	20220420	3905	20220216	1345	7160	BEA
81786479	2022	20220602	3905	20220423	1856	7035	VAL
81889111	2022	20221013	3905	20220808	854	2819	VAL
81962373	2022	20230109	3905	20221101	2020	3130	
81985825	2022	20230203	3905	20221205	1530	2877	CIV
82028728	2023	20230327	3905	20230131	1221	2463	LAK
82034900	2023	20230403	3905	20230214	828	7267	VAL
82038222	2023	20230406	3905	20230301	1505	2908	
82073497	2023	20230522	3905	20230317	1730	2566	VAL
82152052	2023	20230824	3905	20230723	1612	2566	VAL
8744160	2018	20181126	3905	20181008	922	2402	VAL
8747176	2018	20190118	3905	20181128	2020	2765	VAL
8839609	2019	20190418	3905	20190402	1526	2810	VAL
8842454	2019	20190422	3905	20190303	321	2971	VAL
8862885	2019	20190529	3905	20190425	729	2277	VAL
8864959	2019	20190529	3905	20190502	640	3002	VAL
8984938	2019	20200111	3905	20191101	1450	3410	VAL
9029903	2019	20200206	3905	20191201	2158	2788	VAL
9034117	2019	20200215	3905	20191123	551	1315	VAL
9037905	2019	20200218	3905	20191123	557	1315	VAL
9202742	2020	20210119	3905	20201115	1430	3073	LAK
9284553	2021	20210714	3905	20210513	600	2775	VAL
9343646	2021	20211019	3905	20210812	1426	2542	VAL

EXHIBIT 1

DAY_OF_WEEK	CHP_SHIFT	POPULATION	CNTY_CITY_LOC	SPECIAL_COND	BEAT_TYPE	CHP_BEAT_TYPE
4	5	6	3905	0	0	0
3	5	6	3905	0	0	0
6	5	6	3905	0	0	0
1	5	6	3905	0	0	0
2	5	6	3905	0	0	0
1	5	6	3905	0	0	0
2	5	6	3905	0	0	0
2	5	6	3905	0	0	0
3	5	6	3905	0	0	0
5	5	6	3905	0	0	0
7	5	6	3905	0	0	0
1	5	6	3905	0	0	0
3	5	6	3905	0	0	0
2	5	6	3905	0	0	0
7	5	6	3905	0	0	0
4	5	6	3905	0	0	0
4	5	6	3905	0	0	0
5	5	6	3905	0	0	0
7	5	6	3905	0	0	0
6	5	6	3905	0	0	0
6	5	6	3905	0	0	0
7	5	6	3905	0	0	0
4	5	6	3905	0	0	0
4	5	6	3905	0	0	0

EXHIBIT 1

CITY_DIVISION_LAPD	CHP_BEAT_CLASS	BEAT_NUMBER	PRIMARY_RD	SECONDARY_RD	DISTANCE	DIRECTION
		0	MORADA LN	WEST LN	40	E
		0	MORADA LN	WEST LN	200	W
		0	MORADA LN	WEST LN	42	E
		0	MORADA LN	RONALD E MCNAIR W	0	
		0	MORADA LN	WEST LN	32	E
		0	RONALD E MCNAI	WEST LN	200	W
		0	MORADA LN	RONALD E MCNAIR W	0	
		0	MORADA LN	WEST LN	0	
		0	MORADA LN	RONALD E MCNAIR W	139	W
		0	MORADA LN	WEST LN	0	
		0	RONALD E MCNAI	WEST LN	1265	W
		0	WEST LN	MORADA A LN	25	N
		0	MORADA LN	WEST LN	0	
		0	MORADA LN	WEST LN	0	
		0	RONALD E MCNAI	WEST LN	1476	W
		0	MORADA A LN	WEST LN	20	E
		0	MORADA LN	WEST LN	99	E
		0	RONALD E MCNAI	WEST LN	855	W
		0	WEST LN	MORADA LN	70	S
		0	WEST LN	MORADA A LN	52	N
		0	WEST LN	MORADA A LN	52	N
		0	MORADA LN	WEST LN	8	E
		0	RONALD E MCNAI	WEST LN	700	W
		0	RONALD E MCNAI	WEST LN	108	W

INTERSECTION	WEATHER_1	WEATHER_2	STATE_HWY_IND	CALTRANS_COUNTY	CALTRANS_DISTRICT	STATE_ROUTE
N	A	-	N			
N	A	-	N			
N	A	-	N			
Y	A	-	N			
N	A	-	N			
N	F	-	N			
Y	A	-	N			
Y	B	-	N			
N	A	-	N			
Y	C	-	N			
N	A	-	N			
N	A	-	N			
Y	B	-	N			
Y	A	-	N			
N	C	-	N			
N	A	-	N			
N	A	-	N			
N	A	-	N			
N	C	-	N			
N	A	-	N			
N	A	-	N			
N	A	-	N			
N	A	-	N			
N	A	-	N			

EXHIBIT 1

ROUTE_SUFFIX	POSTMILE_PREFIX	POSTMILE	LOCATION_TYPE	RAMP_INTERSECTION	SIDE_OF_HWY	TOW_AWAY
						Y
						N
						Y
						N
						N
						N
						Y
						N
						N
						N
						N
						N
						Y
						Y
						Y
						N
						N
						N
						N
						N

EXHIBIT 1

COLLISION_SEVERITY	NUMBER_KILLED	NUMBER_INJURED	PARTY_COUNT	PRIMARY_COLL_FACTOR	PCF_CODE_OF_VIOL
0	0	0	2	A	-
0	0	0	2	A	-
0	0	0	1	A	-
0	0	0	2	A	-
0	0	0	2	A	-
0	0	0	2	D	-
0	0	0	1	A	-
0	0	0	3	A	-
0	0	0	2	A	-
0	0	0	2	A	-
3	0	1	1	A	-
0	0	0	2	A	-
0	0	0	3	B	-
0	0	0	2	A	-
0	0	0	1	A	-
0	0	0	2	A	-
0	0	0	2	A	-
0	0	0	2	A	-
0	0	0	2	A	-
0	0	0	1	A	-
3	0	2	1	C	-
0	0	0	2	A	-
0	0	0	1	A	-
0	0	0	2	A	-

EXHIBIT 1

PCF_VIOL_CATEGORY	PCF_VIOLATION	PCF_VIOL_SUBSECTION	HIT_AND_RUN	TYPE_OF_COLLISION	MVIW
7	21658	A	M	B	C
3	22350		N	C	C
3	22350		N	E	I
12	21457	A	N	G	B
3	22350		M	B	D
0			N	C	C
8	22107		N	E	I
5	21651	B	M	B	C
8	22102		M	B	C
7	21658	A	M	D	C
1	23152	A	N	F	J
1	23152	A	N	C	C
22			N	D	C
9	21804	A	N	D	C
1	23152	A	N	E	I
9	21804	A	M	D	C
3	22350		M	C	C
21	22106		N	D	C
3	22350		M	C	C
3	22350		N	E	I
18			N	E	I
3	22350		M	A	C
3	22350		M	E	I
3	22350		M	C	C

PED_ACTION	ROAD_SURFACE	ROAD_COND_1	ROAD_COND_2	LIGHTING	CONTROL_DEVICE	CHP_ROAD_TYPE
A	A	H	-	A	D	0
A	A	H	-	A	A	0
A	A	H	-	A	D	0
D	A	H	-	A	A	0
A	A	H	-	B	A	0
A	A	G	-	A	A	0
A	A	H	-	A	D	0
A	A	H	-	A	A	0
A	A	H	-	A	A	0
A	A	H	-	B	A	0
A	A	H	-	A	A	0
A	A	H	-	A	A	0
A	B	H	-	C	A	0
A	A	H	-	A	D	0
A	B	H	-	C	A	0
A	A	H	-	A	D	0
A	A	H	-	A	A	0
A	A	H	-	A	D	0
A	B	H	-	C	A	0
A	A	H	-	D	D	0
A	A	G	-	D	D	0
A	A	H	-	A	A	0
A	A	H	-	C	D	0
A	A	H	-	A	A	0

PEDESTRIAN_ACCIDENT	BICYCLE_ACCIDENT	MOTORCYCLE_ACCIDENT	TRUCK_ACCIDENT	NOT_PRIVATE_PROPERTY
				Y
				Y
				Y
Y				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y
				Y

EXHIBIT 1

ALCOHOL_INVOLVED	STWD_VEHTYPE_AT_FAULT	CHP_VEHTYPE_AT_FAULT	COUNT_SEVERE_INJ	COUNT_VISIBLE_INJ
	D	22	0	0
	A	1	0	0
	A	1	0	0
	A	1	0	0
	A	1	0	0
	-	-	0	0
	A	1	0	0
	D	22	0	0
	A	7	0	0
	A	1	0	0
Y	D	22	0	1
Y	A	1	0	0
	J	48	0	0
Y	A	1	0	0
Y	A	1	0	0
	A	1	0	0
	D	22	0	0
	A	1	0	0
	A	7	0	0
	A	1	0	0
	-	-	0	1
	A	1	0	0
	A	1	0	0
	A	1	0	0

EXHIBIT 1

COUNT_COMPLAINT_PAIN	COUNT_PED_KILLED	COUNT_PED_INJURED	COUNT_BICYCLIST_KILLED	COUNT_BICYCLIST_INJURED
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
1	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0

EXHIBIT 1

COUNT_MC_KILLED	COUNT_MC_INJURED	PRIMARY_RAMP	SECONDARY_RAMP	LATITUDE	LONGITUDE
0	0	-	-	38.03637	121.29525
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.0371	121.29999
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.0371	121.29999
0	0	-	-	38.03637	121.29525
0	0	-	-	38.0371	121.29999
0	0	-	-	38.03691	121.29519
0	0	-	-	38.0371	121.29999
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.036	121.295
0	0	-	-	38.0371	121.29999
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03656	121.30005
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.03691	121.29519
0	0	-	-	38.0369	121.29519