FINAL INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

Well 80 Walnut/ Auburn Project

PREPARED FOR:
Sacramento Suburban
Water District
3701 Marconi Avenue, Suite 100
Sacramento, CA 95821
(916) 972-7171
Contact: David Espinoza, P.E.

PREPARED BY:
Ascent Environmental
Contact: Suzanne Enslow,
Project Manager

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Contact: David Espinoza, P.E.

Prepared By:

Ascent Environmental, Inc.
455 Capitol Mall, Suite 300
Sacramento, California 95814
(916) 444-7301

Contact: Suzanne Enslow, Project Manager

July 2, 2021

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LIST OF ABBREVIATIONS

AB	Assembly Bill
bgs	below ground surface
BMP	best management practice
CAAQS	California ambient air quality standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CBC	California Building Code
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO_2	carbon dioxide
dB	decibel
dBA	A-weighted decibels
dbh	diameter at breast height
DDW	California Division of Drinking Water
DTSC	California Department of Toxic Substances Control
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
in/sec	inches per second
IPaC	Information for Planning and Consultation System
kVA	kilovolt-amperes
L_{eq}	Equivalent Continuous Sound Level
L_{max}	Maximum Sound Level
LRA	Local Responsibility Area
Metro Fire	Sacramento Metropolitan Fire District

MMRP	Mitigation, Monitoring, and Reporting Program
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NOA	Notice of Applicability
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
PPV	peak particle velocity
RMS	root-mean-square
ROG	reactive organic gases
SASD	Sacramento Area Sewer District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SPL	sound pressure level
SR	State Route
SSWD	Sacramento Suburban Water District
SVAB	Sacramento Valley Air Basin
TAC	toxic air contaminant
UCMP	University of California Museum of Paleontology
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VdB	vibration decibel
Well 80	Well 80 Walnut/Auburn

1 INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared by the Sacramento Suburban Water District (SSWD) to evaluate potential environmental effects resulting from Well 80 Walnut/Auburn Project (Well 80). Section 2, "Project Description" presents the detailed project information.

1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

This document has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). An initial study is prepared by a lead agency to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]), and thus to determine the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a "public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The Initial Study shows that there is no substantial evidence…that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects, but revisions in the project plans or proposals made by, or agreed to by the applicant before…public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and there is no substantial evidence, in light of the whole record before the agency, that the project as revised may have a significant effect on the environment." In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the project would not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report (EIR). By contrast, an EIR is required when the project may have a significant environmental impact that cannot clearly be reduced to a less-than-significant level by adoption of mitigation or by revisions in the project design.

As described in the environmental checklist (Chapter 3), the project would not result in any unmitigated significant environmental impacts. Therefore, an IS/MND is the appropriate document for compliance with the requirements of CEQA. This IS/MND conforms to these requirements and to the content requirements of State CEQA Guidelines Section 15071.

1.1 LEAD AGENCY

Under CEQA, the lead agency is the public agency with primary responsibility over approval of the project. SSWD is the CEQA lead agency because it is responsible for discretionary approval of the Well 80 Project.

1.2 CIRCULATION OF THE INITIAL STUDY AND MITIGATED NEGATIVE DECLARATION

The purpose of this document is to present to decision-makers and the public information about the environmental consequences of implementing the project. A Notice of Intent (NOI) to adopt this IS/MND was published and this document was available for public and agency review and comment for a 30-day public review period from May 28, 2021 to June 28, 2021. The IS/MND was available for download and review at: https://www.sswd.org/departments/engineering/capital-improvement-program/current-projects/well-80-walnut-auburn and the NOI was posted at the project site and at SSWD's offices. Supporting documentation referenced in the IS/MND was available upon request from SSWD. One written comment letter was received from the Sacramento Municipal Utility District (SMUD) (provided in Appendix E). SSWD responded to SMUD's comment, incorporated additional detail about necessary electrical infrastructure in this IS/MND, and continues to coordinate with SMUD on electrical services for the Well 80 Project.

1.3 SUMMARY OF FINDINGS

Chapter 3 of this document contains the analysis and discussion of potential environmental impacts of the project.

Based on the issues evaluated in that chapter, it was determined that the project would have either no impact or a less-than-significant impact related to most of the issue areas identified in the Environmental Checklist, included as Appendix G of the State CEQA Guidelines. These include the following issue areas:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality
- Energy
- Geology / Soils
- Greenhouse Gas Emissions and Climate Change
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use / Planning
- Mineral Resources
- Population / Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities / Service Systems; and
- Wildfire Hazard.

Potentially significant impacts were identified for biological resources, cultural resources, and noise; however, mitigation measures included in the IS/MND and the Mitigation, Monitoring, and Reporting Program (MMRP) in Appendix F would reduce all impacts to a less-than-significant level. Based on the one comment received on the IS/MND, no new environmental effects were identified.

1.4 ENVIRONMENTAL PERMITS

SSWD is the CEQA lead agency for the Well 80 Walnut/Auburn Project. The SSWD Board will be responsible for adopting the Mitigated Negative Declaration and approving the project.

Additionally, the following responsible agencies may have jurisdiction over some or all of the elements of the proposed project:

- Sacramento County Environmental Management Department: well installation permit;
- County of Sacramento: encroachment permit, grading permit, and tree removal permit;
- State of California, State Water Resources Control Board: amended water system permit;
- Central Valley Regional Water Quality Control Board: NPDES permit, storm water pollution prevention plan;
- Sacramento Metropolitan Air Quality Management District: natural gas generator (authority to construct and permit to operate); and
- Sacramento Area Sewer District: temporary discharge permit.

1.5 CEQA DETERMINATION

SSWD has determined that although the proposed project could have a significant effect on the environment, a significant effect would not occur with implementation of the mitigation measures presented in the MMRP (Appendix F) because the proposed mitigation measures would reduce the effects of any impacts to below the established thresholds of significance. Therefore, SSWD published the IS/MND on May 28, 2021, and SSWD's Board of Directors will consider adoption of the MND at the Board meeting on July 19, 2021.

1.6 DOCUMENT ORGANIZATION

This IS/MND is organized as follows:

Chapter 1: Introduction. This chapter introduces the environmental review process. It describes the purpose and organization of this document as well as presents a summary of findings.

Chapter 2: Project Description. This chapter describes the purpose of and need for the proposed project, identifies project objectives, and provides a detailed description of the project.

Chapter 3: Environmental Checklist. This chapter presents an analysis of a range of environmental issues identified in the CEQA Environmental Checklist and determines if project actions would result in no impact, a less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any impacts were determined to be potentially significant, an EIR would be required. For this project, however, none of the impacts were determined to be significant after implementation of mitigation measures.

Chapter 4: References. This chapter lists the references used in preparation of this IS/MND.

Chapter 5: List of Preparers. This chapter identifies report preparers.

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2 PROJECT DESCRIPTION

2.1 INTRODUCTION

The Sacramento Suburban Water District (SSWD) proposes to construct and operate a new groundwater production well, Well 80 Walnut/Auburn (Well 80), within its service area, in Sacramento County. This well is necessary to maintain SSWD's groundwater extraction capability to meet the existing demand.

SSWD is a publicly owned and operated water utility regulated by California Division of Drinking Water and State Water Code laws. SSWD provides water to its customers from 70 operational groundwater production wells. The District has contractual rights to 26,064 acre-feet per year from the City of Sacramento water entitlement, and a contract to purchase up to 29,000 acre-feet of surface water per year from Placer County Water Agency. The service area of SSWD includes Arden/Arcade, Foothill Farms between Interstate 80 and the Union Pacific Railroad; and portions of Citrus Heights, Carmichael, North Highlands, the City of Sacramento, Antelope, and McClellan Business Park (SSWD 2020). SSWD holds a water system permit administered by the California Division of Drinking Water for operation of the water supply and distribution system.

2.2 PROJECT LOCATION

The 1.1-acre project site is located at 5334 Walnut Avenue, in unincorporated Sacramento County (Figure 2-1). The project site is undeveloped and includes ruderal vegetation and various mature trees. A drainage ditch is located in the eastern part of the project site. The ditch conveys stormwater from a storm drain outlet near the north property line to a storm drain inlet near the south property line. The ditch also collects runoff from the project site. The project site is bordered by Walnut Avenue to the west, an undeveloped residentially zoned parcel to the north, and developed light commercially zoned parcels to the northeast, southeast, and south. Surrounding land uses include various residential and commercial uses.

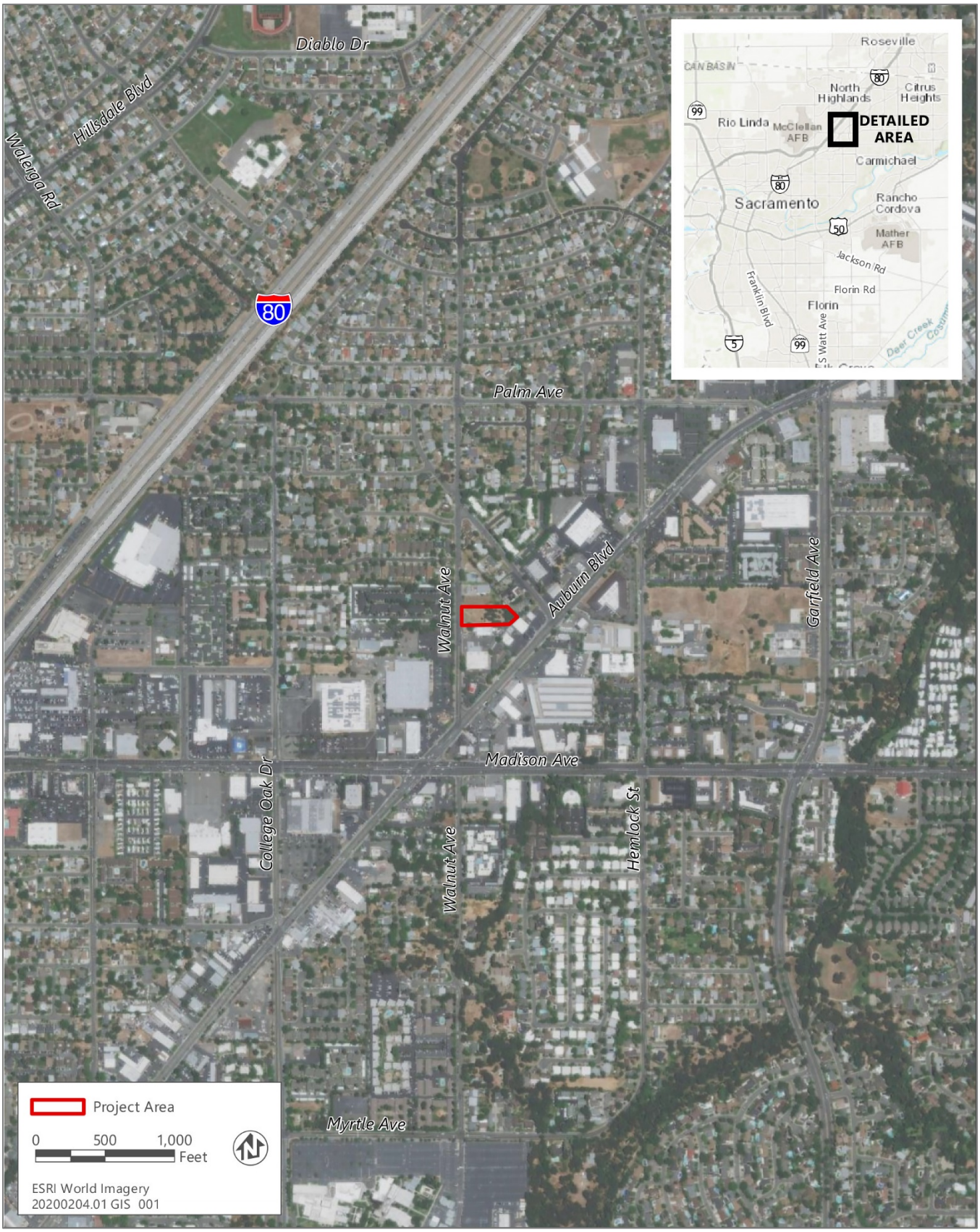
2.3 PROJECT NEED

SSWD needs to construct a new groundwater production well in its North Service Area well field as a replacement for supplies and source capacity that have been lost due to aging infrastructure and water quality impacts. Well 80 would not increase SSWD's groundwater extraction; rather, it is needed to maintain existing groundwater extraction capability to meet demand and water quality requirements as older wells reach the end of their useful life and are taken out of service.

2.4 PROJECT CHARACTERISTICS

The Well 80 Project would include: construction and operation of one groundwater well, anticipated to be capable of producing approximately 1,500 gallons per minute (gpm); construction and operation of a chlorination system for the pumped groundwater, and associated site infrastructure for general construction and maintenance activities, and access to the well and treatment facilities. The preliminary site plan for these facilities is provided Figure 2-2.

Well construction activities would meet the minimum requirements established in the California Well Standards, including Bulletin 74-81 and the draft supplemental Bulletin 74-90. Siting and construction of Well 80 would also comply with the California Waterworks Standards (California Code of Regulations, Title 22, Division 4, Chapter 16).



Source: adapted by Ascent Environmental in 2021

Figure 2-1 Project Vicinity

Source: adapted by Ascent Environmental in 2021

Figure 2-2 Preliminary Site Plan

2.4.1 Well 80

The primary component of the project is the construction and operation of one municipal groundwater well on the central portion of project site (Figure 2-2). The Well 80 conceptual plan for the well includes following elements:

- Construction of an approximately 38-inch diameter conductor casing to a depth of approximately 55 feet. The conductor casing would serve to both stabilize the upper formations during borehole drilling and provide the required California Division of Drinking Water sanitary seal.
- Construction of an approximately 36-inch diameter borehole to a depth of approximately 250 feet below ground surface (bgs), and then stepping down to an approximately 26-inch diameter borehole from approximately 250 feet bgs to approximately 520 feet bgs. An 18-inch outer diameter well casing assembly would extend from approximately 3 feet above ground surface to a depth of approximately 520 feet bgs with well screen from approximately 260 to 500 feet bgs.
- Construction of one camera access tube, one sounding tube, and one gravel feed tube. A graded gravel envelope would extend in the annular space between the well casing and the borehole from approximately 230 feet to 520 bgs and a sand-cement grout annular seal would extend from approximately 230 feet bgs to the ground surface.
- Installation of a vertical turbine pump and 200 horsepower motor for the well, supported by a concrete pedestal surrounded by a concrete pad, and within a sound attenuating enclosure for sound attenuation. The well pump would use approximately 2,890 kWh per day, based on 24-hour operation at 1,500 gpm and 78 percent pump efficiency (Montgomery & Associates 2021).

2.4.2 Treatment Facilities

The groundwater pumped from Well 80 would require chlorination prior to being added to the SSWD distribution system. An approximately 1,000 to 1,500 square foot single-story building, located in the northwestern portion of the site (Figure 2-2), would house the motor control center, chlorination facilities, analytical instruments and facilities, including a utility sink and bench. The building would be equipped with a fire sprinkler system, if necessary, to meet fire code due to the storage of chemicals in the building. The potable water pumped from Well 80 and treated onsite would be conveyed to the existing SSWD potable water distribution system located in Walnut Avenue through a new pipeline.

2.4.3 Site Improvements

As shown in the preliminary site plan in Figure 2-2, material storage bins and a vactor dump pit would be located in the southwest area of the site. The 20-foot by 15-foot vactor dump pit would be constructed to collect liquid or solid waste material and would be connected to the sanitary sewer. An approximately 60-foot by 20-foot concrete pad would be constructed to support material storage bins.

Vehicular access to the site would be provided from Walnut Avenue. The site entry road would be approximately 20 feet wide, would allow sufficient space between structures to permit maintenance and repair, and would provide for sufficient emergency vehicle access and turnaround.

For security, the site would be fenced with an 8-foot-tall chain-link security fence and automatic rolling gate. If deemed necessary, SSWD may consider construction of a permanent sound wall around the perimeter (or portions of the perimeter) of the site. Security lighting would be installed; fixtures would be shielded and downcast, and where appropriate, lighting would be motion-sensor or on set timers.

2.4.4 Utility Connections

Electrical service size would be provided by the Sacramento Municipal Utility District and is anticipated to be 400-amp, 3-phase, 480-volt. The project would include a 300-kilovolt-amperes (kVA) electrical transformer (Figure 2-2). A new pole and overhead electrical line is anticipated to be needed to serve the proposed 300 kVA transformer. The line would cross from the 12kV mainline on the west side of Walnut Avenue to the project site east of Walnut Avenue. An emergency generator located in the northwestern portion of the site near the treatment building (Figure 2-2). The emergency generator would be approximately 300 kVA to power the well during power outages and would be within a sound-attenuated enclosure. The generator would be fueled by natural gas, which would require a connection to the natural gas line located in Walnut Avenue.

The treatment building drains and vactor truck dump station would be connected to the local sanitary sewer system (Sacramento Area Sewer District), which conveys wastewater to the Sacramento Regional Wastewater Treatment Plant for treatment prior to discharge. The building drainage would include flows from the lab sink, mop sink, sample drains, and floor drain(s). Spill containment would be provided for any chemicals stored onsite so that spilled chemicals do not flow out of the building and potentially enter the storm drain system.

Stormwater would be conveyed to the east end of the site through overland flow and gutters and discharged into the existing north-to-south-flowing drainage ditch, which is open and unpaved on the project site, but is piped on the adjoining properties upstream and downstream.

2.5 CONSTRUCTION

Construction would occur in two phases. Well 80 drilling and testing would occur late summer through the winter of 2021, involving limited site preparation for construction. After well construction and groundwater quality sampling is completed, the well equipping and groundwater treatment designs would be completed and constructed, which are anticipated to be completed in 2023 or 2024.

Project construction would include:

- Establishing best management practices for erosion control.
- Establishing Basic Construction Emission Control Practices consistent with the Sacramento Metropolitan Air Quality Management District's Rule 403 regarding fugitive dust.
- Posting contact information for a noise complaint administrator to respond to any noise complaints that arise during well construction.
- Site clearing and including tree removal.
- Installation of a 24-foot tall temporary barrier around the well construction activities to reduce noise, light, and dust from construction of the well.
- Well construction and testing.
    - Discharges during construction may include groundwater pumped during well development and testing as well as water used to pressure test pipelines. Temporary hoses and/or pipes would be used to convey discharges to the existing drainage ditch at the eastern end of the project site and/or across Walnut Avenue to the SSWD property on the west side of Walnut Avenue. Hoses and/or pipes would be equipped with appropriate energy dissipation devices limiting erosion. (As stated below, SSWD has a Notice of Applicability (NOA) and a National Pollutant Discharge Elimination System (NPDES) permit to discharge water into the regional storm water system.)
- Construction of the permanent access road.
- Construction of permanent utility connections.
- Construction of the treatment building and the chlorination system, vactor dump pit, and materials storage bins.
- Paving the site.

- Installation of permanent site fencing, security lighting, and other security measures, as necessary.

Standard construction equipment for well installation and testing would include: a drilling rig, forklift, backhoe, dump trucks, concrete delivery with pumping equipment, generator, air compressor, crane, vertical turbine well pump and engine, as well as personal vehicles or other ancillary equipment. Standard construction equipment for the above-ground facilities would include: a bulldozer, loader, excavator, forklift, dump trucks, roller/compactor, concrete delivery and pumping equipment, generator, crane, and asphalt paver.

To the extent feasible, construction activities would be limited to daytime hours, between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays and Sundays. However, reverse rotary drilling is completed on a 24-hour per day, 7-day per week schedule during certain aspects of the well installation process. In addition, the pilot borehole drilling, reaming, well installation, mechanical and chemical development, and constant-rate discharge testing would be completed on a 24-hour per day schedule for the integrity of the well or test.

Recognizing that well construction requires 24-hour construction activities, and to reduce dust and light from construction activities, a 24-foot-tall temporary barrier wall would be installed around the well construction activities. In addition, SSWD would post contact information on the fencing at the project site for any noise complaints and would address noise complains on a case-by-case basis. Once the well construction is completed the temporary barrier would be removed. Construction of the treatment facility building and other site improvements would not require 24-hour construction activities and therefore would not require the temporary noise barrier.

Initial development groundwater would be diverted to the sewer manhole at the driveway entrance on the west side of Walnut Avenue and discharged in accordance with a sewer discharge permit from the Sacramento Area Sewer District. After the water levels in the new well stabilize, a 24-hour constant rate discharge test would be completed at the design capacity of 1,500 gpm or a rate determined by the step-rate discharge test. A water quality sample would be collected and delivered to the laboratory under appropriate chain-of-custody. Discharge of final development and testing groundwater would be diverted to the drainage ditch on the eastern portion of the site. Installation and maintenance of discharge piping and appropriate erosion control measures (e.g., rubber pond liner, splash pad, hay bales) at the point of discharge to the drainage ditch would be required.

SSWD was granted an NOA to discharge under Order WQ 2014-0194-DWQ, NPDES No. CAG140001 (NPDES Permit) covering Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters by the California Regional Water Quality Control Board, Central Valley Region (California Regional Water Quality Control Board, Central Valley Region 2014). The NOA and NPDES Permit allow SSWD to discharge water into regional storm water systems pursuant to Section 402 of the federal Clean Water Act (NPDES permit) and Article 4, Chapter 4, Division 7 of the California Water Code (Waste Discharge Requirements). The following SSWD activities are covered under the NOA and NPDES Permit:

- well development water,
- construction dewatering,
- pump/well testing,
- pipeline pressure testing,
- pipeline flushing or dewatering,
- condensate discharges,
- water supply system discharges, and
- miscellaneous dewatering/low threat discharges.

Under the terms of the NOA and NPDES Permit, "… potable water discharges as qualified under this permit have been determined to pose no significant threat to water quality."

2.5.1 Operation and Maintenance

Well 80 would replace other aging SSWD facilities, which would be taken offline. The operation and maintenance of this well would be consistent with ongoing SSWD groundwater well operations. It is anticipated that operation and maintenance of Well 80, including the chlorination equipment, would require two staff trips per week and one chemical delivery trip per week. It should be noted that this project is anticipated to reduce staff travel because the Well 80 site is across the street from SSWD's primary maintenance yard.

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3 ENVIRONMENTAL CHECKLIST

PROJECT INFORMATION

1.	Project Title:	Well 80 Walnut/Auburn
2.	Lead Agency Name and Address:	Sacramento Suburban Water District 3701 Marconi Avenue, Suite 100 Sacramento, CA 95821
3.	Contact Person and Phone Number:	David Espinoza, P.E., Senior Engineer P: (916) 679-2886
4.	Project Location:	5334 Walnut Avenue, in unincorporated Sacramento County
5.	Project Sponsor's Name and Address:	Same as lead agency
6.	General Plan Designation:	Commercial/Offices, Mixed-Use Corridor
7.	Zoning:	Light Commercial (LC), Multiple Family Residential (RD-20)
8.	Description of Project:	See Chapter 2
9.	Surrounding Land Uses and Setting:	The project site is bordered by Walnut Avenue to the west, Auburn Boulevard to the southeast, and Kohler Road to the northeast. Surrounding land uses include various residential and commercial uses.
10.	Other public agencies whose approval is required: (e.g., permits, financing approval, or participation agreement)	See Section 1.4.

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? 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.?

    Wilton Rancheria submitted written request for notification of projects from SSWD. SSWD provided notification of the Well 80 project to Wilton Rancheria via letter on May 13, 2021. As of publication of this document, Wilton Rancheria had not responded.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Where checked below, the topic with a potentially significant impact will be addressed in an environmental impact report.

☐ Aesthetics	☐ Agriculture and Forest Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology / Soils	☐ Greenhouse Gas Emissions	☐ Hazards / Hazardous Materials
☐ Hydrology / Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance
	☐ None	☒ None with Mitigation Incorporated

DETERMINATION

On the basis of this 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** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

5/26/2021

Date

Dana Dean

Printed Name

Engineering Manager

Title, Sacramento Suburban Water District

3.1 AESTHETICS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
I. Aesthetics.				
Except as provided in Public Resources Code section 21099 (where aesthetic impacts shall not be considered significant for qualifying residential, mixed-use residential, and employment centers), would the project:				
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 non-urbanized 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 points.) 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?	☐	☐	☒	☐

3.1.1 Environmental Setting

The project site is undeveloped, but disturbed, and includes ruderal vegetation and various mature trees. A drainage ditch is located in the eastern part of the project site, which connects to drain pipe to the north and south of site. The visual character of the project area is urban development with commercial and residential uses. Structures surrounding the project site are one to two stories in height. Other built features include fencing, power lines, roads, and pedestrian sidewalks. Due to the developed nature of the project area and flat topography, long distance views are limited to surrounding development; no expansive scenic views exist.

3.1.2 Discussion

a) Have a substantial adverse effect on a scenic vista?

No Impact. A scenic vista is generally defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality, or a natural or cultural resource that is indigenous to the area. The project site is located in a developed area of Sacramento County and is surrounded by commercial and residential uses. No long-distance or scenic views can be seen from the project site; therefore, construction and operation of the project would not impede or adversely affect a scenic vista. No impact would occur, and no mitigation would be required.

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

No Impact. The nearest scenic highway, State Route (SR) 160, is located approximately 16 miles southwest of the project site (Caltrans 2011). Project construction and operation would not degrade or damage existing scenic resources along SR 160. No impact would occur, and no mitigation would be required.

c) In non-urbanized 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 points.) 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 is located in an urban area of Sacramento County and is surrounded by developed uses. Project construction activities would involve ground disturbance associated with installation of a well and appurtenant facilities and utility connections and the presence of construction equipment and personnel. A temporary 24-foot-tall barrier wall would be installed during construction of the well to provide a barrier to noise, dust, and lighting necessary during the well drilling and construction. The barrier wall and construction activities would temporarily alter views of the project area. Once operational, the project site would be occupied by a groundwater well, a treatment building, a transformer, an emergency generator, material storage bins, vactor dump pit, and associated site paving including the access road, and security fencing. Although the site would change from being undeveloped to developed with infrastructure facilities, the project site is surrounded by urban development and project implementation would not substantially degrade the existing visual character of the developed project area. The project would have a less-than-significant impact related to a scenic quality and no mitigation is required.

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

Less-than-significant Impact. To the extent feasible, construction activities would be limited to daytime hours, between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays and Sundays. However, reverse rotary drilling is completed on a 24-hour per day, 7-day per week schedule during certain aspects of the well installation process. The pilot borehole drilling, reaming, well installation, mechanical and chemical development, and constant-rate discharge testing would require a 24-hour per day schedule for the integrity of the well or test. Recognizing that well construction requires 24-hour construction activities, to reduce light (as well as noise and dust) from construction activities, a 24-foot tall temporary barrier wall would be installed as a project feature around the well construction activities. Once the well construction is complete, the barrier wall would be removed because construction of the treatment facility building and other site improvements would not require 24-hour construction activities and therefore do not require the temporary noise barrier.

Once operational, the onsite facilities would include limited exterior security lighting, which would be shielded and downcast to prevent light pollution on surrounding residences and the night sky. Therefore, the project would have a less-than-significant impact related to light and glare and no mitigation is required.

3.2 AGRICULTURE AND FOREST RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
II. Agriculture and Forest Resources.				
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, as updated) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.2.1 Environmental Setting

The project site is zoned as Light Commercial (LC)/Multiple Family Residential (RD-20). No surrounding sites or properties are zoned or used for agricultural uses (Sacramento County 2020).

The project site and surrounding area is identified as Urban and Built-Up Land by the California Department of Conservation's (CDC's) Farmland Mapping and Monitoring Program (CDC 2016). Urban and Built-Up Land includes residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatments, and water control structures. No portion of the project site or surrounding parcels are held under Williamson Act contracts (CDC 2015).

No areas within or surrounding the project site are designated as forest land or timberland.

3.2.2 Discussion

a-e) 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; conflict with existing zoning for agricultural use or a Williamson Act contract; 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)); result in the loss of forest land or conversion of forest land to non-forest use; or 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?

No Impact. The project site does not contain any lands designated as Important Farmland (i.e., Prime Farmland, Unique Farmland, or Farmland of Statewide Importance) or zoned as forest land or a timberland area. There are no active agricultural operations within or near the project site, and there is no Williamson Act contract associated with the project site. No existing agricultural or timber-harvest uses are located on or near the project site. Therefore, the project would have no impact on agriculture or forest land, and no mitigation is required.

3.3 AIR QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
III. Air Quality.				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make the following determinations.				
Are significance criteria established by the applicable air district available to rely on for significance determinations?		☒ Yes		☐ No
Would the project:				
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?	☐	☐	☒	☐

3.3.1 Environmental Setting

The U.S. Environmental Protection Agency has established national ambient air quality standards (NAAQS) for six criteria air pollutants, which are known to be harmful to human health and the environment: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (which is categorized into particulate matter less than or equal to 10 microns in diameter [PM_{10}] and particulate matter less than or equal to 2.5 microns in diameter [$PM_{2.5}$]), and sulfur dioxide. The State of California has established the California ambient air quality standards (CAAQS) for these six pollutants, as well as for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. NAAQS and CAAQS were established to protect the public from adverse health impacts caused by exposure to air pollution. A brief description of the criteria air pollutants and their effects on health is provided in Table 3.3-1.

The project site, in Sacramento County, is within the Sacramento Valley Air Basin (SVAB). The SVAB is bounded on the north by the North East Plateau Air Basin, on the south by the San Joaquin Valley Air Basin, on the east by the southern portion of the Cascade Range and the northern portion of the Sierra Nevada, and on the west by the Coast Ranges. Sacramento County is currently designated as nonattainment for both the federal and state ozone standards, the federal $PM_{2.5}$ standard, and the state PM_{10} standard. The region is designated as in attainment or being unclassifiable for all other NAAQS and CAAQS (CARB 2019).

The Sacramento Metropolitan Air Quality Management District (SMAQMD) is the local agency responsible for air quality planning and development of air quality plans in the project area. SMAQMD maintains an attainment plan for achieving the state and federal ozone standards that was updated and approved by the SMAQMD Board and the California Air Resources Board (CARB) in 2017. The air quality plan establishes strategies to achieve compliance with the NAAQS and CAAQS ozone standards in all areas within SMAQMD's jurisdiction. There are currently no plans available for achieving the federal $PM_{2.5}$ or state PM_{10} standards. SMAQMD develops regulations and emission

reduction programs to control emissions of criteria air pollutants, ozone precursors (oxides of nitrogen [NO_X] and reactive organic gases [ROG]), toxic air contaminants (TACs), and odors within its jurisdiction.

Table 3.3-1 Criteria Air Pollutants

Pollutant	Sources	Effects
Ozone	Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG), also sometimes referred to as volatile organic compounds by some regulating agencies, and nitrogen oxides (NO_X). The main sources of ROG and NO_X, often referred to as ozone precursors, are products of combustion processes (including motor vehicle engines) and the evaporation of solvents, paints, and fuels.	Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases, such as asthma, bronchitis, and emphysema.
Carbon monoxide	Carbon monoxide (CO) is usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicle engines; the highest emissions occur during low travel speeds, stop-and-go driving, cold starts, and hard acceleration.	Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue; impair central nervous system function; and induce angina (chest pain) in persons with serious heart disease. Very high levels of CO can be fatal.
Particulate matter	Some sources of particulate matter, such as wood burning in fireplaces, demolition, and construction activities, are more local in nature, while others, such as vehicular traffic, have a more regional effect.	Scientific studies have suggested links between fine particulate matter and numerous health problems, including asthma, bronchitis, and acute and chronic respiratory symptoms, such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air.
Nitrogen dioxide	Nitrogen dioxide (NO_2) is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2.	Aside from its contribution to ozone formation, NO_2 can increase the risk of acute and chronic respiratory disease and reduce visibility.
Sulfur dioxide	Sulfur dioxide (SO_2) is a combustion product of sulfur or sulfur-containing fuels, such as coal and diesel.	SO_2 is also a precursor to the formation of particulate matter, atmospheric sulfate, and atmospheric sulfuric acid formation that could precipitate downwind as acid rain.
Lead	Leaded gasoline, lead-based paint, smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere, with lead levels in the air decreasing substantially since leaded gasoline was eliminated in the United States.	Lead has a range of adverse neurotoxic health effects.

Notes: CO = carbon monoxide; NO_2 = nitrogen dioxide; NO_x = nitrogen oxides; ROG = reactive organic gases; SO_2 = sulfur dioxide.
Source: EPA 2018

SMAQMD published the *Guide to Air Quality Assessment in Sacramento County*, last updated in April 2020, which provides air quality guidance for the preparation of CEQA documents. This guide establishes SMAQMD-recommended thresholds of significance for criteria air pollutants for the evaluation of air quality impacts in Sacramento County. CEQA-related air quality thresholds of significance are tied to achieving or maintaining the attainment designation with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants established to protect the public from adverse health impacts. SMAQMD's air quality thresholds of significance are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health. Implementing the project would have a significant impact related to air quality such that human health would be adversely affected if it would:

- result in construction-generated emissions of NO_X exceeding 85 pounds per day (lbs/day), PM_{10} exceeding 80 lbs/day or 14.6 tons per year (tpy), or $PM_{2.5}$ exceeding 82 lbs/day or 15 tpy once SMAQMD's Basic Construction Emission Control Practices have been implemented (SMAQMD's Fugitive Dust Rule 403);
- result in operational emissions of ROG exceeding 65 lbs/day, NO_X exceeding 65 lbs/day, PM_{10} exceeding 80 lbs/day or 14.6 tpy, or $PM_{2.5}$ exceeding 82 lbs/day or 15 tpy;
- result in carbon monoxide emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 parts per million (ppm) or the 8-hour CAAQS of 9 ppm during construction and operations;
- expose any off-site sensitive receptor to a substantial incremental increase in TAC emissions that exceed 10 in one million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater; or
- create objectional odors affecting a substantial number of people.

3.3.2 Discussion

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less-than-Significant Impact. The project involves construction in two phases: Well 80 drilling and testing would occur first, then the treatment building, vactor dump pit, material storage bins, and other site improvements would be designed and constructed. The maintenance and operation of the well and treatment facility would require approximately two staff trips per week and one chemical delivery trip per week. However, Well 80 would replace other aging well facilities that SSWD needs to take out of service; therefore, there would be no long-term increase in mobile-source emissions. The project would not result in a long-term increase in population, economic activity, or other emissions-generating activity in the region. The project would be required to comply with SMAQMD rules and regulations including implementation of Basic Construction Emission Control Practices under Rule 403 regulating fugitive dust emissions, which would minimize emissions of PM_{10} and $PM_{2.5}$. Therefore, this impact would be less than significant, and no mitigation is required.

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?

Less than Significant. Construction would occur in two phases. Well 80 drilling and testing would occur late summer through the winter of 2021, involving limited site preparation for construction. After well construction and testing, the treatment building, vactor dump pit, materials storage bins, and other site improvements would be constructed, which are anticipated to be completed in 2023 or 2024. Project construction would result in temporary emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ associated with construction activities (e.g., site preparation, grading), operation of off-road equipment, and worker commute trips. Fugitive dust emissions of PM_{10} and $PM_{2.5}$ would be primarily associated with site preparation and drilling and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and unpaved vehicle miles traveled. Exhaust from off-road equipment can also contain PM_{10} and $PM_{2.5}$. Emissions of ozone precursors, ROG and NO_X, are associated primarily with construction equipment and on-road mobile exhaust. Construction activities associated with the project would likely require the use of equipment such as drill rigs, dozers, cranes, forklifts, generators as well as other diesel-fueled equipment, as necessary. Construction would be generally separated into five components: site preparation, drilling, building construction, paving and architectural coating.

Construction-generated emissions and operational emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program. Modeling was based on project-specific information, where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use type. The construction phases included in the air quality modeling are

site preparation, grading, building construction, paving and architectural coating. Although most of construction would adhere to daytime construction hours (between 7:00 a.m. and 7:00 p.m., Monday through Friday, and between 8:00 a.m. and 6:00 p.m. on Saturdays and Sundays), the well drilling and construction would require periods of construction that run 24 hours a day. Therefore, worst-case construction emissions were estimated by assuming site preparation and grading activities occurring 24 hours, Monday through Sunday. As shown in Table 3.3-2, project construction would not generate emissions in excess of the SMAQMD thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$. For assumptions and modeling inputs, refer to Appendix A.

Table 3.3-2 Summary of Emissions Generated During Project Construction

	Maximum Daily Emissions (lbs/day)			
	ROG	NO_X	PM_{10} (exhaust/fugitive)	$PM_{2.5}$ (exhaust/fugitive)
Construction-Related Emissions				
2021	5.87	65.46	8.36	5.26
2022	44.64	8.96	0.61	0.43
SMAQMD threshold of significance[a]	NA	85	80	82
Exceeds threshold?	No	No	No	No

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter less than or equal to 10 microns in diameter; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; lbs/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District.

[a] Represents SMAQMD threshold of significance with compliance with SMAQMD Fugitive Dust Rule 403 using dust suppression activities and soil stabilization.

Source: Modeled by Ascent Environmental in 2020. See Appendix A for details.

Operation of the well, including energy use to pump and treat the water and vehicular trips to and from the site for maintenance, were also modeled. As shown in Table 3.3-3, project operations would not generate emissions in excess of the SMAQMD thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$. For assumptions and modeling inputs, refer to Appendix A. In addition, soil stabilization and dust suppression activities would be implemented as a part of the project construction in compliance with SMAQMD's Fugitive Dust Rule 403.

Table 3.3-3 Maximum Daily Emissions of Criteria Pollutants and Precursors Associated with Operation of the Project

Source	ROG (lbs/day)	NO_X (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Mobile	0.05	0.27	0.18	<0.1
Energy	0.04	0.44	<0.1	<0.1
Area	1.14	<0.1	<0.1	<0.1
Total	**1.25**	**0.72**	**0.21**	**0.08**
SMAQMD Significance Criteria	65	65	80[a]	82[a]
Exceeds Thresholds?	No	No	No	No

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter lbs/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District

[a] Represents SMAQMD threshold of significance with compliance with SMAQMD Fugitive Dust Rule 403 using dust suppression activities and soil stabilization.

Source: Modeling conducted by Ascent Environmental in April 2021 using CalEEMod v. 2016.3.2

Project-related construction and operational emissions of NO_X, ROG, PM_{10}, and $PM_{2.5}$ would not exceed SMAQMD thresholds and fugitive dust control in compliance with SMAQMD Rule 403 would be implemented during construction. Therefore, this impact would be less than significant, and no mitigation is required.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant. Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children and the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and the potential for these individuals to experience increased and prolonged exposure to pollutants. The nearest sensitive receptors are residential uses to the north and west of the project site, the closest residence being approximately 150 feet from the nearest project site boundary.

During construction, particulate matter from diesel construction equipment exhaust is the primary TAC of concern. (See Appendix B for data pertaining to project-related diesel and gasoline consumption.) As shown above in Table 3.3-2, construction-related activities would result in maximum emissions of 8.36 lbs/day of PM_{10} and 5.26 lbs/day of $PM_{2.5}$, which would not exceed the SMAQMD thresholds. Furthermore, construction would be temporary and intermittent over a limited period of approximately 1.5 year, a duration substantially shorter than the exposure period used for typical health risk calculations (i.e., 30 years). As shown in Table 3.3-3, operation of Well 80 would not generate emissions in excess of the SMAQMD thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$, which are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health. Therefore, the project would not expose sensitive receptors to health risks caused by substantial or prolonged TAC concentrations. This impact would be less than significant, and no mitigation is required.

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

Less than Significant. Odors are generally regarded as an annoyance rather than a health hazard. Odor sources typically include industrial land uses, such as fiberglass manufacturing, coating operations, foundries, refineries, sewage treatment plants, landfills, and recycling facilities. The Well 80 project would not include long-term odor sources; nor would the project include residences or occupants on the project site that could be subject to odors. During construction, odorous exhaust would be emitted from diesel-fueled heavy equipment and during the application of fresh asphalt. These emissions would be temporary and intermittent and would dissipate rapidly from the source with increases in distance. Therefore, the project would not result in the exposure of a substantial number of people to objectionable odors. This impact would be less than significant, and no mitigation is required.

3.4 BIOLOGICAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IV. Biological Resources.				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. 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?	☐	☐	☐	☒

3.4.1 Environmental Setting

Land cover types were mapped during a biological reconnaissance survey conducted on December 16, 2020. The project site is currently vacant and located adjacent to developed/disturbed areas, and the site is characterized by relatively flat, upland terrain covered by annual grassland and a stand of valley oak woodland. Surrounding land uses include residential, commercial, and light industrial uses.

Annual grassland on the project site includes a variety of nonnative annual species, including wild oat (*Avena fatua*), foxtail barley (*Hordeum murinum*), Italian ryegrass (*Festuca perennis*), yellow star-thistle (*Centaurea solstitialis*), hairy vetch (*Vicia villosa*), bedstraw (*Galium* sp.), red stork's bill (*Erodium cicutarium*), common mallow (*Malva neglecta*), and prickly lettuce (*Lactuca serriola*).

Valley oak woodland is composed of valley oak (*Quercus lobata*), holly oak (*Quercus ilex*), velvet ash (*Fraxinus velutina*), almond (*Prunus* sp.), Mexican fan palm (*Washingtonia robusta*), Canary Island date palm (*Phoenix canariensis*), and tree of heaven (*Ailanthus altissima*). The understory of the wooded area consists of the same nonnative annual species as in the annual grassland area with the addition of California grape (*Vitis californica*) and Himalayan blackberry (*Rubus armeniacus*).

There are two drainage ditches within the wooded area. One ditch drains the project site and adjacent lot to the north and the other ditch drains surface water from the surrounding neighborhood. These two drainage ditches converge and leave the site through an underground culvert, daylighting on the south side of Madison Avenue into Kohler Creek (also known as Date Creek), a tributary to Arcade Creek (Sacramento County 1993).

SPECIAL-STATUS WILDLIFE AND PLANTS

Query results of the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation System (IPaC), California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), and California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California indicate that 11 special-status plant species, and 15 special-status wildlife species have been recorded within the U.S. Geological Survey (USGS) topographic quadrangle containing the project site and the eight surrounding quadrangles, although no occurrences of these species have been recorded on the site (see Appendix C for special status species record search). Fourteen wildlife and all plant species were removed from additional consideration due to lack of habitat or soils suitable for the species, or because the project site is outside the current known range of the species. White-tailed kite is the only special-status species with the potential to occur on the site (Table 3-4).

Table 3-4 Special-status Species that May Occur in the Project Site

Name	Federal Status[1]	State Status[1]	California Rare Plant Rank[1]	Habitat	Potential to Occur in the Survey Area
BIRDS					
White-tailed kite *Elanus leucurus*	None	FP	N/A	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**May occur:** The trees within the project site provide suitable nesting habitat, however, the non-native annual grassland provides low quality foraging habitat. Nearest known observation is within Del Paso Regional Park.

Notes:

[1] Status definitions:

State:

FP Fully Protected (legally protected under California Fish and Game Code)

The trees within the project site provide suitable nesting habitat for white-tailed kite (*Elanus leucurus*), although the annual grassland habitat present provides low-quality foraging habitat. The presence of homeless camps likely preclude nesting by this species.

COMMON WILDLIFE SPECIES

There are many wildlife species that use urban areas for foraging, roosting, and/or nesting. These species include native animals that have adapted well to living close to humans, such as red-tailed hawk (*Buteo jamaicensis*), mourning dove (*Zenaida macroura*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), Pacific treefrog (*Pseudacris regilla*), western fence lizard (*Sceleroporus occidentalis*), as well as nonnative species, such as house

sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*). Common native and nonnative wildlife species could use the project site for breeding, and some are likely to move through the site on a regular basis for foraging and shelter through the culverts and ditch.

POTENTIAL WATERS OF THE UNITED STATES AND STATE

Review of historic aerial photography and topographic maps indicate that the project site has been disturbed by historical agricultural practices and later on by urban development. Aerial photography from 1947 shows that the existing drainage ditch was formed through realignment of a natural stream channel. Remnants of the natural stream channel are still present to the north of the project site and seasonal wetland vegetation was observed in portions of the ditch within the project site.

The State Water Board recently updated its wetland definition and procedures for the discharge of dredged or fill material to waters of the state. The state wetland definition and procedures went into effect on May 28, 2020. The current State definition of a wetland is:

> *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*

Because the drainage ditch was created through realignment of a natural stream channel and connects to other waters of the United States (Arcade Creek), for purposes of this IS/MND, it is considered a water of the United State and a water of the state. A formal jurisdictional delineation and verification from the US Army Corps of Engineers would be necessary to confirm this assumption.

3.4.2 Discussion

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 Wildlife or the U.S. Fish and Wildlife Service?

Less than significant with mitigation incorporated. A search of USFWS IPaC, CNDDB, and CNPS online databases, and evaluation of suitable habitat and soils on the project site revealed that white-tailed kite has the potential to occur within the project site. White-tailed kites are not known to nest on the project site; however, the species has the potential to occur on the project site because suitable nesting and low-quality foraging habitat is present. Project construction could remove or disturb active nests of white-tailed kite or protected raptors potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of chicks and eggs of white-tailed kite could reduce population levels and contribute to a trend toward these species becoming threatened or endangered in the future, which would be a potentially significant impact.

Mitigation Measure 3.4-1: Conduct Focused Surveys for Special-Status Birds and Other Native Nesting Birds and Implement Protective Buffers

SSWD shall implement the following measures to avoid the removal of active raptor nests, including white-tailed kite.

1. Trees slated for removal shall be removed during the period of September through January, to avoid the nesting season.
2. If trees are to be removed, or if construction activity (which includes clearing, grubbing, or grading) is to commence within 500 feet of nesting habitat during the nesting season, which is February through August, a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days before construction or tree removal. Trees shall only be removed if no active nests are found.

3. If active nest(s) are found in the survey area, an appropriate non-disturbance buffer shall be established by a qualified biologist and maintained around the nest to prevent nest failure. CDFW guidelines recommend implementation of a buffer of 500 feet for raptors unless there is a species-specific buffer, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to adversely affect the nest. All construction activities shall be avoided within this buffer area until a qualified biologist determines that nestlings have fledged, or until September 1. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.

Implementation of Mitigation Measure 3.4-1 would reduce potentially significant impacts on raptors and special-status bird nests to less than significant because these measures require that active nests in the construction area or vicinity be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young.

b, e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service? Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Less than significant with mitigation incorporated. Based on a certified arborist survey of the project site, there are 38 trees on the project site, 30 of which are valley oak trees (*Quercus lobata*) (Hort Science Bartlett Consulting 2021). As such, the trees on the project site are considered valley oak woodland, a sensitive natural community, because the species and number of oak trees on the site meet the CNPS definition of "Valley Oak *Quercus lobata* Forest & Woodland Alliance," which has a California Rarity Rank of S3 (statewide occurrences between 21-100 and/or 2,590-12,950 hectares) (CNPS 2021). Based review of the preliminary site plan and the arborist survey of onsite trees, implementation of the project would potentially require removal of 16 individual valley oak trees, three of which are considered of low suitability for preservation, nine with moderate suitability for preservation, and four that are considered to have high suitability for preservation. The loss of valley oak trees would diminish valley oak woodland, a sensitive natural community.

The Sacramento County Tree Ordinance (Chapter 19.04 and 19.12 of the County Code) provides protections for landmark trees and heritage trees. The County Code defines a landmark tree as an "especially prominent or stately tree on any land in Sacramento County, including privately owned land" and a heritage tree as "native oak trees that are at or over 19-inch diameter at breast height (dbh)." Chapter 19.12 of the County Code, titled Tree Preservation and Protection, defines native oak trees as valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii)*, or oracle oak (*Quercus morehus*) and states that "it shall be the policy of the County to preserve all trees possible through its development review process." To be considered a tree, as opposed to a seedling or sapling, the tree must have a dbh of at least 6 inches or, if it has multiple trunks of less than 6 inches each, a combined dbh of 10 inches. Based on the arborist survey of onsite trees and review of the preliminary site plan, no protected Heritage Trees would be removed due to the project (Hort Science Bartlett Consulting 2021). However, there is one tree that is considered a protected Heritage Tree, which is located just south of the project site, but may require pruning; this would require a permit.

Project construction would result in removal of valley oak trees, which qualify as a sensitive natural community and based on size and condition, may be protected trees under the County Tree Ordinance or General Plan Policies. This is considered a potentially significant impact.

Mitigation Measure 3.4-2: Identify Oak Trees and Protect in Place or Compensate for Removal

SSWD shall implement the following measures to avoid, minimize, and compensate for impacts to valley oak (*Quercus lobata*) trees due to the Well 80 project.

1. The location of all trees to be retained shall be shown on all site plans (e.g., site grading, drainage, and utility plans).
2. A tree survey shall be conducted by a qualified arborist prior to removal of any trees within the project site. In accordance with the California Oak Woodlands Conservation Act (California PRC Section 21083.4), the arborist survey shall identify all oak trees of five inches or more in diameter at dbh. The arborist survey shall also identify all native and nonnative trees on site measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.
3. Prior to pruning or removal of any Heritage Trees protected by the Sacramento County Tree Preservation Ordinance, SSWD shall obtain a permit from the County. Pruning shall be done by a certified arborist or certified tree worker in accordance with the best management practices for pruning.
4. Prior to ground disturbing activities, SSWD shall place a 4-foot-tall exclusion fence (i.e., brightly colored orange snow fence) at least 2 feet outside the drip line of the valley oak trees to be retained that are located adjacent to any grading, underground utility, or other developmental activity.
5. For those oak trees that cannot be avoided, SSWD shall either: (a) replace the valley oak trees in-kind in accordance with the established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed, or (b) contribute funding to the Sacramento Tree Foundation's Greenprint program in an amount proportional to the valley oak tree canopy lost due to the project. The tree canopy loss shall be determined by a certified arborist.

Implementation of Mitigation Measure 3.4-2 would reduce potentially significant impacts on sensitive valley oak woodland habitat as well as protected valley oak trees under the County Tree Ordinance to less than significant because these measures require avoidance and minimization of valley oak tree removal, replacement of protected valley oak trees where feasible, and funding to the Sacramento Tree Foundation's Greenprint program for the valley oak woodland canopy lost due to the project.

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?

Less-than-significant impact. As described above, the drainage ditch at the eastern end of the project site was created through realignment of a natural stream channel and connects to other waters of the United States (Arcade Creek); therefore, it is considered a water of the United States and a water of the state. However, the project would not have a direct impact on the ditch, as the disturbance boundary is approximately 150 feet to the west of the ditch. No discharge of fill or dredged material would occur. The discharge of water from well testing would require the implementation of erosion control best management practices (BMPs) and would comply with the NPDES Permit (No. CAG140001) covering Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters. The project would have a less-than-significant impact on state or federally protected wetlands and no mitigation is required.

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?

Less-than-significant impact. Wildlife movement corridors are important habitats that allow wildlife to travel, migrate, or disperse between significant habitats. Wildlife movement corridors have been recognized by federal agencies such as the USFWS and the State as important habitats worthy of conservation. In general, movement corridors are comprised of areas of undisturbed land cover that connects larger, contiguous habitats. The project site is located

within the Sacramento urban area. Although some wildlife species adapted to urban environments, such as raccoon and Virginia opossum may use the drainage ditch to move around, the project site drainage does not connect two undisturbed large contiguous habitats. Therefore, the drainage ditch would not be considered a migratory wildlife corridor. As a result, the project would have a less-than-significant impact on species movements and the potential impact to native resident or migratory wildlife species is considered less than significant. No mitigation is required.

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?

No impact. The project site is not within the South Sacramento HCP plan area. The project does not conflict with the provisions of the Habitat Conservation Plan.

3.5 CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
V. Cultural Resources.				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c) Substantially disturb human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

3.5.1 Environmental Setting

A cultural resources literature search was conducted in December 2020 by the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) at California State University, Sacramento. The records search was conducted to determine if prehistoric or historic cultural resources had been previously recorded within the project site, the extent to which the project site had been previously surveyed, and the number and type of cultural resources within a 0.25-mile radius of the project area.

The NCIC records search indicated that no prior cultural resource studies have been completed within the project area, however six studies have been completed within the 0.25-mile record search radius. The records search also revealed that while no cultural resources of any kind have been previously recorded within the project area, a historical welded steel water tower (P-34-004516) is located within the 0.25-mile record search radius.

An intensive pedestrian survey of the project area was conducted on December 16, 2020. During the survey, all visible ground surfaces were carefully examined for cultural material (e.g., flaked stone tools, tool-making debris, stone milling tools, or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), and historic-era debris (e.g., metal, glass, ceramics). Ground disturbances (e.g., animal burrows, dirt roads) were also visually inspected. No cultural resources were identified within the project area during the field survey. Further, no indication of subsurface archaeological remains was found in rodent burrows or other noted areas of minor ground-disturbance (NIC 2021).

3.5.2 Discussion

a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

No impact. Historical resources include standing buildings (e.g., houses, barns, outbuildings, cabins) and intact structures (e.g., dams, bridges). "Historical resource" is a term with a defined statutory meaning (PRC Section 21084.1; determining significant impacts to historical and archaeological resources is described in the State CEQA Guidelines, Sections 15064.5[a] and [b]). No historic structures were identified within the project site during records search review or surveys of the project site (NIC 2021). The historical welded steel water tower (P-34-004516) identified through the records search is located outside of the project site and would not be affected by project construction or operation.

Thus, the project would not damage or otherwise change the significance of historical resources. No impact would occur and no mitigation is required.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Less than significant with mitigation incorporated. The cultural resources study prepared for the project determined that no prehistoric or historic-period archeological resources were found within the project area or in the immediate vicinity. The report also determined that based on the results of NCIC, as well as the negative findings of the field survey, the sensitivity of the project site for buried prehistoric or historic-era archaeological resources is considered low (NIC 2021). Nevertheless, the possibility remains that archaeological materials could be encountered during construction-related ground disturbing activities. This impact would be potentially significant.

Mitigation Measure 3.5-1: Protection of Known and Unknown Archaeological Resources

The following shall be implemented during any ground-disturbing activities associated with project construction:

- In the event that unknown buried cultural deposits (e.g., prehistoric stone tools, milling stones, historic glass bottles, foundations, cellars, privy pits) are encountered during project construction, all ground-disturbing activity within 30 feet of the resources shall be halted and a qualified professional archaeologist (36 Code of Federal Regulations [CFR] 61) and appropriate Native American tribal representative shall be notified immediately and retained to assess the significance of the find. Construction activities could continue in other areas.
- If the find is determined to be significant by the qualified archaeologist or Native American tribe (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.
- If the qualified archaeologist determines the archaeological material to be Native American in nature, the SSWD shall contact the culturally affiliated Native American tribe for their input on the preferred treatment of the find.

Implementation of Mitigation Measure 3.5-1 would reduce impacts to a less-than-significant level by requiring cessation of work, implementation of proper data recovery, and/or preservation procedures upon discovery of previously unknown resources.

c) Substantially disturb human remains, including those interred outside of formal cemeteries?

Less-than-Significant Impact. Based on documentary research, no evidence suggests that any prehistoric or historic-era marked or un-marked human interments are present within or in the immediate vicinity of the project site. However, the location of grave sites and Native American remains can occur outside of identified cemeteries or burial sites. Therefore, there is a possibility that unmarked, previously unknown Native American or other graves could be present within the project site and could be uncovered by project-related construction activities.

California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Sections 7050.5 and PRC Section 5097.

These statutes require that, if human remains are discovered during any construction activities, potentially damaging ground-disturbing activities in the area of the remains shall be halted immediately, and the Sacramento County coroner and Native American Heritage Commission (NAHC) shall be notified immediately, in accordance with to PRC Section 5097.98 and Section 7050.5 of California's Health and Safety Code. If the remains are determined by NAHC to

be Native American, the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. Following the coroner's findings, the archaeologist, the NAHC-designated Most Likely Descendant, and the landowner shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.94.

Compliance with California Health and Safety Code Sections 7050.5 and PRC Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. Therefore, this impact would be less than significant, and no mitigation is required.

3.6 ENERGY

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

3.6.1 Environmental Setting

The following sources of energy are utilized in Sacramento County, and may be utilized by the Well 80 project.

- Electricity and renewables: In 2002, Senate Bill 1078 established a renewables portfolio standard (RPS) program. The program is jointly implemented by the California Public Utilities Commission and the California Energy Commission and requires all load-serving entities to procure 60 percent of their total electricity retail sales from renewable energy sources by 2030. Most retail sellers met or exceeded their 29-percent interim RPS target in 2018, including all large investor-owned utilities, which provide electricity to 72 percent of all utility customers (CPUC 2019, EIA 2019).
- Natural gas: While the majority of natural gas consumers in California are residential and small commercial users, these users consume only about 35 percent of natural gas in the state. Larger volume gas consumers, such as utilities for electricity generation and industrial consumers, although fewer in number, consume the remaining 65 percent of natural gas used in the state (CPUC 2020).
- Petroleum: Petroleum products (gasoline, diesel, jet fuel) are consumed almost exclusively by the transportation sector, which is responsible for almost 90 percent of the petroleum consumed in the state (EIA 2020). In 2015, a total of 15.1 billion gallons of gasoline were sold in California (CEC 2020). To meet CARB regulations, all gasoline and diesel fuel sold in California for motor vehicles is refined to be a specific blend of motor gasoline called California Reformulated Gasoline (EIA 2020).
- Alternative fuels: Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many alternative transportation fuels (e.g., biodiesel, hydrogen, electricity). Use of alternative fuels is encouraged through various statewide regulations and plans (e.g., Low Carbon Fuel Standard, Assembly Bill 32 Scoping Plan).

3.6.2 Discussion

a) 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. Energy would be consumed during project construction to operate and maintain construction equipment and transport construction materials. It also would be consumed for worker commutes. Levels of construction-related fuel consumption were calculated using equipment assumptions consistent with CalEEMod Version 2016.3.2 and fuel consumption factors (EMFAC 2017, see Appendix B). See Appendix A for detailed

calculations. An estimated 16,459 gallons of gasoline and 1,630 gallons of diesel would be consumed during project construction, accounting for both on-site equipment use and off-site vehicle travel for worker commutes and haul trips. This one-time energy expenditure required to construct the project would be nonrecoverable. However, energy needs for project construction would be temporary and would not require additional capacity or increase peak or base period demands for electricity or other forms of energy. Table 3.6-1 summarizes the construction diesel and gasoline consumption. For assumptions and modeling inputs, refer to Appendix B.

Table 3.6-1 Construction Energy Consumption

Year	Diesel (Gallons)	Gasoline (Gallons)
2022	15,121	1,464
2023	1,338	166
Total	**16,459**	**1,630**

Notes: Gasoline gallons include on-road gallons from worker trips. Diesel gallons include off-road equipment and on-road gallons from worker and vendor trips.
Source: Calculations by Ascent Environmental in 2021. See Appendix B for more calculations and assumptions.

The operational phase of the project is expected to consume 16,459 gallons of gasoline and 1,630 gallons of diesel per year. As with construction, operational energy consumption was calculated using equipment assumptions consistent with CalEEMod Version 2016.3.2 and fuel consumption factors (EMFAC 2017, see Appendix B).

As shown in Table 3.6-2, the total estimated electricity and natural gas consumption for the first year of operation was 2,354 MWh/year and 3,502 MMBtu/year, respectively. Table 3.6-2 summarizes the operational energy consumption for the first year of operation, which is estimated to be 2023.

Table 3.6-2 Operational Energy Consumption in 2023

Land Use/Energy Type	Energy Consumption	Units
Congregate Care		
Electricity – Facility	719	MWh/year
Electricity - Emergency Generator	540	MWh/year
Electricity – pump	1,095	MWh/year
Total Electricity Consumption	**2,354**	**MWh/year**
Natural Gas – Facility	1,660	MMBtu/year
Natural Gas – pump	1,842	MMBtu/year
Total Natural Gas Consumption	**3,502**	**MMBtu/year**

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.
Source: Calculations by Ascent Environmental in 2021. See Appendix B for more calculations and assumptions.

The fuel consumption in the operational phase was calculated using CalEEMod defaults and information provided by SSWD. Table 3.6-3 summarizes the gasoline and diesel consumption anticipated in the first year of operation, which is estimated to be 2023.

Table 3.6-3 Gasoline and Diesel Consumption in 2023

Vehicle Category	Gasoline (gal/year)	Diesel (gal/year)
Passenger	6	984
Truck	820	1,025
Bus	12	9
Other	1	8
Total	**840**	**2,026**

Notes: gal/year = gallons per year.
Source: Calculations by Ascent Environmental in 2021. See Appendix B for more calculations and assumptions.

Well 80 would replace other aging well facilities that SSWD needs to take out of service; therefore, there would be no long-term increase in well operations or vehicular trips for well maintenance. The project would not result in a long-term increase in population, economic activity, or other increases in energy demand in the region. Therefore, the project would not result in an inefficient, wasteful, or unnecessary consumption of energy resources. This impact would be less than significant, and no mitigation is required.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

Less-than-Significant Impact. As discussed in a), above, the project would not result in the inefficient, wasteful, or unnecessary consumption of energy resources. Furthermore, all new equipment used for project operation would be required to meet the latest California code requirements and structures built would comply with the most recent building permit requirements. Thus, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. This impact would be less than significant, and no mitigation is required.

3.7 GEOLOGY AND SOILS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VII. Geology and Soils.				
Would the project:				
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 California Geological Survey 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, as updated), creating substantial direct or indirect 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?	☐	☐	☒	☐

3.7.1 Environmental Setting

Geographic Setting

The project site is located in Sacramento County, California, within the northern portion of the Sacramento Valley. The Sacramento Valley represents the northern portion of the Great Valley geomorphic province of California, which is bordered on the east by the foothills of the Sierra Nevada geomorphic province and on the west by the Coast. The Great Valley is an alluvial plain about 50 miles wide and 400 miles long in the central part of California. Its northern part is the Sacramento Valley, drained by the Sacramento River and its southern part is the San Joaquin Valley

drained by the San Joaquin River. The Great Valley is a trough in which sediments have been deposited almost continuously since the Jurassic (about 160 million years ago) (CDC 2002).

Earthquake Potential

According to the California Department of Conservation Data Viewer, there are no Alquist-Priolo Earthquake Fault Zone within the project site or Sacramento County (CDC 2021). Additionally, Sacramento County has a low earthquake shaking potential (CDC 2016)

Soils

Soil characteristics within the project site are well drained, however, have a low water capacity (USDA 2020).

Paleontological Resources

A search of the paleontological records maintained by the University of California Museum of Paleontology (UCMP) was conducted on December 14, 2020. The UCMP database indicates 13 fossil localities have been recorded in Sacramento County. Of these, six localities include invertebrate fossils. Six other localities contain vertebrate fossils, 126 individual specimens in sum, all of Pleistocene-age (126,000 to 11,650 years ago).

Review of recent geologic mapping published by the CGS and USGS indicates that the project area is underlain entirely by Quaternary alluvium of the Turlock Lake Formation (Qtl). The Turlock Lake Formation is of Early Pleistocene age (1 million to 540,000 years ago) and has yielded paleontologically significant fossils, though significant fossils from Sacramento County are limited.

No fossils or unique geologic features have been previously recorded in the vicinity of the project. Additionally, no paleontological resources of any kind were identified within the project area during the field survey undertaken as part of this assessment (NIC 2021).

3.7.2 Discussion

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 California Geological Survey Special Publication 42.)

No Impact. Surface ground rupture along faults is generally limited to a linear zone a few yards wide. There are no Alquist-Priolo Earthquake Fault Zones within Sacramento County (CDC 2016). The project would not expose people or structures to adverse effects caused by the rupture of a known fault. There would be no impact associated with fault rupture, and no mitigation would be required.

ii) Strong seismic ground shaking?

Less-than-Significant Impact. Sacramento County has a low earthquake shaking potential (CDC 2016). The project would be constructed consistent with the California Building Code (CBC) Title 24, which includes standards intended to protect structures from earthquake related and seismic activity. The construction and operation of the well and other onsite facilities would not exacerbate existing seismic conditions. Impacts related to seismic hazards or ground shaking would be less than significant and no mitigation is required.

iii) Seismic-related ground failure, including liquefaction?

Less-than-Significant Impact. Soil liquefaction most commonly occurs when ground shaking from an earthquake causes a sediment layer saturated with groundwater to lose strength and take on the characteristics of a fluid, thus

becoming similar to quicksand. Liquefaction may also occur in the absence of a seismic event when unconsolidated soil above a hardpan becomes saturated with water. The project is located in an area with low earthquake potential and contains soils that are well drained but have a low water capacity (USDA 2020). However, the project would comply with CBC Title 24, which includes specific design requirements to reduce damage from ground failure. Through compliance with current building codes, the project-related impact would be less than significant, and no mitigation is required.

iv) Landslides?

No Impact. The project site is located in a developed flat area; there is no risk of landslides in such terrain. Therefore, the project would not expose people or structures to landslides and there would be no impact associated with landslide risk, and no mitigation would be required.

b) Result in substantial soil erosion or the loss of topsoil?

Less-than-Significant Impact. Soils in the project area are well drained but have a low water capacity, which could lead to possible erosion or loss of topsoil. The project would involve ground disturbing activities which could cause soil erosion and surface water contamination. As stated in Chapter 2, the project includes installation of BMPs during construction to prevent erosion, prevent pollutant spills, and protect water quality. In addition, the project would be required to comply with the current CBC, which provides specifications related to soil compaction and stability. Finally, Well 80 operation and maintenance would be required to adhere to various federal, State, and regional water quality standards. Through regulatory compliance and BMPs, the project project-related erosion impacts would be less than significant, and no mitigation is required.

c,d) 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? Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?

Less-than-Significant Impact. As previously described under criterion (a-iii), soils within the project site are well drained with low water capacity (USDA 2020). The project would be required to comply with the current CBC, which provides specifications related to soil compaction and stability. Based on existing site conditions and through conformance with the CBC, the project would not result in on- or off-site adverse geologic conditions such as landslide, lateral spreading, subsidence, liquefaction, shrink-swell potential, or collapse. Impacts would be less than significant, and no mitigation is required.

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?

No Impact. The project would not involve the use of septic tanks or alternative wastewater disposal systems. Thus, the project would have no impact related to soil suitability for use of septic tanks or alternative wastewater disposal systems, and no mitigation would be required.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less-than-Significant Impact. No paleontological or unique geologic features have been previously recorded in the vicinity of the project. Further, no paleontological resources of any kind were identified within the project area during the field survey undertaken as part of this assessment (NIC 2021). Because no known paleontological resources have been documented within or near the project area, it is unlikely that project construction activities would result in the discovery of previously unknown paleontological resources or unique geologic features. This impact would be less than significant, and no mitigation is required.

3.8 GREENHOUSE GAS EMISSIONS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
VIII. Greenhouse Gas Emissions.				
Would the project:				
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?	☐	☐	☒	☐

3.8.1 Environmental Setting

Greenhouse gases (GHGs) are gases in the earth's atmosphere that trap heat through a phenomenon called the greenhouse effect. Prominent GHGs that contribute to the greenhouse effect are carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. The greenhouse effect occurs when solar radiation enters the earth's atmosphere and infrared radiation is absorbed by GHGs rather than being reflected back into space. This trapping of infrared radiation results in the warming of the atmosphere and is responsible for maintaining a habitable climate on earth. However, GHG emissions from human activities have greatly increased GHG concentrations in the atmosphere and caused levels of warming far above natural levels, resulting in global climate change. It is "extremely likely" that more than half of the observed increase in average global temperature from 1951 to 2010 was caused by anthropogenic (i.e., human-caused) increases in GHG concentrations, along with other anthropogenic forcing (IPCC 2014:5). GHG emissions contributing to global climate change are attributable, in large part, to human activities associated with on-road and off-road transportation, industrial/manufacturing activities, electricity generation and consumption, residential and commercial on-site fuel use, and agriculture and forestry.

Climate change is a global issue because GHGs are global pollutants, and even local GHG emissions contribute to global impacts. Many GHGs have long atmospheric lifetimes, from 1 to several thousand years, and persist in the atmosphere for long enough durations to be dispersed around the globe. Although the lifetime of any particular GHG molecule is dependent on multiple variables and cannot be determined with certainty, scientists have concluded that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration, resulting in a net increase in atmospheric CO_2 (IPCC 2013:467).

SMAQMD is the primary agency responsible for addressing air quality concerns in Sacramento County and has established quantitative significance thresholds for evaluating GHG emissions. For construction emissions generated by land development projects, the SMAQMD threshold is 1,100 metric tons per year of CO_2 equivalent ($MTCO_2e$) (SMAQMD 2020).

3.8.2 Discussion

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

Less than Significant. Well 80 would replace other aging well facilities that SSWD needs to take out of service; therefore, there would be no long-term increase in well operations or vehicular trips for well maintenance. Therefore, project operation would not generate substantial GHG emissions. However, the project would generate GHGs during construction from the use of heavy-duty off-road construction equipment and vehicle use for worker commutes.

Construction would include site preparation, grading, building construction, paving and architectural coating. The project's construction related GHG emissions were estimated using CalEEMod Version 2016.3.2. A detailed discussion of the major construction activities and model assumptions is provided in Section 3.3, "Air Quality," and model outputs are included in Appendix A. Total construction activity would result in emissions of 522.45 $MTCO_2e$ over a period of 1.5 years, which would not exceed SMAQMD's established significance threshold of 1,100 $MTCO_2e$. Therefore, this impact would be less than significant, and no mitigation is required.

Table 3.8-1 Annual Construction and Operational Emissions of Greenhouse Gases for the Project (2023)

Source	$MTCO_2e$/year
Mobile	25.87
Energy	133.23
Area	<0.001
Water and Wastewater	18.76
Solid Waste	29.88
Construction	188.18
Stationary Sources – Emergency Generator	35.90
Stationary Sources – Pump	108.71
Total	522.45
SCAQMD Significance Criteria	1,100
Exceeds Threshold?	No

Notes: Values are rounded off, $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year, SCAQMD = South Coast Air Quality Management District

Source: Modeling conducted by Ascent Environmental in April 2021 using CalEEMod v. 2016.3.2 and calculations to estimate stationary sources

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

Less-than-Significant Impact. Plans, policies, and regulations adopted for the purpose of reducing GHG emissions are developed with the purpose of reducing cumulative emissions related, primarily, to long-term operational emissions. As described previously, the project would not generate substantial GHG emissions during operations, and construction related GHG emissions would be finite and would not exceed SMAQMD's threshold for construction emissions, which were established to support statewide GHG emission targets. Thus, the project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing emissions of GHGs. This impact would be less than significant, and no mitigation is required.

3.9 HAZARDS AND HAZARDOUS MATERIALS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
IX. Hazards and Hazardous Materials.				
Would the project:				
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/or 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?	☐	☐	☐	☒

3.9.1 Environmental Setting

The SWRCB GeoTracker website, which provides data relating to leaking underground storage tanks (USTs) and other types of soil and groundwater contamination, along with associated cleanup activities, does not identify any active hazards related to USTs and other types of contamination within the project site or surrounding area (SWRCB 2019). The California Department of Toxic Substances Control's Envirostor Web site, which provides data related to hazardous materials spills and clean ups, also does not identify any hazards related to any cleanup sites within the project site and surrounding area (DTSC 2020).

The nearest school, Pioneer Elementary School, is located approximately 0.7 miles north of the project site.

The Sacramento McClellan Airport is located 2.7 miles west of the project site. The airport was formerly used as an air force base and is now operated as a public airport.

The project site and surrounding area is located within the Local Responsibility Area (LRA) and is not located within a high fire hazard severity zone (CAL FIRE 2020).

3.9.2 Discussion

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

Less-than-Significant Impact. Construction activities would involve the use of hazardous materials, such as fuels, solvents, gasoline, asphalt, and oil. The transport, storage, and use of hazardous materials could potentially expose and adversely affect workers, the public, or the environment as a result of improper handling or use, accident, environmentally unsound disposal methods, fire, explosion, or other emergencies, resulting in adverse health or environmental effects.

The California Highway Patrol and Caltrans are responsible for enforcing regulations related to the transportation of hazardous materials on local roadways, and the use of these materials is regulated by the California Department of Toxic Substances Control (DTSC), as outlined in CCR Title 22. SSWD and its construction contractors would be required to comply with the California Environmental Protection Agency's (CalEPA's) Unified Program, which protects Californians from hazardous waste and hazardous materials by ensuring consistency throughout the state regarding the implementation of administrative requirements, permits, inspections, and enforcement at the local regulatory level. Regulated activities would be managed by the Sacramento County Environmental Management Department, which is the CalEPA-designated Certified Unified Program Agency, and in accordance with the regulations included in the Unified Program (e.g., hazardous materials release response plans and inventories, California Uniform Fire Code hazardous material management plans and inventories). Such compliance would reduce the potential for accidental release of hazardous materials during project construction.

SSWD is required to comply with existing laws and regulations regarding the transportation, storage, use, and disposal of hazardous materials in relation to the new well. These regulations are specifically designed to protect the public health and the environment and must be adhered to during project construction and operation. Compliance with applicable regulations result in a less-than-significant impact and no mitigation is required.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Less-than-Significant Impact. As discussed above, there are no existing hazardous materials sites within the project site. However, project construction and operation would involve the transport, storage, use, and disposal of hazardous materials. SSWD is required to comply with existing laws and regulations regarding the transportation, use, and disposal of hazardous materials in relation to construction and operation of the new groundwater well. These regulations are specifically designed to protect the public health and the environment and must be adhered to during project construction and operation. Compliance with applicable regulations would ensure that this impact would be less than significant, and no mitigation is required.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. As discussed above, the nearest school is located 0.7 miles north of the project area. No schools are proposed in the project area. Therefore, the project would not result in the release of hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. No impact would occur, and no mitigation is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Government Code Section 65962.5 requires that DTSC compile and maintain a list of hazardous waste facilities subject to corrective action, land designated as hazardous waste property, or hazardous waste disposals on public land. This list is known as the Cortese List, which can be accessed on Cal EPA's website. The project site and surrounding area are not located on a site included on a list of hazardous materials sites (SWRCB 2019; DTSC 2020). There would be no impact, and no mitigation is required.

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 area is not located within an airport land use plan, within 2 miles of a public airport, or in the vicinity of a known private airstrip. Sacramento McClellan Airport is located 2.7 miles west of the project area. Project construction and operation would not result in any safety hazards or excessive noise within the vicinity of the airport. No impact would occur, and no mitigation is required.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The project would include construction and operation of a new groundwater well and appurtenant facilities within the within the 1.1-acre project site. The site development and access from Walnut Avenue would not impede vehicular travel on local roadways. During construction, which would include utility connections within the local roadways, temporary traffic controls would be implemented and emergency access would be maintained at all times. Therefore, the project would not interfere with emergency response or evacuation plans. No impact would occur, and no mitigation is required.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

No Impact. The project is located in an urbanized area of Sacramento County that is not adjacent to wildlands; therefore, implementation of the project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas. There would be no impact related to wildland fires, and no mitigation would be required.

3.10 HYDROLOGY AND WATER QUALITY

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
X. Hydrology and Water Quality.				
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that 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 on- or offsite erosion or siltation;	☐	☐	☒	☐
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?	☐	☐	☒	☐

3.10.1 Environmental Setting

SURFACE WATER

The project site is within the Sacramento River Basin. Within the Sacramento River Basin there are sub-basins or smaller watersheds that drain to the tributaries of the Sacramento River. The project site is withing the American River watershed, which is a sub-basin of the Sacramento River watershed. The American River originates in the Tahoe and Eldorado National Forests and flows into the Folsom Lake reservoir, which holds approximately 1 million acre-feet of water (Sacramento County 2010).

GROUNDWATER

The project site is also located within Sacramento Valley-North American groundwater basin (DWR 2021). The Sacramento Valley-North American groundwater subbasin lies in the eastern central part of the Sacramento Valley groundwater basin. The northern boundary of the subbasin is the Bear River and the Yuba/Placer County Line. The eastern boundary is the edge of the alluvial basin, where little or no groundwater flows into or out of the groundwater basin from the rock of the Sierra Nevada. The southern boundary is the American River and the western boundary is the Sacramento and Feather Rivers (DWR 2018).

FLOOD HAZARDS

The project site is located within an area mapped by the Federal Emergency Management Agency (FEMA) as Zone X, which describes areas minimal flood hazard. Areas surrounding the site are also mapped as Zone X (FEMA 2020).

3.10.2 Discussion

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Less-than-Significant Impact. As described above in Section 3.4, "Biological Resources," the drainage ditch at the eastern end of the project site was created through realignment of a natural stream channel and connects to other waters of the United States (Arcade Creek); therefore, it is considered a water of the United State and a water of the state. However, the project would not have a direct impact on the ditch, as the disturbance boundary is approximately 150 feet to the west of the ditch. No discharge of fill or dredged material would occur. The discharge of water from well testing would require the implementation of erosion control BMPs and would comply with the NPDES Permit (No. CAG140001) covering Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters.

As described in Section 3.7, "Geology and Soils," soils within the project site are well drained with low water capacity (USDA 2020). It is possible that ground-disturbing activities associated with construction of the well and other onsite structures and amenities could result in soil erosion which could contaminate nearby surface water, including the drainage ditch along the eastern portion of the project site. Installation of BMPs would substantially reduce the amount of soil disturbance, erosion and sediment transport into surface waters, and pollutants in site runoff during construction.

As described in Chapter 2, "Project Description," SSWD holds a water system permit administered by the California Division of Drinking Water that allows them to operate their water supply and distribution system. Under the terms of the permit, ""…potable water discharges as qualified under this permit have been determined to pose no significant threat to water quality…" Test water discharge to the onsite drainage would involve hoses or pipes equipped with appropriate energy dissipation devices to limit erosion. Furthermore, onsite structures would be required to comply with the current CBC, which provides specifications related to soil compaction and stability.

Through implementation of construction-period BMPs, regulatory compliance for well operations, and construction of structures compliant with the CBC, the project would project would not violate any water quality standards or waste discharge requirements. This impact would be less than significant, and no mitigation is required.

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

Less-than-Significant Impact. As described in Chapter 2, "Project Description," operation of Well 80 would be capable of providing approximately 1,500 gpm (2.16 million gallons/day) of groundwater for municipal purposes on a sustained basis. Well 80 is intended to serve as a replacement for supplies and source capacity that have been lost

due to aging infrastructure and water quality impacts within SSWD's service area. Operation of Well 80 would not increase SSWD's groundwater extraction; rather, it would maintain SSWD's existing groundwater extraction levels to meet existing demand as older wells reach the end of their useful life and are taken out of service. The project is intended to improve water quality and water system reliability. In addition, the appurtenant onsite facilities are not expected to increase impervious surface such that groundwater recharge would be altered. As such, the project would not adversely impact groundwater supplies or recharge. Impacts would be less than significant, and no mitigation is required.

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 on- or offsite erosion or siltation;

Less-than-Significant Impact. As described in Section 3.7, "Geology and Soils," soils within the project site are well drained with low water capacity (USDA 2020). It is possible that ground-disturbing activities associated with construction of the well and other onsite structures and amenities could result in soil erosion which could contaminate nearby surface water, including the drainage ditch along the eastern portion of the project site. Installation of BMPs would substantially reduce the amount of soil disturbance, erosion and sediment transport into surface waters, and pollutants in site runoff during construction. Further, construction and operation of the well would be required to adhere to various federal, State, and regional water quality standards, in addition to the current CBC, which provides specifications related to soil compaction and stability. Through BMPs and regulatory compliance, the project project-related erosion impacts would be less than significant, and no mitigation is required.

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

Less-than-Significant Impact. The project site drains to the County stormwater system. During construction activities, water may be used to control dust, but would not be used in great enough quantities to result in runoff or to alter drainage patterns. Because project implementation would result in construction of new site facilities, including Well 80, a water treatment building, generator, transformer, material storage bins, and a vactor dump station, impervious surfaces at the project site would slightly increase. However, the increase in impervious surfaces would be minimal and disturbed areas of the site would be restored to pre-project conditions once construction is complete. Operation of the project would not change the site drainage pattern; runoff would continue to drain to the County stormwater system. This impact would be less than significant, and no mitigation is required.

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

Less-than-Significant Impact. As discussed above, the project site drains to the County stormwater system and the project would not contribute substantial amounts of runoff. Construction and post-construction activities would be required to adhere to various federal, State, and regional water quality standards. BMPs would be implemented for erosion and sediment controls, which would substantially reduce the amount of soil disturbance, erosion and sediment transport into surface waters, and pollutants in site runoff during construction. Operation of the project would not result in additional sources of polluted runoff and groundwater extracted by the well would be treated onsite at the treatment building. This impact would be less than significant, and no mitigation is required.

iv) Impede or redirect flood flows?

Less-than-Significant Impact. The project site is located within FEMA flood zone X, areas categorized as minimal flood hazard (FEMA 2020). The project increase in impervious surfaces would not result in on- or offsite flooding and would not otherwise impede or redirect flood flows. Operation of the project would not change the site drainage pattern; runoff would continue to drain to the County stormwater system. Impacts would be less than significant, and no mitigation is required.

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

No impact. The project is not within a coastal region that is subject to tsunami, an area with steep slopes that is subject to mudflows, or adjacent to a waterbody that would generate a seiche. No impact would occur, and no mitigation is required.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less-than-Significant Impact. As described under criterion (a), SSWD holds a water system permit administered by the California Division of Drinking Water that allows them to operate their water supply and distribution system, and the discharge of water from well testing would require the implementation of erosion control BMPs and would comply with the NPDES Permit (No. CAG140001) covering Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters. BMPs would be implemented for erosion and sediment controls, which would substantially reduce the amount of soil disturbance, erosion and sediment transport into surface waters, and pollutants in site runoff during construction. Project construction and post-construction activities would be required to adhere to various federal, State, and regional water quality standards, which would substantially reduce the amount of soil disturbance, erosion and sediment transport into receiving waters, and pollutants in site runoff during construction. Further, as described under criterion (b), operation of Well 80 would not increase SSWD's groundwater extraction; rather, would maintain SSWD's groundwater extraction to meet existing demand as older wells reach the end of their useful life and are taken out of service. The project is intended to improve water quality and water system reliability. In addition, the appurtenant onsite facilities are not expected to increase impervious surface such that groundwater recharge would be altered. This impact would be less than significant, and no mitigation is required.

3.11 LAND USE AND PLANNING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XI. Land Use and Planning.				
Would the project:				
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?	☐	☐	☐	☒

3.11.1 Environmental Setting

The project site is located in unincorporated Sacramento County. The project site is identified as Commercial/Offices and Low Density Residential with a Mixed-Use Corridor overlay under the Sacramento County General Plan. Surrounding uses include low density residential, commercial and office, and medium density residential uses (Sacramento County 2020).

As previously described, the project site is zoned as Light Commercial (LC)/Multiple Family Residential (RD-20). Surrounding uses are zoned as Multiple Family Residential (RD-20 and RD-30), as well as General and Light Commercial (GC, LC).

3.11.2 Discussion

a) Physically divide an established community?

No Impact. The construction and operation of a new groundwater well and appurtenant facilities on a 1.1-acre site that is surrounded by development would not physically divide an established community. Rather, the facilities would support water supply for the community and the development would be consistent with the urban surroundings. There would be no impact, and no mitigation is required.

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?

No Impact. The project would not result in any land use changes, and would not conflict with any adopted plans, policies, or regulations adopted for avoiding or mitigating an environmental effect. Therefore, no impact would occur, and no mitigation would be required.

3.12 MINERAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XII. Mineral Resources.				
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.12.1 Environmental Setting

The Surface Mining and Reclamation Act directs the State Geologist to classify (identify and map) the non-fuel mineral resources of the State to show where economically significant mineral deposits occur and where they are likely to occur based upon the best available scientific data. Areas known as Mineral Resource Zones (MRZs) are classified on the basis of geologic factors, without regard to existing land use and land ownership. The areas are categorized into four general classifications (MRZ-1 through MRZ-4). Of the four, the MRZ-2 classification is recognized in land use planning because the likelihood for occurrence of significant mineral deposits is high, and the classification may be a factor in the discovery and development of mineral deposits that would tend to be economically beneficial to society.

The project site is classified as MRZ-1 which means adequate information indicates no significant mineral deposits in that area (CDC 1999).

3.12.2 Discussion

a,b) 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; or 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 site is classified as MRZ-1. No known mineral deposits are present within the project site or immediate project area. Project implementation would not result in a loss of availability of known or locally important mineral resources. Therefore, there would be no impact, and no mitigation would be required.

3.13 NOISE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIII.Noise.				
Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?	☐	☒	☐	☐
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?	☐	☐	☐	☒

3.13.1 Environmental Setting

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. Sound is the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound. As sound travels through the atmosphere from the source to the receiver, noise levels attenuate (i.e., decrease) depending on a variety of factors, including geometric spreading (i.e., spherical or cylindrical spreading), ground absorption (i.e., hard versus soft sites), atmospheric conditions (e.g., wind direction and speed, air temperature, humidity, turbulence), and shielding by natural or human-made features.

The amplitude of pressure waves generated by a sound source determines the loudness of that source, also called the sound pressure level (SPL). SPL is most commonly described by using decibels (dB) because this logarithmic unit best corresponds to the way the human ear interprets sound pressures. However, the decibel scale does not adequately characterize how humans perceive noise because the human ear is not equally sensitive to loudness at all frequencies (i.e., pitch) in the audible spectrum. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an "A-weighted" sound level (expressed in units of A-weighted decibels or dBA) can be computed based on this information. All sound levels discussed in this section are expressed in A-weighted decibels.

Because decibels are logarithmic units, SPLs expressed in dB cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013a:2-10).

Various noise descriptors have been developed to describe time-varying noise levels. The noise descriptors used in this chapter include:

- Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013a:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period.
- Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013a:2-48; FTA 2018:207–208).

GROUND VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Groundborne vibration is vibration of and through the ground. Sources of ground-borne vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions).

Groundborne vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocities are normally described in inches per second (in/sec) but can also be expressed in decibel notation (VdB), which is used mainly in evaluating human response to vibration.

EXISTING NOISE SOURCES

The project site is undeveloped and is located in an area consisting primarily of residential and commercial land uses. Residential land uses are not typically associated with substantial noise levels. Noise sources associated with commercial land uses include parking lot and loading dock/delivery activity. However, the predominant noise source in the project vicinity is vehicle traffic along local roadways, including Walnut Avenue, Kohler Avenue, and Auburn Boulevard.

NOISE- AND VIBRATION-SENSITIVE RECEPTORS

Noise-sensitive land uses (i.e., sensitive receptors) 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, and because of the potential for nighttime noise to result in sleep disruption. Vibration-sensitive land uses are generally considered to be buildings or structures that could be damaged due to vibration or land uses where vibration levels could interfere with operations or cause human annoyance.

The nearest sensitive receptors to the project site are multi-family residences located approximately 75 feet west of the project site boundary across Walnut Avenue. The nearest single-family residence is located approximately 100 feet north of the project site boundary. All residential receptors would also be considered vibration-sensitive land uses because of the potential to cause structural damage to homes and/or annoyance to residents.

LOCAL NOISE REGULATIONS

The County's 2030 General Plan Noise Element (Sacramento County 2017) and Chapter 6.68 (Noise Control) in the Sacramento County Code (Sacramento County 2021) contain noise policies and standards that are used as thresholds of significance in the evaluation of project-related noise impacts. Because the County has not established local ground vibration standards, criteria recommended by the California Department of Transportation (Caltrans) and

Federal Transit Administration (FTA) are used in the evaluation of project-related vibration impacts (Caltrans 2013b). Consistent with County planning efforts, this analysis considers the following noise and vibration thresholds:

- construction-generated noise levels in excess of the County's non-transportation noise standards specified in Table 2 of the County's General Plan Noise Element during the more noise-sensitive evening, nighttime, and early-morning hours (6 a.m. to 8 p.m., Monday through Friday, and 7 a.m. to 8 p.m., Saturday and Sunday), unless the nature of the project necessitates that work in progress be continued until a specific phase is completed, per Sacramento County Code Section 6.68.090.e;
- long-term, traffic-generated noise levels in excess of incremental increase standards specified in Policy NO-9 in the County's General Plan Noise Element;
- long-term, operational noise levels generated by stationary sources that exceed the County's non-transportation noise standards at nearby residences as specified in Table 2 of the County's General Plan Noise Element;
- construction-generated vibration levels exceeding Caltrans-recommended standards with respect to the prevention of structural building damage (0.5 in/sec PPV for new residential buildings) or FTA's maximum-acceptable-vibration standard with respect to human response (80 VdB for residential uses) at nearby existing vibration-sensitive land uses; and
- 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, public use airport, or private airstrip, exposure of people residing or working in the project area to excessive noise levels.

3.13.2 Discussion

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 in other applicable local, state, or federal standards?

Less-than-significant with mitigation incorporated. Noise would be generated by the project during construction and operation, which are discussed separately, below.

TEMPORARY CONSTRUCTION NOISE

The operation of heavy equipment during project construction would generate noise, resulting in a temporary increase in noise levels at nearby sensitive receptors. Project construction is anticipated to begin in summer or fall 2021 and would be completed in 2023 or 2024. To the extent feasible, construction activities would be limited to daytime hours between 7 a.m. and 7 p.m., Monday through Friday, and between 8 a.m. and 6 p.m. on Saturday and Sunday. However, 24-hour construction work would be needed to conduct reverse rotary drilling activities for certain parts of the well installation process. All staging areas for equipment storage, personnel vehicles, and construction materials would be located within the project footprint. A 24-foot temporary sound wall would be installed surrounding well drilling activities but would not remain for later construction. It is assumed in this analysis that the temporary sound wall would offer 5 dB of noise reduction during nighttime construction.

Construction noise would fluctuate throughout the duration of project construction at individual receptors depending on the type of construction activities occurring and equipment used on any given day; the distances from construction activity to noise-sensitive receptors; any noise-attenuating features, such as topography, vegetation, and existing structures; and existing ambient noise levels. At the peak of construction, heavy equipment would include the use of a drill rig, air compressor, generator, and backhoe. Certain phases of construction would also utilize a truck tractor, welding machines, and a forklift that would operate periodically. These pieces of equipment generate noise levels that range from 73 to 85 dB at 50 feet (FHWA 2006:3). Table 3.13-1 shows the estimated levels of noise exposure at nearby receptors during various components of construction. Construction noise exposure levels at more distant receptors not listed in Table 3.13-1 would be lower because noise levels attenuate over distance.

For construction that would only occur during daytime hours, noise modeling conservatively assumed simultaneous operation of two pieces of heavy equipment in close proximity to each other at the boundary of the project site nearest to the receptor. For construction that would occur during nighttime hours, noise modeling assumed operation of an auger drill rig located at the proposed location of the well within the project site and included noise attenuation provided by the temporary sound wall. Detailed calculations are provided in Appendix D.

Table 3.13-1 Exterior and Interior Noise Levels at Nearby Receptors During Project Construction

Construction Hours	Receptor[1]	Approximate Distance from Construction Activity to Receptor (feet)[2]	Exterior Noise Level at Receptor[3]		Indoor Noise Level at Receptor[3,4]	
			L_{eq}	L_{max}	L_{eq}	L_{max}
Daytime	R1	75	77	81	53	57
Daytime	R2	100	74	78	50	54
Nighttime	R1	220	56	63	32	39
Nighttime	R2	160	60	67	36	43

Notes: dB = decibel; L_{eq} = equivalent continuous sound level; L_{max} = maximum sound level

[1] R1 refers to the multi-family residences located west of the project site across Walnut Avenue, and R2 refers to the single-family residence located directly north of the project site.

[2] Distances for daytime construction activity were measured from the nearest project site boundary to the receptor to conservatively assume that construction work could potentially occur up to the edge of the project site closest to the receptor. Distances for nighttime construction activity were measured from the proposed on-site well location to the receptor because nighttime construction would occur only for drilling associated with construction of the well.

[3] Daytime noise exposure level estimates conservatively assume simultaneous operation of two pieces of heavy equipment (a backhoe and a tractor) in close proximity to each other at the boundary of construction activity nearest to the receptor. Nighttime noise exposure level estimates assume simultaneous operation of an auger drill rig located at the proposed on-site well location. Nighttime noise exposure level estimates also include attenuation provided by the 24-foot sound wall that would be installed around construction activity and would provide 5 dB of noise reduction. Noise level estimates assume all equipment is properly maintained and fitted with operational noise control device, per manufacturer specifications. See Appendix D for detailed noise modeling and input parameters.

[4] Building walls would provide 24 dB of attenuation (EPA 1971:11).

Source: Modeled by Ascent Environmental in 2021

As shown in Table 3.13-1, construction activity would generate exterior noise levels that range from 74 to 77 dB L_{eq} and 78 to 81 dB L_{max} during daytime hours at nearby residential land uses. Although daytime construction activity would result in elevated noise levels at nearby residences, residents are less sensitive to noise during daytime hours, and construction noise during daytime hours (6 a.m. to 8 p.m., Monday through Friday, and 7 a.m. to 8 p.m., Saturday and Sunday) is exempt from the County's daytime noise standards per Sacramento County Code Section 6.68.090.e and General Plan Policy NO-8.

Construction activity occurring during nighttime hours is of increased concern due to the potential to cause sleep disturbance at nearby residences. Recognizing this, a temporary 24-foot tall barrier wall would be installed during construction of the well to provide a barrier to noise (as well as dust and lighting) during the well drilling and construction. As shown in Table 3.13-1, nighttime construction activities would generate indoor noise levels that range from 32 to 36 dB L_{eq} and 39 to 43 dB L_{max} at nearby residential land uses. Although nighttime construction could temporarily exceed the County's nighttime outdoor and indoor noise standards for non-transportation noise sources (presented in Table 2 of the General Plan Noise Element), Section 6.68.090.e of the Sacramento County Code provides an exemption for construction noise that is unavoidable due to the nature of the work:

> when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

Nighttime construction would be avoided when possible and would only occur when absolutely required during drilling associated with construction of the well. In addition, a noise barrier wall would be in place during well construction. Certain well drilling and testing activities cannot be paused once initiated and must continue into nighttime hours in order to construct the well safely and correctly. Because certain aspects of project construction would necessitate nighttime construction and no feasible alternatives are available to avoid nighttime construction, the project would qualify for the aforementioned exemption provided in the County Code regarding nighttime construction noise. In addition, the project applicant would designate a noise complaint administrator to respond to any noise complaints that arise during project construction and would address noise complains on a case-by-case basis.

LONG-TERM, OPERATIONAL NOISE

Transportation Noise Sources

After construction is completed, the project would not appreciably increase the number of employees or visitors to the project area because Well 80 would replace other aging well facilities that SSWD needs to take out of service. Therefore, after construction of project facilities is complete, operation of the project would result in minimal, if any, new vehicle trips to and from the area and there would be no measurable increase in traffic noise levels that could exceed the County's applicable incremental increase noise standard.

Stationary Noise Sources

The types of operational, noise-generating equipment used throughout the project site would include a pump for extracting water in the well, an electrical transformer, and an emergency generator. Water treatment activities occurring within the treatment building are not expected to generate substantial noise that could affect nearby receptors because these activities would not involve any loud machinery or equipment. The generator would only be used for emergencies and to conduct periodic testing. Section 8.68.090 of the Sacramento County Code provides an exemption for emergency activities, which, by definition, include the use of machinery or equipment by private or public utilities when restoring a utility service. Policy NO-16 in the General Plan Noise Element also exempts noise generated during the operation of generators for use in emergency situations and includes the routine testing of such equipment within the exemption, provided that testing occurs during daytime hours. The generator installed on-site would only be used during power outages, and operation for maintenance is scheduled to occur during daytime hours. Thus, operation of the backup generator would be exempt from County noise standards.

The water pump would be installed adjacent to the well, which is located approximately 160 feet away from a single-family residence to the north and 220 feet away from multi-family residences to the west. Pumps generate a noise level of approximately 74 dB at 50 feet (FHWA 2006:3). Although the pump would be enclosed, it is unknown at this time how much sound attenuation this enclosure would provide. Thus, the noise modeling did not include sound reduction from any noise attenuating features. The pump alone would expose the single-family and multi-family residences to a noise level of 64 dB L_{eq} and 61 dB L_{eq}, respectively. Detailed calculations are provided in Appendix D. Assuming that building walls would provide 24 dB of attenuation (EPA 1971:11), indoor noise exposure at the single-family and multi-family residences would be 40 dB L_{eq}, and 37 dB L_{eq}, respectively. Because pumps would operate during nighttime hours when the County noise standards are lower, the noise exposure levels of nearby residential land uses must be compared to the County's nighttime noise standards for non-transportation noise sources, which are 50 dB L_{eq} for outdoor areas and 35 dB L_{eq} for indoor areas. Thus, based on the modeling conducted, the pump would exceed the County's noise standards for both outdoor and indoor noise at residential land uses.

The electrical transformer would be installed adjacent to the water treatment building and would be located approximately 135 feet away from a single-family residence to the north and 120 feet away from multi-family residences to the west. A reference noise level for a utility substation, including a 12.5 megavolt amperes transformer, is 55 dBA L_{eq} at 50 feet from the source, under operational load conditions with fans operating (SMUD 2018). The transformer would expose the single-family and multi-family residences to an outdoor noise level of 46 dB L_{eq} and 47 dB L_{eq}, respectively. Detailed calculations are provided in Appendix D. Assuming that building walls would provide 24 dB of attenuation (EPA 1971:11), the level of interior noise exposure at the single-family and multi-family residences would be 22 dB L_{eq}, and 23 dB L_{eq}, respectively. The same County standards as stated above would apply to the

transformer, since it is a stationary, non-transportation noise source and would operate during nighttime hours. Therefore, based on the modeling conducted, the transformer would not exceed the applicable County standards for both outdoor and indoor noise. In conclusion, noise levels associated with the operation of the well pump would exceed County noise standards, and mitigation would be required to reduce the impact.

SUMMARY

While project construction would result in temporary increases in noise levels, both daytime and nighttime construction associated with the project would be exempt from the County's noise standards. However, because noise generated during operation of the project, specifically operation of the well pump, would exceed applicable County noise standards, this impact would be potentially significant and mitigation is required.

> Mitigation Measure 3.13-1: Reduce noise generated by the water pump
>
> The well pump shall be fully enclosed so as to provide at approximately 14 dB of sound attenuation to ensure that County nighttime noise standards for non-transportation noise sources are not exceeded at nearby noise-sensitive land uses (50 dB L_{eq} for outdoor areas and 35 dB L_{eq} for indoor areas). The design of the enclosure shall be reviewed and approved by a qualified acoustical professional prior to installation of the enclosure, and the effectiveness of the enclosure shall be confirmed by a qualified acoustical professional after its installation.

Implementation of Mitigation Measure 3.13-1 would ensure that noise generated by the water pump would not exceed applicable County noise standards at nearby residential receptors, thus reducing the impact to a less-than-significant level.

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

Less-than-Significant Impact. Project construction would not involve the use of ground vibration–intensive activities, such as pile driving and blasting. Activities involving pile driving and blasting typically generate the highest vibration levels compared to other construction methods and are, therefore, of greatest concern when evaluating construction-related vibration impacts. Pieces of equipment that generate lower levels of ground vibration, such as a drill rig, would be used during construction. Operation of a caisson drill, which is a type of drill rig, generates a vibration level of 0.089 in/sec PPV and 87 VdB at 25 feet (FTA 2018:184). Vibration from operation of a drill rig could exceed the threshold of significance of 0.5 in/sec PPV for structural damage within 8 feet of drilling activity and the threshold with respect to human response of 80 VdB within 43 feet of truck activity. Refer to Appendix D for detailed vibration modeling calculations. The nearest vibration-sensitive receptors are located over 43 feet away from the location of the well, which is where the drill rig would be operated. Thus, project construction would not result vibration levels at sensitive receptors exceeding Caltrans- or FTA-recommended standards with respect to the prevention of structural damage and human annoyance, respectively. Therefore, there would be no adverse vibration effects to off-site receptors, this impact would be less than significant, and no mitigation is required.

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 an airport land use plan or within two miles of a public airport or public use airport. Additionally, the project is not located within two miles of a private airstrip. Sacramento McClellan Airport is the closest airport and is located approximately 2.5 miles west of the project site. Also, the project would not include any new land uses where people would live. Operation of the project would require two staff trips per week to perform maintenance tasks. Thus, the project would have no impact regarding the exposure of people residing or working in the project area to excessive aircraft-related noise levels, and no mitigation is required.

3.14 POPULATION AND HOUSING

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIV. Population and Housing.				
Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Environmental Setting

The population of Sacramento County was estimated to be 1,555,365 residents in 2020. Of the total county population, 593,801 residents were estimated to live in unincorporated areas. Total housing for 2020 included an estimate of 579,115 units within the county (DOF 2020). The project would not generate any new residents in the area and would not provide any new jobs.

3.14.2 Discussion

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)?

No Impact. The project does not include new homes or businesses that would induce or generate unplanned population growth. The construction and operation of the new groundwater well and associated site facilities would maintain SSWD's groundwater extraction rate to serve existing SSWD customers. The project would not increase water supply, remove an obstacle to growth, nor support unplanned population growth. Therefore, the project would have no impact, and no mitigation is required.

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

No Impact. The project site is undeveloped. The project would not displace existing homes or businesses and would not require the construction of replacement housing. Therefore, the project would have no impact on housing, and no mitigation is required.

3.15 PUBLIC SERVICES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XV. Public Services.				
Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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?	☐	☐	☐	☒

3.15.1 Environmental Setting

Fire protection within the project area is provided by the Sacramento Metropolitan Fire District (Metro Fire). Metro Fire serves a population of over 745,000 in a 359-square-mile service area. The nearest Metro Fire Station, Station 24, is located approximately 0.5 mile south of the project site.

Police services within the project area are provided by the Sacramento County Sheriff's Department. The nearest police station is located approximately 0.5 mile northeast of the project site.

Public education is provided by the Twin Rivers Unified School District. The nearest school, Pioneer Elementary School, is located approximately 0.7 mile north of the project site.

The nearest parks include Arcade Creek Park and Walerga Park, both located within 0.75 mile of the project site.

3.15.2 Discussion

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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?

No Impact. Implementation of the project would not increase demand for fire protection services because the project would not generate new residents or businesses, which is the driving factor for fire protection services in the urban area of the county. During construction, emergency access would be maintained along roadways for emergency

vehicles and services. Because the project would not increase demand for fire protection services, the construction of new or expansion of existing fire service facilities would not be required. Therefore, the project would have no impact on fire protection services, and no mitigation is required.

Police protection?

No Impact. Implementation of the project would not increase demand for police protection services because the project would not generate new residents or businesses. During construction, emergency access would be maintained along roadways for emergency vehicles and services. Because the project would not increase demand for police protection services, the construction of new or expansion of existing police service facilities would not be required. Therefore, the project would have no impact on police protection services, and no mitigation is required.

Schools?

No Impact. The project would not provide any new housing that would generate new students in the community nor result in an increase in employment opportunities that could indirectly contribute new students to the local school district. Therefore, the project would have no impact on school services and facilities, and no mitigation is required.

Parks?

No Impact. Impacts to parks are typically associated with population growth and/or alteration or removal of existing park spaces. The project would not alter or remove any parks, would not result in additional housing, and would not generate new residents. Therefore, the project would have no impact on parks, and no mitigation is required.

Other public facilities?

No Impact. As previously described, the project would include construction of a new groundwater well in unincorporated Sacramento County. No residences would be removed or added, no businesses removed or added, and the occasional maintenance or monitoring activities at the site would not impact demand for public facilities in Sacramento. The project would have no impact on other public facilities, and no mitigation is required.

3.16 RECREATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVI. Recreation.				
Would the project:				
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 Environmental Setting

The project is located within unincorporated Sacramento County. As described in Section 3.15, "Public Services," the nearest parks include Arcade Creek Park and Walerga Park, both located within 0.75 mile of the project site.

3.16.2 Discussion

a,b) 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? Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

No impact. Implementation of the project includes construction of a new well, water treatment building, generator, transformer, material storage bins, and a vactor dump station in Sacramento County. The project would not alter or remove any parks, would not result in additional housing, and would not increase the population in Sacramento County, which could increase use of parks or necessitate new or expanded recreation facilities. Further, the project would not alter the short- or long-term use of recreation facilities. Therefore, the project would have no impact on recreational facilities, and no mitigation is required.

3.17 TRANSPORTATION

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVII. Transportation.				
Would the project:				
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?	☐	☐	☒	☐

3.17.1 Environmental Setting

Transportation within the project area predominantly consists of personal automobile use; however, Sacramento Regional Transit (SRT), which includes several nearby bus stops along Auburn Boulevard.

3.17.2 Discussion

a) 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 would not conflict with the Circulation Element of the Sacramento County General Plan. The project area is predominantly automobile-oriented and the long-term operation of a well at the project site would not impact transit, bicycle, or pedestrian facilities. Temporary construction activities would result in a temporary increase in vehicle trips to the project site by workers and equipment as well as utility connections under Walnut Avenue; however, construction equipment and vehicles would be staged onsite. During construction, street parking near the site on Walnut Avenue would be temporarily blocked off for construction access. SSWD would be required to obtain an encroachment permit from Sacramento County, which would require SSWD to maintain emergency access at all times. Once project construction is complete, street parking and site access from Walnut Avenue would resume as normal. The project would result in a less-than-significant impact on transit, bicycle, and pedestrian facilities, and no mitigation is required.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3(b), which pertains to vehicle miles travelled?

Less-than-Significant Impact. Construction activities would result in a temporary increase in vehicle trips to the project site during construction by workers and equipment. However, the project would not alter existing land uses, would not generate new residents or businesses, and the maintenance activities during project operation would not appreciably alter the vehicle miles traveled. This is a less-than-significant impact and no mitigation is required.

c) 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. The project would not alter roadway alignments nor the circulation system in the surrounding project area or within Sacramento County. The project would include construction and operation of a new well and associated onsite facilities; it would not create any incompatible uses that would increase road hazards. The project would have no impact on roadway design or hazards and no mitigation is required.

d) Result in inadequate emergency access?

Less-than-Significant Impact. Walnut Avenue would remain open during construction, with portions of street parking blocked off for construction site access. As previously described, SSWD would be required to obtain an encroachment permit from Sacramento County. As part of this encroachment permit application, SSWD would be required to maintain emergency access at all times. Once project construction is complete, all street parking would resume as normal (pre-project conditions). The project would result in a less-than-significant impact on emergency access and no mitigation is required.

3.18 TRIBAL CULTURAL RESOURCES

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XVIII. Tribal Cultural Resources.				
Has a California Native American Tribe requested consultation in accordance with Public Resources Code section 21080.3.1(b)?	☐ Yes		☒ No	
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:				
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)?	☐	☒	☐	☐
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?	☐	☒	☐	☐

3.18.1 Environmental Setting

Assembly Bill (AB) 52, signed by Governor Edmund G. Brown, Jr., in September 2014, established a new class of resources under CEQA: "tribal cultural resources." AB 52, as provided in Public Resource Code Sections 21080.3.1, 21080.3.2, and 21082.3, requires that lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation once the lead agency determines that the application for the project is complete, prior to the issuance of a Notice of Preparation of an EIR or notice of intent to adopt a negative declaration or mitigated negative declaration. Wilton Rancheria submitted written request for notification of projects from SSWD. SSWD provided notification of the Well 80 project to Wilton Rancheria via letter on May 13, 2021. As of publication of this document, Wilton Rancheria had not responded. Furthermore, Natural Investigations contacted the Native American Heritage Commission (NAHC) requesting a search of its Sacred Lands File for traditional cultural resources within or near the project site. The results of the search returned by the NAHC on January 26, 2021 were negative for Native American cultural resources in the project vicinity (NIC 2021).

3.18.2 Discussion

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:

a,b) 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)? 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 Incorporated. As described in Section 3.5, "Cultural Resources," project construction activities would not damage or otherwise change the significance of historical resources within the project area. Under PRC Section 21080.3.1, a lead agency shall begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the project if the California Native American tribe requested to the lead agency, in writing, to be informed by the lead agency through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe. Wilton Rancheria submitted written request for notification of projects from SSWD. SSWD provided notification of the Well 80 project to Wilton Rancheria via letter on May 13, 2021. As of publication of this document, Wilton Rancheria had not responded. Although the results of the Sacred Lands File were negative for Native American cultural resources in the project vicinity, without response from Wilton Rancheria, this impact is considered to be potentially significant.

Mitigation Measure 3.18-1: Protection of Known and Unknown Archaeological Resources

See Mitigation Measure 3.5-1, which shall be implemented during any ground-disturbing activities associated with project construction.

Implementation of Mitigation Measure 3.5-1 would reduce tribal cultural resource impacts to a less-than-significant level by requiring cessation of work, implementation of proper data recovery, and/or preservation procedures upon discovery of previously unknown resources.

3.19 UTILITIES AND SERVICE SYSTEMS

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XIX. Utilities and Service Systems.				
Would the project:				
a) Require or result in the relocation or construction of construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication 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 that 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 management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

3.19.1 Environmental Setting

Water supply within the project area is provided SSWD. The Sacramento Area Sewer District (SASD) provides wastewater collection and conveyance service to the project area. Wastewater flows are conveyed to the Sacramento Regional Wastewater Treatment Plant. The Sacramento County Department of Waste Management and Recycling provides solid waste services to the unincorporated portions of Sacramento County. Discussion. Kiefer Landfill is the primary solid waste disposal facility in the County. The Sacramento Municipal Utility District (SMUD) generates, transmits, and distributes electric power to a 900-square mile service area that includes Sacramento County (Sacramento County 2010).

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects?

Less-than-significant Impact. The project includes construction and operation of a new groundwater well (Well 80), a water treatment building, emergency generator, transformer, material storage bins, and a vactor dump station. In addition, a new pole and overhead electrical line is anticipated to be needed to serve the proposed 300 kVA transformer. The line would cross from the 12kV mainline on the west side of Walnut Avenue to the project site east

of Walnut Avenue. The project would not require the relocation or construction of new infrastructure beyond the infrastructure described as part of the project. Construction and operation of Well 80 as well as other site facilities are evaluated through this initial study and, with required mitigation measures, the project would not result in significant environmental impacts. This impact would be less than significant, and no mitigation is required.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

No Impact. As described in Section 3.14, "Population and Housing," the project would not include new homes or businesses that would induce or generate population growth within the area, resulting in an increase in local water demand. Further, Chapter 2, "Project Description," potable water may be used initially during construction activities. Water usage would be minimal and temporary. Further, the project would not increase SSWD's groundwater extraction; rather, it would maintain SSWD's existing groundwater extraction levels to meet existing demand as older wells reach the end of their useful life and are taken out of service. SSWD has sufficient water supply to continue to serve their customers. As such, the project would not alter water supply, but would improve water quality and water system reliability. No impact would occur to water supply and no mitigation is required.

c) Result in a determination by the wastewater treatment provider that 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?

No Impact. As described above in criterion (b), the project would not result in increased population in Sacramento County, would not increase water demand, and therefore, would not result in an increase in wastewater discharge. The project area would continue to be adequately served by the SASD and the Sacramento Regional Wastewater Treatment Plant. No impact would occur, and no mitigation is required.

d,e) 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? Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less-than-Significant Impact. Construction of the project could result in waste generation through disposal of excess soils or materials used during construction activities. Waste generated from construction would be temporary and would not adversely affect services provided by Sacramento County Department of Waste Management and Recycling or the Kiefer Landfill. The new well and water treatment would result in treatment residuals (i.e., sludge) being produced. Water would be decanted from the sludge (and returned to the process to be treated), and the dewatered sludge would be collected and disposed of periodically (e.g., collected by a hauler and taken to a landfill). The solids would be mostly inert - suspended silt materials in the raw water bound up with a chemical coagulant, like aluminum sulfate. All waste disposal and recycling would comply with regulations and statutes related to hazardous wastes. Impacts would be less than significant, and no mitigation is required.

3.20 WILDFIRE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XX. Wildfire.				
Is the project located in or near state responsibility areas or lands classified as high fire hazard severity zones?				
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:		☐ Yes		☒ No
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 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?	☐	☐	☐	☒

3.20.1 Environmental Setting

The project site and surrounding area is located within the LRA and is within a non-very high fire hazard severity zone (CAL FIRE 2020). As described in Section 3.15, "Public Services," fire protection within the project area is provided by Metro Fire.

3.20.2 Discussion

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. Construction and operation of Well 80 would not impede vehicular travel along local roadways, such that emergency response or evacuation would be impaired within the project area. During construction, which would include utility connections within the local roadways, temporary traffic controls would be implemented and emergency access would be maintained at all times. No impact would occur, and no mitigation would be required.

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?

No Impact. The project would not exacerbate wildfire risks as the project site is not located within a very-high fire hazard severity area within a State Responsibility Area. The project site is substantially surrounded by developed land and is not located near wildland areas that would be susceptible to wildfire. There would be no impact, and no mitigation would be required.

c) Require the installation 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?

Less-than-Significant Impact. As described in Section 3.9, "Hazards and Hazardous Materials," the project is located in an urbanized area of Sacramento County that is not adjacent to any sensitive fire hazard severity zones. Installation of a groundwater well and appurtenant facilities on a parcel that is surrounded by development would not exacerbate fire risks within the project area. Impacts would be less than significant, and no mitigation would be required.

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?

No Impact. The project is in an area of flat terrain and would not involve the changing to slopes that could expose people to risks of flooding from post-fire slope instability. Further, the project site and surrounding areas have not been subject to recent wildfire burns such that downslope areas would be affected by project implementation. As described in Section 3.10, "Hydrology and Water Quality," runoff within the project site occurs naturally, the site contains well-drained soils with a very slow rate of water transmission, and project implementation would not result in significant impacts related to onsite erosion or drainage. Once operational, onsite drainage would continue to occur naturally and would not affect offsite drainage conditions. There would be no impact, and no mitigation would be required.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL ISSUES	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
XX. Mandatory Findings of Significance.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, 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 that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

3.21.1 Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Less than significant with mitigation incorporated. Implementation of Mitigation Measures 3.4-1 and 3.4-2, identified in Section 3.4, "Biological Resources," of this Initial Study would ensure that the project would not 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 an endangered, rare, or threatened species. Implementation of Mitigation Measure 3.5-1 identified in Section 3.5, "Cultural Resources," would prevent the project from significantly affecting previously undiscovered resources or eliminating important examples of the major periods of California history or prehistory.

The project-related impacts would primarily occur during construction and would be mitigated to be less than significant. The post-project operation of Well 80 would not impact biological or cultural resources. Therefore, the potential of the project to potentially degrade the environment is considered less than significant with mitigation.

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. As presented throughout this environmental checklist, the project would result in less-than-significant impacts or impacts that are mitigated to less-than-significant levels. The potential disturbance to raptor nests shall be avoided through Mitigation Measure 3.4-1. Heritage trees and oak woodland shall be protected through a permit, protection, and replacement (Mitigation Measure 3.4-2). Although there are not known archaeological resources at the site, the potential for unknown materials to be disturbed is addressed through implementation of Mitigation Measure 3.5-1. Finally, noise, which inherently dissipates with distance, is addressed both by noise barriers during project construction and enclosures for noise-generating operational equipment; further, Mitigation Measure 3.13-1 ensures the well pump enclosure meetings required noise attenuation. Therefore, the project would not result in significant construction or operational environmental impacts, and the project would not contribute to significant cumulative impacts.

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

Less than significant with mitigation incorporated. Potential adverse effects to human beings would occur due to project-related construction impacts related to potential air emissions, noise, and use and transport of hazardous materials. However, project-related air emissions would not be in excess of the SMAQMD thresholds for ROG, NO_X, PM_{10}, or $PM_{2.5}$, which are tied to achieving or maintaining attainment designations with the NAAQS and CAAQS, which are scientifically substantiated, numerical concentrations of criteria air pollutants considered to be protective of human health. Hazardous materials related to well operations and water treatment would be transported, handled, stored, and disposed of in compliance with all regulations. Finally, noise due to construction would be short-term, a noise barrier would be in place during all well construction activities, and SSWD would provide a contact for noise complaints and would handle them on a case-by-case basis. Noise from well operations would be reduced to less-than-significant by ensuring that the pump is encased in a structure that sufficiently reduces noise (Mitigation Measure 3.13-1), and the treatment facilities and transformer would also be in noise-reducing enclosures. Therefore, potential adverse effects on human beings as a result of the project would be less than significant.

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3.20 Mandatory Findings of Significance

No references used in this chapter.

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5 REPORT PREPARERS

Sacramento Suburban Water District (Lead Agency)

David Espinoza, P.E. ..... Senior Engineer

Montgomery & Associates (Well Engineer)

Bill DeBoer, P.G., C.Hg. ..... Senior Hydrogeologist
Nicolas Byler P.G. ..... Hydrogeologist

West Yost (Civil Engineer)

Ken Loy ..... Principal Hydrogeologist
Jim Connell ..... Principal Engineer

Ascent Environmental (CEQA Compliance)

Sydney Coatsworth, AICP ..... Principal in Charge
Suzanne Enslow ..... Project Manager
Kirsten Burrowes ..... Environmental Planner
Carlos Alvarado ..... Wildlife Biologist
Dimitri Antoniou, AICP ..... Senior Air Quality/GHG/Noise
Masury Lynch ..... Noise
Shaurya Johari ..... Air Quality/GHG
Corey Alling ..... Graphics
Phi Ngo ..... GIS
Gayiety Lane/Michele Mattei ..... Publication

Natural Investigations Company, Inc. (Archaeological and Tribal Cultural Resources)

Cindy Arrington, MS, RPA ..... Principal, Archaeologist
Tim Spillane, MA, RPA ..... Principal Investigator/Project Manager/GIS Analyst II

HortScience Bartlett Consulting (Arborist)

Jillian Keller ..... ISA Certified Arborist

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Appendix A

Air Quality Modeling Data

Sacramento Suburban Water District (SSWD) Well 80

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	47.92	1000sqft	1.10	47,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2023
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	132.43	**CH4 Intensity (lb/MWhr)**	0.1	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Utility GHG emissions factor interpolated between 453.2 lbCO2/Mwh reported for 2019 and 0 lbCo2/MWh assumed for 2045, under SB100.

Land Use -

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Bore/Drill Rigs will be required for construction of the well. Since the drilling phase will be 24 hours and 7 days a week, the grading and site preparation phase equipment are considered to be working 24 hours a day.

Off-road Equipment -

Off-road Equipment - Since the drilling phase will be 24 hours and 7 days a week, the grading and site preparation phase equipment are considered to be working 24 hours a day.

Trips and VMT -

Grading -

Architectural Coating -

Vehicle Trips - The project anticipates requirement of two staff trips per week for maintenance of the well and operation of the chlorination facility and one staff for chemical delivery trip per week.

Vehicle Emission Factors - Using EMFAC 2021 emission factors.

Vehicle Emission Factors - Using EMFAC 2021 emission factors.

Vehicle Emission Factors - Using EMFAC 2021 emission factors.

Area Coating -

Energy Use - Adjusted energy values for Title 24 2019 Energy Efficiency standards.

Fleet Mix -

Sacramento Suburban Water District (SSWD) Well 80 - Sacramento Valley Air Basin, Annual

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblEnergyUse	T24E	3.41	3.24
tblEnergyUse	T24NG	23.39	22.22
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	6.00	24.00
tblOffRoadEquipment	UsageHours	7.00	24.00
tblOffRoadEquipment	UsageHours	7.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.1
tblProjectCharacteristics	CO2IntensityFactor	590.31	132.43
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.60

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1127	1.1447	0.8948	1.9500e-003	0.0359	0.0525	0.0884	0.0135	0.0496	0.0631	0.0000	172.4178	172.4178	0.0317	0.0000	173.2098
2022	0.2310	0.0815	0.0926	1.7000e-004	1.6200e-003	3.9500e-003	5.5700e-003	4.4000e-004	3.7300e-003	4.1600e-003	0.0000	14.8896	14.8896	3.1500e-003	0.0000	14.9682
Maximum	**0.2310**	**1.1447**	**0.8948**	**1.9500e-003**	**0.0359**	**0.0525**	**0.0884**	**0.0135**	**0.0496**	**0.0631**	**0.0000**	**172.4178**	**172.4178**	**0.0317**	**0.0000**	**173.2098**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.1127	1.1447	0.8948	1.9500e-003	0.0359	0.0525	0.0884	0.0135	0.0496	0.0631	0.0000	172.4177	172.4177	0.0317	0.0000	173.2097
2022	0.2310	0.0815	0.0926	1.7000e-004	1.6200e-003	3.9500e-003	5.5700e-003	4.4000e-004	3.7300e-003	4.1600e-003	0.0000	14.8895	14.8895	3.1500e-003	0.0000	14.9682
Maximum	**0.2310**	**1.1447**	**0.8948**	**1.9500e-003**	**0.0359**	**0.0525**	**0.0884**	**0.0135**	**0.0496**	**0.0631**	**0.0000**	**172.4177**	**172.4177**	**0.0317**	**0.0000**	**173.2097**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Sacramento Suburban Water District (SSWD) Well 80 - Sacramento Valley Air Basin, Annual

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2021	6-30-2021	0.5309	0.5309
2	7-1-2021	9-30-2021	0.3621	0.3621
3	10-1-2021	12-31-2021	0.3627	0.3627
4	1-1-2022	3-31-2022	0.3140	0.3140
		Highest	0.5309	0.5309

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2094	0.0000	4.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.6000e-004	8.6000e-004	0.0000	0.0000	9.1000e-004
Energy	8.9500e-003	0.0814	0.0684	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	131.7877	131.7877	0.0343	1.9500e-003	133.2270
Mobile	6.1300e-003	0.0369	0.0723	2.8000e-004	0.0224	2.1000e-004	0.0226	6.0100e-003	2.0000e-004	6.2100e-003	0.0000	25.8381	25.8381	1.0800e-003	0.0000	25.8652
Waste						0.0000	0.0000		0.0000	0.0000	12.0617	0.0000	12.0617	0.7128	0.0000	29.8824
Water						0.0000	0.0000		0.0000	0.0000	3.5157	3.6019	7.1175	0.3638	8.5500e-003	18.7617
Total	**0.2245**	**0.1182**	**0.1410**	**7.7000e-004**	**0.0224**	**6.3900e-003**	**0.0288**	**6.0100e-003**	**6.3800e-003**	**0.0124**	**15.5774**	**161.2286**	**176.8059**	**1.1120**	**0.0105**	**207.7372**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2094	0.0000	4.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.6000e-004	8.6000e-004	0.0000	0.0000	9.1000e-004
Energy	8.9500e-003	0.0814	0.0684	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	131.7877	131.7877	0.0343	1.9500e-003	133.2270
Mobile	6.1300e-003	0.0369	0.0723	2.8000e-004	0.0224	2.1000e-004	0.0226	6.0100e-003	2.0000e-004	6.2100e-003	0.0000	25.8381	25.8381	1.0800e-003	0.0000	25.8652
Waste						0.0000	0.0000		0.0000	0.0000	12.0617	0.0000	12.0617	0.7128	0.0000	29.8824
Water						0.0000	0.0000		0.0000	0.0000	3.5157	3.6019	7.1175	0.3638	8.5500e-003	18.7617
Total	**0.2245**	**0.1182**	**0.1410**	**7.7000e-004**	**0.0224**	**6.3900e-003**	**0.0288**	**6.0100e-003**	**6.3800e-003**	**0.0124**	**15.5774**	**161.2286**	**176.8059**	**1.1120**	**0.0105**	**207.7372**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Sacramento Suburban Water District (SSWD) Well 80 - Sacramento Valley Air Basin, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/2/2021	7	2	
2	Grading	Grading	4/3/2021	4/6/2021	7	4	
3	Building Construction	Building Construction	4/9/2021	1/13/2022	5	200	
4	Paving	Paving	1/14/2022	1/27/2022	5	10	
5	Architectural Coating	Architectural Coating	1/28/2022	2/10/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 71,880; Non-Residential Outdoor: 23,960; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	24.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	24.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	24.00	97	0.37
Grading	Bore/Drill Rigs	1	24.00	221	0.50
Grading	Graders	1	24.00	187	0.41
Grading	Rubber Tired Dozers	1	24.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	24.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	20.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0600e-003	0.0564	0.0242	5.0000e-005		2.5000e-003	2.5000e-003		2.3000e-003	2.3000e-003	0.0000	4.8170	4.8170	1.5600e-003	0.0000	4.8559
Total	**5.0600e-003**	**0.0564**	**0.0242**	**5.0000e-005**	**5.8000e-003**	**2.5000e-003**	**8.3000e-003**	**2.9500e-003**	**2.3000e-003**	**5.2500e-003**	**0.0000**	**4.8170**	**4.8170**	**1.5600e-003**	**0.0000**	**4.8559**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0544	0.0544	0.0000	0.0000	0.0544
Total	**3.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0544**	**0.0544**	**0.0000**	**0.0000**	**0.0544**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.8000e-003	0.0000	5.8000e-003	2.9500e-003	0.0000	2.9500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0600e-003	0.0564	0.0242	5.0000e-005		2.5000e-003	2.5000e-003		2.3000e-003	2.3000e-003	0.0000	4.8170	4.8170	1.5600e-003	0.0000	4.8559
Total	**5.0600e-003**	**0.0564**	**0.0242**	**5.0000e-005**	**5.8000e-003**	**2.5000e-003**	**8.3000e-003**	**2.9500e-003**	**2.3000e-003**	**5.2500e-003**	**0.0000**	**4.8170**	**4.8170**	**1.5600e-003**	**0.0000**	**4.8559**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0544	0.0544	0.0000	0.0000	0.0544
Total	**3.0000e-005**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0544**	**0.0544**	**0.0000**	**0.0000**	**0.0544**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1309	0.0608	1.7000e-004		5.5400e-003	5.5400e-003		5.1000e-003	5.1000e-003	0.0000	14.5984	14.5984	4.7200e-003	0.0000	14.7165
Total	**0.0117**	**0.1309**	**0.0608**	**1.7000e-004**	**9.8300e-003**	**5.5400e-003**	**0.0154**	**5.0500e-003**	**5.1000e-003**	**0.0102**	**0.0000**	**14.5984**	**14.5984**	**4.7200e-003**	**0.0000**	**14.7165**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.4000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1359	0.1359	0.0000	0.0000	0.1360
Total	**7.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1359**	**0.1359**	**0.0000**	**0.0000**	**0.1360**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					9.8300e-003	0.0000	9.8300e-003	5.0500e-003	0.0000	5.0500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0117	0.1309	0.0608	1.7000e-004		5.5400e-003	5.5400e-003		5.1000e-003	5.1000e-003	0.0000	14.5984	14.5984	4.7200e-003	0.0000	14.7164
Total	**0.0117**	**0.1309**	**0.0608**	**1.7000e-004**	**9.8300e-003**	**5.5400e-003**	**0.0154**	**5.0500e-003**	**5.1000e-003**	**0.0102**	**0.0000**	**14.5984**	**14.5984**	**4.7200e-003**	**0.0000**	**14.7164**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.4000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1359	0.1359	0.0000	0.0000	0.1360
Total	**7.0000e-005**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1359**	**0.1359**	**0.0000**	**0.0000**	**0.1360**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0864	0.8699	0.7395	1.3700e-003		0.0441	0.0441		0.0419	0.0419	0.0000	119.4528	119.4528	0.0239	0.0000	120.0510
Total	**0.0864**	**0.8699**	**0.7395**	**1.3700e-003**		**0.0441**	**0.0441**		**0.0419**	**0.0419**	**0.0000**	**119.4528**	**119.4528**	**0.0239**	**0.0000**	**120.0510**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5300e-003	0.0826	0.0181	2.1000e-004	5.0100e-003	2.3000e-004	5.2400e-003	1.4500e-003	2.2000e-004	1.6700e-003	0.0000	20.3788	20.3788	1.1100e-003	0.0000	20.4066
Worker	6.9900e-003	4.8800e-003	0.0514	1.4000e-004	0.0151	1.0000e-004	0.0152	4.0100e-003	1.0000e-004	4.1100e-003	0.0000	12.9806	12.9806	3.6000e-004	0.0000	12.9895
Total	**9.5200e-003**	**0.0875**	**0.0695**	**3.5000e-004**	**0.0201**	**3.3000e-004**	**0.0204**	**5.4600e-003**	**3.2000e-004**	**5.7800e-003**	**0.0000**	**33.3594**	**33.3594**	**1.4700e-003**	**0.0000**	**33.3960**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0864	0.8699	0.7395	1.3700e-003		0.0441	0.0441		0.0419	0.0419	0.0000	119.4526	119.4526	0.0239	0.0000	120.0509
Total	**0.0864**	**0.8699**	**0.7395**	**1.3700e-003**		**0.0441**	**0.0441**		**0.0419**	**0.0419**	**0.0000**	**119.4526**	**119.4526**	**0.0239**	**0.0000**	**120.0509**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.5300e-003	0.0826	0.0181	2.1000e-004	5.0100e-003	2.3000e-004	5.2400e-003	1.4500e-003	2.2000e-004	1.6700e-003	0.0000	20.3788	20.3788	1.1100e-003	0.0000	20.4066
Worker	6.9900e-003	4.8800e-003	0.0514	1.4000e-004	0.0151	1.0000e-004	0.0152	4.0100e-003	1.0000e-004	4.1100e-003	0.0000	12.9806	12.9806	3.6000e-004	0.0000	12.9895
Total	**9.5200e-003**	**0.0875**	**0.0695**	**3.5000e-004**	**0.0201**	**3.3000e-004**	**0.0204**	**5.4600e-003**	**3.2000e-004**	**5.7800e-003**	**0.0000**	**33.3594**	**33.3594**	**1.4700e-003**	**0.0000**	**33.3960**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6800e-003	0.0365	0.0344	6.0000e-005		1.7900e-003	1.7900e-003		1.7000e-003	1.7000e-003	0.0000	5.6300	5.6300	1.1200e-003	0.0000	5.6580
Total	**3.6800e-003**	**0.0365**	**0.0344**	**6.0000e-005**		**1.7900e-003**	**1.7900e-003**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**5.6300**	**5.6300**	**1.1200e-003**	**0.0000**	**5.6580**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.6900e-003	7.8000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9518	0.9518	5.0000e-005	0.0000	0.9530
Worker	3.1000e-004	2.1000e-004	2.2200e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5896	0.5896	1.0000e-005	0.0000	0.5899
Total	**4.2000e-004**	**3.9000e-003**	**3.0000e-003**	**2.0000e-005**	**9.5000e-004**	**1.0000e-005**	**9.7000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.5413**	**1.5413**	**6.0000e-005**	**0.0000**	**1.5430**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.6800e-003	0.0365	0.0344	6.0000e-005		1.7900e-003	1.7900e-003		1.7000e-003	1.7000e-003	0.0000	5.6300	5.6300	1.1200e-003	0.0000	5.6580
Total	**3.6800e-003**	**0.0365**	**0.0344**	**6.0000e-005**		**1.7900e-003**	**1.7900e-003**		**1.7000e-003**	**1.7000e-003**	**0.0000**	**5.6300**	**5.6300**	**1.1200e-003**	**0.0000**	**5.6580**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.6900e-003	7.8000e-004	1.0000e-005	2.4000e-004	1.0000e-005	2.5000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9518	0.9518	5.0000e-005	0.0000	0.9530
Worker	3.1000e-004	2.1000e-004	2.2200e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.5896	0.5896	1.0000e-005	0.0000	0.5899
Total	**4.2000e-004**	**3.9000e-003**	**3.0000e-003**	**2.0000e-005**	**9.5000e-004**	**1.0000e-005**	**9.7000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**1.5413**	**1.5413**	**6.0000e-005**	**0.0000**	**1.5430**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.6000e-003	0.0000	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4258	0.4258	1.0000e-005	0.0000	0.4261
Total	**2.2000e-004**	**1.5000e-004**	**1.6000e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4258**	**0.4258**	**1.0000e-005**	**0.0000**	**0.4261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9314
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9314**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.2000e-004	1.5000e-004	1.6000e-003	0.0000	5.1000e-004	0.0000	5.2000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4258	0.4258	1.0000e-005	0.0000	0.4261
Total	**2.2000e-004**	**1.5000e-004**	**1.6000e-003**	**0.0000**	**5.1000e-004**	**0.0000**	**5.2000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4258**	**0.4258**	**1.0000e-005**	**0.0000**	**0.4261**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.2231**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1310	0.1310	0.0000	0.0000	0.1311
Total	**7.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1310**	**0.1310**	**0.0000**	**0.0000**	**0.1311**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2221					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.2231**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	4.9000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1310	0.1310	0.0000	0.0000	0.1311
Total	**7.0000e-005**	**5.0000e-005**	**4.9000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1310**	**0.1310**	**0.0000**	**0.0000**	**0.1311**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	6.1300e-003	0.0369	0.0723	2.8000e-004	0.0224	2.1000e-004	0.0226	6.0100e-003	2.0000e-004	6.2100e-003	0.0000	25.8381	25.8381	1.0800e-003	0.0000	25.8652
Unmitigated	6.1300e-003	0.0369	0.0723	2.8000e-004	0.0224	2.1000e-004	0.0226	6.0100e-003	2.0000e-004	6.2100e-003	0.0000	25.8381	25.8381	1.0800e-003	0.0000	25.8652

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	28.75	0.00	0.00	59,958	59,958
Total	28.75	0.00	0.00	59,958	59,958

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.546645	0.035890	0.197836	0.113293	0.020769	0.005403	0.022328	0.047186	0.001633	0.001687	0.005655	0.000779	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.2066	43.2066	0.0326	3.3000e-004	44.1194
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	43.2066	43.2066	0.0326	3.3000e-004	44.1194
NaturalGas Mitigated	8.9500e-003	0.0814	0.0684	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	88.5812	88.5812	1.7000e-003	1.6200e-003	89.1076
NaturalGas Unmitigated	8.9500e-003	0.0814	0.0684	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	88.5812	88.5812	1.7000e-003	1.6200e-003	89.1076

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.65995e+006	8.9500e-003	0.0814	0.0684	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	88.5812	88.5812	1.7000e-003	1.6200e-003	89.1076
Total		**8.9500e-003**	**0.0814**	**0.0684**	**4.9000e-004**		**6.1800e-003**	**6.1800e-003**		**6.1800e-003**	**6.1800e-003**	**0.0000**	**88.5812**	**88.5812**	**1.7000e-003**	**1.6200e-003**	**89.1076**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	1.65995e+006	8.9500e-003	0.0814	0.0684	4.9000e-004		6.1800e-003	6.1800e-003		6.1800e-003	6.1800e-003	0.0000	88.5812	88.5812	1.7000e-003	1.6200e-003	89.1076
Total		**8.9500e-003**	**0.0814**	**0.0684**	**4.9000e-004**		**6.1800e-003**	**6.1800e-003**		**6.1800e-003**	**6.1800e-003**	**0.0000**	**88.5812**	**88.5812**	**1.7000e-003**	**1.6200e-003**	**89.1076**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	719279	43.2066	0.0326	3.3000e-004	44.1194
Total		**43.2066**	**0.0326**	**3.3000e-004**	**44.1194**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	719279	43.2066	0.0326	3.3000e-004	44.1194
Total		**43.2066**	**0.0326**	**3.3000e-004**	**44.1194**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2094	0.0000	4.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.6000e-004	8.6000e-004	0.0000	0.0000	9.1000e-004
Unmitigated	0.2094	0.0000	4.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.6000e-004	8.6000e-004	0.0000	0.0000	9.1000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0222					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.6000e-004	8.6000e-004	0.0000	0.0000	9.1000e-004
Total	**0.2094**	**0.0000**	**4.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.6000e-004**	**8.6000e-004**	**0.0000**	**0.0000**	**9.1000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0222					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1872					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.4000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	8.6000e-004	8.6000e-004	0.0000	0.0000	9.1000e-004
Total	**0.2094**	**0.0000**	**4.4000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**8.6000e-004**	**8.6000e-004**	**0.0000**	**0.0000**	**9.1000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	7.1175	0.3638	8.5500e-003	18.7617
Unmitigated	7.1175	0.3638	8.5500e-003	18.7617

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	11.0815 / 0	7.1175	0.3638	8.5500e-003	18.7617
Total		**7.1175**	**0.3638**	**8.5500e-003**	**18.7617**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	11.0815 / 0	7.1175	0.3638	8.5500e-003	18.7617
Total		**7.1175**	**0.3638**	**8.5500e-003**	**18.7617**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.0617	0.7128	0.0000	29.8824
Unmitigated	12.0617	0.7128	0.0000	29.8824

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	59.42	12.0617	0.7128	0.0000	29.8824
Total		**12.0617**	**0.7128**	**0.0000**	**29.8824**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	59.42	12.0617	0.7128	0.0000	29.8824
Total		**12.0617**	**0.7128**	**0.0000**	**29.8824**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Sacramento Suburban Water District (SSWD) Well 80

Sacramento Valley Air Basin, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	47.92	1000sqft	1.10	47,920.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	6			**Operational Year**	2023
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	132.43	**CH4 Intensity (lb/MWhr)**	0.1	**N2O Intensity (lb/MWhr)**	0.001

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Utility GHG emissions factor interpolated between 453.2 lbCO2/Mwh reported for 2019 and 0 lbCo2/MWh assumed for 2045, under SB100.

Land Use -

Construction Phase -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Bore/Drill Rigs will be required for construction of the well. Since the drilling phase will be 24 hours and 7 days a week, the grading and site preparation phase equipment are considered to be working 24 hours a day.

Off-road Equipment -

Off-road Equipment - Since the drilling phase will be 24 hours and 7 days a week, the grading and site preparation phase equipment are considered to be working 24 hours a day.

Trips and VMT -

Grading -

Architectural Coating -

Vehicle Trips - The project anticipates requirement of two staff trips per week for maintenance of the well and operation of the chlorination facility and one staff for chemical delivery trip per week.

Vehicle Emission Factors - Using EMFAC 2021 emission factors.

Vehicle Emission Factors - Using EMFAC 2021 emission factors.

Vehicle Emission Factors - Using EMFAC 2021 emission factors.

Area Coating -

Energy Use - Adjusted energy values for Title 24 2019 Energy Efficiency standards.

Fleet Mix -

Sacramento Suburban Water District (SSWD) Well 80 - Sacramento Valley Air Basin, Summer

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblConstructionPhase	NumDaysWeek	5.00	7.00
tblEnergyUse	T24E	3.41	3.24
tblEnergyUse	T24NG	23.39	22.22
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		Grading
tblOffRoadEquipment	UsageHours	6.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblOffRoadEquipment	UsageHours	6.00	24.00
tblOffRoadEquipment	UsageHours	7.00	24.00
tblOffRoadEquipment	UsageHours	7.00	24.00
tblOffRoadEquipment	UsageHours	8.00	24.00
tblProjectCharacteristics	CH4IntensityFactor	0.029	0.1
tblProjectCharacteristics	CO2IntensityFactor	590.31	132.43
tblProjectCharacteristics	N2OIntensityFactor	0.006	0.001
tblVehicleTrips	ST_TR	1.32	0.00
tblVehicleTrips	SU_TR	0.68	0.00
tblVehicleTrips	WD_TR	6.97	0.60

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.8766	65.4665	30.7353	0.0839	5.8653	2.7712	8.3615	2.9711	2.5495	5.2677	0.0000	8,128.8749	8,128.8749	2.6046	0.0000	8,193.9886
2022	44.6421	8.9624	9.1849	0.0182	0.2185	0.4003	0.6187	0.0592	0.3801	0.4393	0.0000	1,775.0221	1,775.0221	0.4140	0.0000	1,782.2721
Maximum	**44.6421**	**65.4665**	**30.7353**	**0.0839**	**5.8653**	**2.7712**	**8.3615**	**2.9711**	**2.5495**	**5.2677**	**0.0000**	**8,128.8749**	**8,128.8749**	**2.6046**	**0.0000**	**8,193.9886**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	5.8766	65.4665	30.7353	0.0839	5.8653	2.7712	8.3615	2.9711	2.5495	5.2677	0.0000	8,128.8749	8,128.8749	2.6046	0.0000	8,193.9886
2022	44.6421	8.9624	9.1849	0.0182	0.2185	0.4003	0.6187	0.0592	0.3801	0.4393	0.0000	1,775.0221	1,775.0221	0.4140	0.0000	1,782.2721
Maximum	**44.6421**	**65.4665**	**30.7353**	**0.0839**	**5.8653**	**2.7712**	**8.3615**	**2.9711**	**2.5495**	**5.2677**	**0.0000**	**8,128.8749**	**8,128.8749**	**2.6046**	**0.0000**	**8,193.9886**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1476	4.0000e-005	4.8900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0105	0.0105	3.0000e-005		0.0112
Energy	0.0490	0.4459	0.3745	2.6800e-003		0.0339	0.0339		0.0339	0.0339		535.0359	535.0359	0.0103	9.8100e-003	538.2153
Mobile	0.0588	0.2751	0.6250	2.3100e-003	0.1789	1.6300e-003	0.1805	0.0479	1.5200e-003	0.0494		234.9482	234.9482	9.3600e-003		235.1823
Total	**1.2555**	**0.7210**	**1.0045**	**4.9900e-003**	**0.1789**	**0.0355**	**0.2144**	**0.0479**	**0.0354**	**0.0833**		**769.9946**	**769.9946**	**0.0196**	**9.8100e-003**	**773.4088**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.1476	4.0000e-005	4.8900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0105	0.0105	3.0000e-005		0.0112
Energy	0.0490	0.4459	0.3745	2.6800e-003		0.0339	0.0339		0.0339	0.0339		535.0359	535.0359	0.0103	9.8100e-003	538.2153
Mobile	0.0588	0.2751	0.6250	2.3100e-003	0.1789	1.6300e-003	0.1805	0.0479	1.5200e-003	0.0494		234.9482	234.9482	9.3600e-003		235.1823
Total	**1.2555**	**0.7210**	**1.0045**	**4.9900e-003**	**0.1789**	**0.0355**	**0.2144**	**0.0479**	**0.0354**	**0.0833**		**769.9946**	**769.9946**	**0.0196**	**9.8100e-003**	**773.4088**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2021	4/2/2021	7	2	
2	Grading	Grading	4/3/2021	4/6/2021	7	4	
3	Building Construction	Building Construction	4/9/2021	1/13/2022	5	200	
4	Paving	Paving	1/14/2022	1/27/2022	5	10	
5	Architectural Coating	Architectural Coating	1/28/2022	2/10/2022	5	10	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 71,880; Non-Residential Outdoor: 23,960; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Sacramento Suburban Water District (SSWD) Well 80 - Sacramento Valley Air Basin, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	24.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	24.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	24.00	97	0.37
Grading	Bore/Drill Rigs	1	24.00	221	0.50
Grading	Graders	1	24.00	187	0.41
Grading	Rubber Tired Dozers	1	24.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	24.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	4	20.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	5.0598	56.3750	24.1956	0.0548		2.4958	2.4958		2.2961	2.2961		5,309.8092	5,309.8092	1.7173		5,352.7417
Total	**5.0598**	**56.3750**	**24.1956**	**0.0548**	**5.7996**	**2.4958**	**8.2954**	**2.9537**	**2.2961**	**5.2498**		**5,309.8092**	**5,309.8092**	**1.7173**		**5,352.7417**

3.2 Site Preparation - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0185	0.2542	6.7000e-004	0.0657	4.4000e-004	0.0662	0.0174	4.0000e-004	0.0178		66.3028	66.3028	1.8500e-003		66.3490
Total	**0.0338**	**0.0185**	**0.2542**	**6.7000e-004**	**0.0657**	**4.4000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**66.3028**	**66.3028**	**1.8500e-003**		**66.3490**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.7996	0.0000	5.7996	2.9537	0.0000	2.9537			0.0000			0.0000
Off-Road	5.0598	56.3750	24.1956	0.0548		2.4958	2.4958		2.2961	2.2961	0.0000	5,309.8091	5,309.8091	1.7173		5,352.7416
Total	**5.0598**	**56.3750**	**24.1956**	**0.0548**	**5.7996**	**2.4958**	**8.2954**	**2.9537**	**2.2961**	**5.2498**	**0.0000**	**5,309.8091**	**5,309.8091**	**1.7173**		**5,352.7416**

3.2 Site Preparation - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0338	0.0185	0.2542	6.7000e-004	0.0657	4.4000e-004	0.0662	0.0174	4.0000e-004	0.0178		66.3028	66.3028	1.8500e-003		66.3490
Total	**0.0338**	**0.0185**	**0.2542**	**6.7000e-004**	**0.0657**	**4.4000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**66.3028**	**66.3028**	**1.8500e-003**		**66.3490**

3.3 Grading - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	5.8343	65.4433	30.4175	0.0831		2.7707	2.7707		2.5490	2.5490		8,045.9964	8,045.9964	2.6022		8,111.0523
Total	**5.8343**	**65.4433**	**30.4175**	**0.0831**	**4.9143**	**2.7707**	**7.6849**	**2.5256**	**2.5490**	**5.0746**		**8,045.9964**	**8,045.9964**	**2.6022**		**8,111.0523**

3.3 Grading - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0422	0.0232	0.3178	8.3000e-004	0.0822	5.5000e-004	0.0827	0.0218	5.0000e-004	0.0223		82.8785	82.8785	2.3100e-003		82.9363
Total	**0.0422**	**0.0232**	**0.3178**	**8.3000e-004**	**0.0822**	**5.5000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**82.8785**	**82.8785**	**2.3100e-003**		**82.9363**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.9143	0.0000	4.9143	2.5256	0.0000	2.5256			0.0000			0.0000
Off-Road	5.8343	65.4433	30.4175	0.0831		2.7707	2.7707		2.5490	2.5490	0.0000	8,045.9964	8,045.9964	2.6022		8,111.0523
Total	**5.8343**	**65.4433**	**30.4175**	**0.0831**	**4.9143**	**2.7707**	**7.6849**	**2.5256**	**2.5490**	**5.0746**	**0.0000**	**8,045.9964**	**8,045.9964**	**2.6022**		**8,111.0523**

3.3 Grading - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0422	0.0232	0.3178	8.3000e-004	0.0822	5.5000e-004	0.0827	0.0218	5.0000e-004	0.0223		82.8785	82.8785	2.3100e-003		82.9363
Total	**0.0422**	**0.0232**	**0.3178**	**8.3000e-004**	**0.0822**	**5.5000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**82.8785**	**82.8785**	**2.3100e-003**		**82.9363**

3.4 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9045	9.1094	7.7429	0.0144		0.4620	0.4620		0.4385	0.4385		1,378.7868	1,378.7868	0.2762		1,385.6923
Total	**0.9045**	**9.1094**	**7.7429**	**0.0144**		**0.4620**	**0.4620**		**0.4385**	**0.4385**		**1,378.7868**	**1,378.7868**	**0.2762**		**1,385.6923**

3.4 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0260	0.8506	0.1754	2.2700e-003	0.0542	2.3300e-003	0.0565	0.0156	2.2300e-003	0.0178		238.2335	238.2335	0.0122		238.5382
Worker	0.0845	0.0463	0.6355	1.6600e-003	0.1643	1.1000e-003	0.1654	0.0436	1.0100e-003	0.0446		165.7571	165.7571	4.6200e-003		165.8725
Total	**0.1104**	**0.8969**	**0.8109**	**3.9300e-003**	**0.2185**	**3.4300e-003**	**0.2219**	**0.0592**	**3.2400e-003**	**0.0624**		**403.9906**	**403.9906**	**0.0168**		**404.4107**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9045	9.1094	7.7429	0.0144		0.4620	0.4620		0.4385	0.4385	0.0000	1,378.7868	1,378.7868	0.2762		1,385.6923
Total	**0.9045**	**9.1094**	**7.7429**	**0.0144**		**0.4620**	**0.4620**		**0.4385**	**0.4385**	**0.0000**	**1,378.7868**	**1,378.7868**	**0.2762**		**1,385.6923**

3.4 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0260	0.8506	0.1754	2.2700e-003	0.0542	2.3300e-003	0.0565	0.0156	2.2300e-003	0.0178		238.2335	238.2335	0.0122		238.5382
Worker	0.0845	0.0463	0.6355	1.6600e-003	0.1643	1.1000e-003	0.1654	0.0436	1.0100e-003	0.0446		165.7571	165.7571	4.6200e-003		165.8725
Total	**0.1104**	**0.8969**	**0.8109**	**3.9300e-003**	**0.2185**	**3.4300e-003**	**0.2219**	**0.0592**	**3.2400e-003**	**0.0624**		**403.9906**	**403.9906**	**0.0168**		**404.4107**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8185	8.1144	7.6390	0.0144		0.3972	0.3972		0.3772	0.3772		1,379.1097	1,379.1097	0.2741		1,385.9629
Total	**0.8185**	**8.1144**	**7.6390**	**0.0144**		**0.3972**	**0.3972**		**0.3772**	**0.3772**		**1,379.1097**	**1,379.1097**	**0.2741**		**1,385.9629**

3.4 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0240	0.8066	0.1608	2.2500e-003	0.0542	2.0100e-003	0.0562	0.0156	1.9200e-003	0.0175		236.1460	236.1460	0.0117		236.4395
Worker	0.0786	0.0415	0.5829	1.6000e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		159.7664	159.7664	4.1300e-003		159.8696
Total	**0.1026**	**0.8481**	**0.7437**	**3.8500e-003**	**0.2185**	**3.0800e-003**	**0.2215**	**0.0592**	**2.9000e-003**	**0.0621**		**395.9124**	**395.9124**	**0.0159**		**396.3092**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.8185	8.1144	7.6390	0.0144		0.3972	0.3972		0.3772	0.3772	0.0000	1,379.1097	1,379.1097	0.2741		1,385.9629
Total	**0.8185**	**8.1144**	**7.6390**	**0.0144**		**0.3972**	**0.3972**		**0.3772**	**0.3772**	**0.0000**	**1,379.1097**	**1,379.1097**	**0.2741**		**1,385.9629**

3.4 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0240	0.8066	0.1608	2.2500e-003	0.0542	2.0100e-003	0.0562	0.0156	1.9200e-003	0.0175		236.1460	236.1460	0.0117		236.4395
Worker	0.0786	0.0415	0.5829	1.6000e-003	0.1643	1.0700e-003	0.1654	0.0436	9.8000e-004	0.0446		159.7664	159.7664	4.1300e-003		159.8696
Total	**0.1026**	**0.8481**	**0.7437**	**3.8500e-003**	**0.2185**	**3.0800e-003**	**0.2215**	**0.0592**	**2.9000e-003**	**0.0621**		**395.9124**	**395.9124**	**0.0159**		**396.3092**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.5 Paving - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0270	0.3789	1.0400e-003	0.1068	6.9000e-004	0.1075	0.0283	6.4000e-004	0.0290		103.8482	103.8482	2.6800e-003		103.9153
Total	**0.0511**	**0.0270**	**0.3789**	**1.0400e-003**	**0.1068**	**6.9000e-004**	**0.1075**	**0.0283**	**6.4000e-004**	**0.0290**		**103.8482**	**103.8482**	**2.6800e-003**		**103.9153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205	0.0000	1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**	**0.0000**	**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

3.5 Paving - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0511	0.0270	0.3789	1.0400e-003	0.1068	6.9000e-004	0.1075	0.0283	6.4000e-004	0.0290		103.8482	103.8482	2.6800e-003		103.9153
Total	**0.0511**	**0.0270**	**0.3789**	**1.0400e-003**	**0.1068**	**6.9000e-004**	**0.1075**	**0.0283**	**6.4000e-004**	**0.0290**		**103.8482**	**103.8482**	**2.6800e-003**		**103.9153**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.4218					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**44.6264**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0157	8.3000e-003	0.1166	3.2000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		31.9533	31.9533	8.3000e-004		31.9739
Total	**0.0157**	**8.3000e-003**	**0.1166**	**3.2000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**31.9533**	**31.9533**	**8.3000e-004**		**31.9739**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.4218					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**44.6264**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.6 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0157	8.3000e-003	0.1166	3.2000e-004	0.0329	2.1000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		31.9533	31.9533	8.3000e-004		31.9739
Total	**0.0157**	**8.3000e-003**	**0.1166**	**3.2000e-004**	**0.0329**	**2.1000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**31.9533**	**31.9533**	**8.3000e-004**		**31.9739**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0588	0.2751	0.6250	2.3100e-003	0.1789	1.6300e-003	0.1805	0.0479	1.5200e-003	0.0494		234.9482	234.9482	9.3600e-003		235.1823
Unmitigated	0.0588	0.2751	0.6250	2.3100e-003	0.1789	1.6300e-003	0.1805	0.0479	1.5200e-003	0.0494		234.9482	234.9482	9.3600e-003		235.1823

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	28.75	0.00	0.00	59,958	59,958
Total	28.75	0.00	0.00	59,958	59,958

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.546645	0.035890	0.197836	0.113293	0.020769	0.005403	0.022328	0.047186	0.001633	0.001687	0.005655	0.000779	0.000896

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0490	0.4459	0.3745	2.6800e-003		0.0339	0.0339		0.0339	0.0339		535.0359	535.0359	0.0103	9.8100e-003	538.2153
NaturalGas Unmitigated	0.0490	0.4459	0.3745	2.6800e-003		0.0339	0.0339		0.0339	0.0339		535.0359	535.0359	0.0103	9.8100e-003	538.2153

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	4547.8	0.0490	0.4459	0.3745	2.6800e-003		0.0339	0.0339		0.0339	0.0339		535.0359	535.0359	0.0103	9.8100e-003	538.2153
Total		**0.0490**	**0.4459**	**0.3745**	**2.6800e-003**		**0.0339**	**0.0339**		**0.0339**	**0.0339**		**535.0359**	**535.0359**	**0.0103**	**9.8100e-003**	**538.2153**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	4.5478	0.0490	0.4459	0.3745	2.6800e-003		0.0339	0.0339		0.0339	0.0339		535.0359	535.0359	0.0103	9.8100e-003	538.2153
Total		**0.0490**	**0.4459**	**0.3745**	**2.6800e-003**		**0.0339**	**0.0339**		**0.0339**	**0.0339**		**535.0359**	**535.0359**	**0.0103**	**9.8100e-003**	**538.2153**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1476	4.0000e-005	4.8900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0105	0.0105	3.0000e-005		0.0112
Unmitigated	1.1476	4.0000e-005	4.8900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0105	0.0105	3.0000e-005		0.0112

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0255					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0105	0.0105	3.0000e-005		0.0112
Total	**1.1476**	**4.0000e-005**	**4.8900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0105**	**0.0105**	**3.0000e-005**		**0.0112**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1217					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.0255					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.5000e-004	4.0000e-005	4.8900e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0105	0.0105	3.0000e-005		0.0112
Total	**1.1476**	**4.0000e-005**	**4.8900e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0105**	**0.0105**	**3.0000e-005**		**0.0112**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

Energy Calculations

Construction Fuel Consumption- Year 1

Phase Name	Off-road Equipment Type	Amount	Usage Hours	Horsepower	Load Factor	Number of days	Diesel Fuel Usage
Site Preparation	Graders	1	24	187	0.41	2	184
Site Preparation	Rubber Tired Dozers	1	24	247	0.4	2	237
Site Preparation	Tractors/Loaders/Backhoes	1	24.00	97	0.37	2	86
Grading	Bore/Drill Rigs	1	24.00	221	0.50	4	530
Grading	Graders	1	24.00	187	0.41	4	368
Grading	Rubber Tired Dozers	1	24.00	247	0.40	4	474
Grading	Tractors/Loaders/Backhoes	1	24.00	97	0.37	4	172
Building Construction	Cranes	1	6.00	231	0.29	187	3,758
Building Construction	Forklifts	1	6.00	89	0.20	187	999
Building Construction	Generator Sets	1	8.00	84	0.74	187	4,650
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37	187	2,013
						TOTAL	13,051

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Hauling Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Site Preparation	8	0	0	2	16	0	0	10.80	7.30	20.00	172.8	0	—	6	0
Grading	10	0	0	4	40	0	0	10.80	7.30	20.00	432.00	0.00	—	15	0
Building Construction	20	8	0	187	3,740	1,496	0	10.80	7.30	20.00	40,392.00	10,920.80	—	1,443	2,070
													TOTAL	1,464	2,070

Construction Fuel Consumption– Year 2

Phase Name	Off-road Equipment Type	Amount	Usage Hours	Horsepower	Load Factor	Number of days	Diesel Fuel Usage
Building Construction	Cranes	1	6	231	0.29	13	261
Building Construction	Forklifts	1	6	89	0.2	13	69
Building Construction	Generator Sets	1	8.00	84	0.74	13	323
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37	13	140
Paving	Cement and Mortar Mixers	1	6.00	9	0.56	10	15
Paving	Pavers	1	6.00	130	0.42	10	164
Paving	Paving Equipment	1	8.00	132	0.36	10	190
Paving	Rollers	1	7.00	80	0.38	10	106
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37	10	144
Architectural Coating	Air Compressors	1	6.00	78	0.48	10	112
						TOTAL	1,194

Phase Name	Daily Worker Trip	Daily Vendor Trip	Daily Haul Trip	Days per Year	Total Worker Trips	Total Vendor Trips	Total Haul Trips	Worker Trip Length (miles)	Vendor Trip Length (miles)	Haul Trip Length (miles)	Total Worker Trip Length (miles)	Total Vendor Trip Length (miles)	Total Haul Trip Length (miles)	Total gallons of gasoline	Total gallons of diesel
Building Construction	20	8	0	13	260	104	0	10.80	7.30	20.00	2808	759.2	-	100	144
Paving	13	0	0	10	130	0	0	10.80	7.30	20.00	1,404.00	0.00	-	50	0
Architectural Coating	4	0	0	10	40	0	0	10.80	7.30	20.00	432.00	0.00	-	15	0
													TOTAL	166	144

EMFAC Input for Construction Calculations

Source: EMFAC2017 (v1.0.3) Emissions Inventory
Region Type: County
Region: Sacramento
Calendar Year: 2021
Season: Annual
Vehicle Classification: EMFAC2011 Categories
Units: miles/day for VMT, trips/day for Trips, tons/day for Emissions, 1000 gallons/day for Fuel Consumption

Region	CalYr	VehClass	MdlYr	Speed miles/hr	Fuel	Population vehicles	VMT miles/day	Trips trips/day	Fuel gas 1,000 gallons/day	Diesel gas 1,000 gallons/day	Miles per gallon	Gasoline miles per gallon	Diesel miles per gallon
Sacramento	2021	LDA	Aggregated	Aggregated	GAS	582,044	20,975,476	2,717,495	680.4	3.79	30.83	28.00	5.28
Sacramento	2021	LDT1	Aggregated	Aggregated	GAS	63,649	2,117,867	288,476	80.7	0.18	26.25		
Sacramento	2021	LDT2	Aggregated	Aggregated	GAS	204,601	7,087,055	945,088	294.1	1.14	24.09		
Sacramento	2021	T7 tractor construction	Aggregated	Aggregated	DSL	259	17,975	1,170	0.00	3.41	5.28		

Operational – Fuel Consumption (Sacramento Region, 2023 CalYr)

Veh Class	Class	MdlYr	Speed	Fuel	Population	VMT (mi/day)	Trips	Fuel Consumption (1,000 gal/day)	Fuel (gal/day)	mi/gal	CO_2_RUNEX (tons/day)	CO_2 (lb/day)	% of vehicle class EMFAC	% vehicle class CalEEMod	% vehicle class project	VMT by project vehicle class (mi/yr)	Gallons of fuel
HHDT	Truck	Aggregated	Aggregated	GAS	4.126049466	370.9548753	82.55399772	0.082755756	82.75575574	4.482526587	0.779803242	1,560	0.000446496	0.047186	2.10684E-05	1.263216351	0.281809004
HHDT	Truck	Aggregated	Aggregated	DSL	10487.52962	830442.7384	79463.17464	128.4708834	128470.8834	6.464054083	1338.471368	2,676,943	0.999553504	0.047186	0.047164932	2827.914972	437.4831855
LDA	Passenger	Aggregated	Aggregated	GAS	606308.3182	21470907.57	2835871.384	665.4181032	665418.1032	32.26679206	6133.406628	12,266,813	0.968028954	0.546645	0.529168187	31727.86618	983.2978167
LDA	Passenger	Aggregated	Aggregated	DSL	5931.129271	213255.1918	27679.16982	4.088383615	4088.383615	52.16124804	45.87348068	91,747	0.00961474	0.546645	0.00525585	315.1302369	6.041462748
LDA	Passenger	Aggregated	Aggregated	ELEC	11992.87168	495863.451	59658.61958	0	0	#DIV/0!	0	0	0.022356306	0.546645	0.012220963	732.7444901	0
LDT1	Truck	Aggregated	Aggregated	GAS	65368.82489	2148247.633	297348.0731	77.95506082	77955.06082	27.5575134	717.3326593	1,434,665	0.988741705	0.03589	0.03548594	2127.665978	77.20819898
LDT1	Truck	Aggregated	Aggregated	DSL	171.8027759	2906.858044	624.5733541	0.132639767	132.6397673	21.91543383	1.488277123	2,977	0.001337896	0.03589	4.80171E-05	2.879008392	0.131368989
LDT1	Truck	Aggregated	Aggregated	ELEC	520.3596655	21554.13651	2582.693036	0	0	#DIV/0!	0	0	0.009920399	0.03589	0.000356043	21.34763341	0
LDT2	Truck	Aggregated	Aggregated	GAS	210187.0401	7110545.533	970164.8507	277.9033637	277903.3637	25.58639607	2557.200925	5,114,402	0.993106042	0.197836	0.196472127	11780.07578	460.4038706
LDT2	Truck	Aggregated	Aggregated	DSL	1241.047612	49360.09086	6058.386505	1.285363939	1285.363939	38.4016459	14.4223545	28,845	0.006893958	0.197836	0.001363873	81.77510547	2.129468765
LDT2	Truck	Aggregated	Aggregated	ELEC	2017.989173	64372.67262	10165.33975	0	0	#DIV/0!	0	0	0.106659193	0.197836	0.021101028	1265.175445	#DIV/0!
LHDT1	Truck	Aggregated	Aggregated	GAS	16570.84786	539163.4195	246880.9426	64.08642368	64086.42368	8.413067676	599.7352697	1,199,471	0.893340807	0.020769	0.018553795	1112.448454	132.2286348
LHDT1	Truck	Aggregated	Aggregated	DSL	14242.93915	481067.9853	179158.2569	26.45912717	26459.12717	18.18155158	294.7439568	589,488	0.865591917	0.020769	0.017977479	1077.893657	59.28502043
LHDT2	Truck	Aggregated	Aggregated	GAS	2262.201873	74699.66463	33703.43723	10.13554171	10135.54171	7.370071259	94.87299417	189,746	0.134408083	0.005403	0.000726207	43.54191178	5.907936334
LHDT2	Truck	Aggregated	Aggregated	DSL	4802.260083	166508.7652	60406.3906	10.23389815	10233.89815	16.27031682	113.6810551	227,362	1	0.005403	0.005403	323.953074	19.91068015
MCY	Passenger	Aggregated	Aggregated	GAS	30303.87519	203769.6783	60607.75038	5.439457816	5439.457816	37.46139509	47.34170457	94,683	0.041139631	0.005655	0.000232645	13.94890565	0.372354143
MDV	Truck	Aggregated	Aggregated	GAS	150190.4674	4749353.976	681491.928	228.4181027	228418.1027	20.79237119	2098.041272	4,196,083	0.958860369	0.113293	0.108632168	6513.367518	313.2575625
MDV	Truck	Aggregated	Aggregated	DSL	3183.545596	120771.4496	15325.08903	4.182416763	4182.416763	28.87599596	46.92857439	93,857	0.765961961	0.113293	0.086778128	5203.043024	180.1857512
MDV	Truck	Aggregated	Aggregated	ELEC	1127.725787	36901.45816	5725.011233	0	0	#DIV/0!	0	0	0.234038039	0.113293	0.026514872	1589.77867	#DIV/0!
MH	Other	Aggregated	Aggregated	GAS	2990.83134	25478.2097	299.2027673	5.282504092	5282.504092	4.823131087	50.03733464	100,075	0.732594425	0.000896	0.000656405	39.3567073	8.159991216
MH	Other	Aggregated	Aggregated	DSL	1076.008878	9299.845971	107.6008878	0.942714401	942.7144006	9.864966489	10.57767443	21,155	0.267405575	0.000896	0.000239595	14.3656607	1.456230056
MHDT	Truck	Aggregated	Aggregated	GAS	2071.192563	97303.04219	41440.4208	20.40968443	20409.68443	4.767493712	190.327734	380,655	0.126838762	0.022328	0.002832056	169.8044067	35.61712232
MHDT	Truck	Aggregated	Aggregated	DSL	13275.28807	669836.5959	102370.8497	69.51135266	69511.35266	9.636362555	757.4914876	1,514,983	0.873161238	0.022328	0.019495944	1168.937817	121.3048815
OBUS	Bus	Aggregated	Aggregated	GAS	560.2050231	24124.38457	11208.5821	5.0980697	5098.0697	4.732062524	47.72801094	95,456	0.392097521	0.001633	0.000640295	38.39082269	8.112915351
OBUS	Bus	Aggregated	Aggregated	DSL	532.1705243	37402.10639	5089.370305	4.675134648	4675.134648	8.000220145	51.00790085	102,016	0.607902479	0.001633	0.000992705	59.52059131	7.439869182
SBUS	Bus	Aggregated	Aggregated	GAS	126.484672	6096.481673	505.9386881	0.635020485	635.0204855	9.600448823	5.639736496	11,279	0.15792036	0.000779	0.00012302	7.376030804	0.768300622
SBUS	Bus	Aggregated	Aggregated	DSL	1040.458767	32508.30405	12006.74991	4.062341856	4062.341856	8.00235559	41.28284687	82,566	0.84207964	0.000779	0.00065598	39.3312512	4.914959196
UBUS	Bus	Aggregated	Aggregated	GAS	202.3269907	15275.52487	809.307963	3.561692379	3561.692379	4.288838913	33.66329907	67,327	0.3196798	0.001687	0.0005393	32.33533876	7.539415542
UBUS	Bus	Aggregated	Aggregated	DSL	2.109856914	135.6226039	8.439427656	0.015578662	15.57866188	8.705664512	0.174799508	350	0.008800292	0.001687	1.48461E-05	0.89014206	0.102248606
UBUS	Bus	Aggregated	Aggregated	ELEC	0.002191142	0.046907578	0.00876457	0	0	#DIV/0!	0	0	0.000345749	0.001687	5.83278E-07	0.034972201	#DIV/0!
																Gasoline Sum	**2,033**
																Diesel Sum	**840**

Notes: 59,958 Project VMT (mi/yr) from CalEEMod output

Operational Energy and GHG emissions from Emergency Generator and Pump

Equipment	Value	Unit	Comments
Generator			
Apparent power	300	KVA	
Power Factor	0.75		Conservative assumption based on a standard generator of similar size
Actual Power	225	KW	
Working hours	24	Hours/day	
Energy consumption	540.00	MWh/year	Assumption: the emergency generator would be needed to run for 100 days
Energy consumption	1842.48	MMbtu/yr	
CO_2 emissions	35.7561	tons/year	
CH_4 emissions	0.0027	tons/year	
N_2O emissions	0.00027	tons/year	
Total CO_2e	**35.90406**	**tons/year**	**IPCC Fourth Assessment Report (Avg) (GWP - CH4 = 25 and N2O = 298)**
Pump			
Energy consumption	3000	kWh/day	Assumption from information provided by the client (24-hour operation at 1,500 gpm and 78% pump efficiency)
Total energy consumption by the facility	1095	MWh/year	
CO_2 emissions	72.505425	tons/year	
CH_4 emissions	0.005475	tons/year	
N_2O emissions	0.0005475	tons/year	
Total CO_2e	72.805455	tons/year	
Total CO_2e	**108.709515**	**tons/year**	

Appendix C

Special-Status Species List

Special-Status Plants Known to Occur in the Project Region and their Potential to Occur on the Project Site

Name	Federal Status[1]	State Status[1]	CRPR	Habitat	Potential to Occur in the Project Site
Big-scale balsamroot *Balsamorhiza macrolepis*	None	None	1B.2	Ultramafic. Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 115–4806 feet in elevation. Blooms March–June.	**Not expected to occur:** The project site is outside of the current known elevational range of this species.
Hispid salty bird's-beak *Chloropyron molle* ssp. *hispidum*	None	None	1B.1	Alkali playa, wetland. Meadows and seeps, playas, valley and foothill grassland. In damp alkaline soils, especially in alkaline meadows and alkali sinks with Distichlis. 3–509 feet in elevation. Blooms June–September.	**Not expected to occur:** The project site does not provide wetland habitat suitable for this species.
Dwarf downingia *Downingia pusilla*	None	None	2B.2	Wetland. Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 3–1,608 feet in elevation. Blooms March–May.	**Not expected to occur:** The project site does not provide wetland habitat suitable for this species.
Boggs Lake hedge-hyssop *Gratiola heterosepala*	None	None	1B.2	Wetland. Marshes and swamps (freshwater), vernal pools. Clay soils; usually in vernal pools, sometimes on lake margins. 33–7,792 feet in elevation. Blooms April–August.	**Not expected to occur:** The project site does not provide wetland habitat suitable for this species.
Northern California black walnut *Juglans hindsii*	None	None	1B.1	Riparian forest, riparian woodland. Few extant native stands remain; widely naturalized. Deep alluvial soil, associated with a creek or stream. 0–2100 feet in elevation. Blooms April–May.	**Not expected to occur:** No walnut trees were observed within the project site.
Ahart's dwarf rush *Juncus leiospermus* var. *ahartii*	None	None	1B.2	Valley and foothill grassland. Restricted to the edges of vernal pools in grassland. 98–328 feet in elevation. Blooms March–May.	**Not expected to occur:** The project site does not provide vernal pool edge habitat suitable for this species.
Red Bluff dwarf rush *Juncus leiospermus* var. *leiospermus*	None	None	1B.1	Chaparral, valley and foothill grassland, cismontane woodland, vernal pools, meadows and seeps. Vernally mesic sites. Sometimes on edges of vernal pools. 98–3363 feet in elevation. Blooms March–June.	**Not expected to occur:** The project site does not provide vernally mesic habitat suitable for this species.
Legenere *Legenere limosa*	None	None	1B.1	Vernal pools, wetland. In beds of vernal pools. 3–2,887 feet in elevation. Blooms April–June.	**Not expected to occur:** The project site does not provide vernal pool or wetland habitat suitable for this species.
Pincushion navarretia *Navarretia myersii* ssp. *myersii*	None	None	1B.1	Vernal pools, wetland. Clay soils within non-native grassland. 148–328 feet in elevation. Blooms April–May.	**Not expected to occur:** The project site does not provide vernal pool or wetland habitat suitable for this species.
Slender Orcutt grass *Orcuttia tenuis*	FT	SE	1B.1	Vernal pools, wetland. Often in gravelly substrate. 82–5,758 feet in elevation. Blooms May–September (October).	**Not expected to occur:** The project site does not provide wetland habitat suitable for this species.

Name	Federal Status[1]	State Status[1]	CRPR	Habitat	Potential to Occur in the Project Site
Sacramento Orcutt grass *Orcuttia viscida*	FE	SE	1B.1	Vernal pools, wetland. 49–279 feet in elevation. Blooms April–July (September).	**Not expected to occur:** The project site does not provide wetland habitat suitable for this species.
Sanford's arrowhead *Sagittaria sanfordii*	None	None	1B.2	Wetland. Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0–2,133 feet in elevation. Blooms May–October (November).	**Not expected to occur:** The project site does not provide perennial wetland habitat suitable for this species.

Notes: CRPR = California Rare Plant Rank; CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:
FE Endangered (legally protected by ESA)
FT Threatened (legally protected by ESA)

State:
SE Endangered (legally protected by CESA)

California Rare Plant Ranks:
1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat Ranks:
0.1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
0.2 Moderately threatened in California (20-80% occurrences threatened; moderate degree and immediacy of threat)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present within the project area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available within the project area; however, there are little to no other indicators that the species might be present.

Likely to occur: All of the species life history requirements can be met by habitat present on the site, and populations/occurrences are known to occur in the immediate vicinity.

Sources: CNDDB 2021; CNPS 2021.

Special-Status Wildlife Known to Occur in the Project Region and their Potential to Occur on the Project Site

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
Invertebrates				
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	None	Riparian scrub. Occurs only in the Central Valley of California, in association with blue elderberry (*Sambucus nigra* ssp. *caerulea*). Prefers to lay eggs in elderberries 2-8 inches in diameter; some preference shown for "stressed" elderberries.	**Not expected to Occur:** No elderberries are present on the project site.
Vernal pool fairy shrimp Branchinecta lynchi	FT	None	Valley and foothill grassland, vernal pool, wetland. Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**Not expected to Occur:** The project site does not support vernal pool or wetland habitat suitable for this species.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE	None	Valley and foothill grassland, vernal pool, wetland. Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	**Not expected to Occur:** The project site does not support vernal pool or wetland habitat suitable for this species.
Fish				
Delta smelt *Hypomesus transpacificus*	FT	SE	Aquatic, estuary. Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
Steelhead - Central Valley DPS pop. 11 *Oncorhynchus mykiss irideus*	FT	None	Aquatic. Sacramento/San Joaquin flowing waters. Populations in the Sacramento and San Joaquin rivers and their tributaries.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
Amphibians				
California tiger salamander *Ambystoma californiense*	FT	ST	Cismontane woodland, meadow and seep, riparian woodland, valley and foothill grassland, vernal pool, and wetlands. Central Valley DPS federally listed as threatened. Santa Barbara and Sonoma counties DPS federally listed as endangered. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
Western spadefoot *Spea hammondii*	None	SSC	Cismontane woodland, coastal scrub, valley and foothill grassland, vernal pool, and wetlands. Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
Reptiles				
Giant garter snake *Thamnophis gigas*	FT	ST	Marsh and swamp, riparian scrub, wetland. Prefers freshwater marsh and low gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species.
Western pond turtle *Actinemys marmorata*	None	SSC	Aquatic, artificial flowing waters, Klamath/north coast flowing waters, Klamath/north coast standing waters, marsh and swamp, Sacramento/San Joaquin flowing waters, Sacramento/San Joaquin standing waters, South coast flowing and standing waters. A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Not expected to Occur:** The project site does not support aquatic habitat suitable for this species
Birds				
Tricolored blackbird *Agelaius tricolor*	None	ST/SSC	Freshwater marsh, marsh and swamp, swamp, wetland. Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	**Not expected to Occur:** The project site does not support marsh habitat suitable for this species.
Burrowing owl *Athene cunicularia*	None	SSC	Coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran desert scrub, and valley and foothill grassland. Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	**Not expected to Occur:** The project site does not support habitat suitable for this species.
Swainson's hawk *Buteo swainsoni*	None	ST	Great Basin grassland, riparian forest, riparian woodland, valley and foothill grassland. Breeds in 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, or alfalfa or grain fields supporting rodent populations.	**Not expected to Occur:** The project site does not support nesting or foraging habitat suitable for this species.
White-tailed kite *Elanus leucurus*	None	FP	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous	**May occur:** The trees within the project site provide low quality suitable nesting habitat.

Name	Federal Status[1]	State Status[1]	Habitat	Potential to Occur in the Project Site
			woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	
Purple martin *Progne subis*	None	SSC	Broadleaved upland forest, lower montane coniferous forest. Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly, also in human-made structures. Nest often located in tall, isolated tree/snag.	**Not expected to Occur:** The project site does not support nesting habitat suitable for this species.
Bank swallow *Riparia riparia*	None	ST	Riparian scrub, riparian woodland. Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Not expected to Occur:** The project site does not support nesting habitat suitable for this species.

General references: Unless otherwise noted all habitat and distribution data provided by CNDDB.

Note: CNDDB = California Natural Diversity Database

[1] Legal Status Definitions

Federal:
FE Endangered (legally protected)
FT Threatened (legally protected)

State:
FP Fully protected (legally protected)
SSC Species of special concern (no formal protection other than CEQA consideration)
SE Endangered (legally protected)
ST Threatened (legally protected)

[2] Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present in the plan area due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available in the plan area; however, there are little to no other indicators that the species might be present.

Likely to occur: All of the species life history requirements can be met by habitat present on the site, and populations/occurrences are known to occur in the immediate vicinity.

Source: CNDDB 2020; USFWS 2020

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Sacramento County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. 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.

The following species are potentially affected by activities in this location:

Reptiles

NAME	STATUS
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final** critical habitat for this species. Your location is outside the critical habitat. 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 is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED,

	WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Lewis's Woodpecker Melanerpes lewis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Nuttall's Woodpecker Picoides nuttallii This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse Baeolophus inornatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Song Sparrow Melospiza melodia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
Spotted Towhee Pipilo maculatus clementae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10
Yellow-billed Magpie Pica nuttalli This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

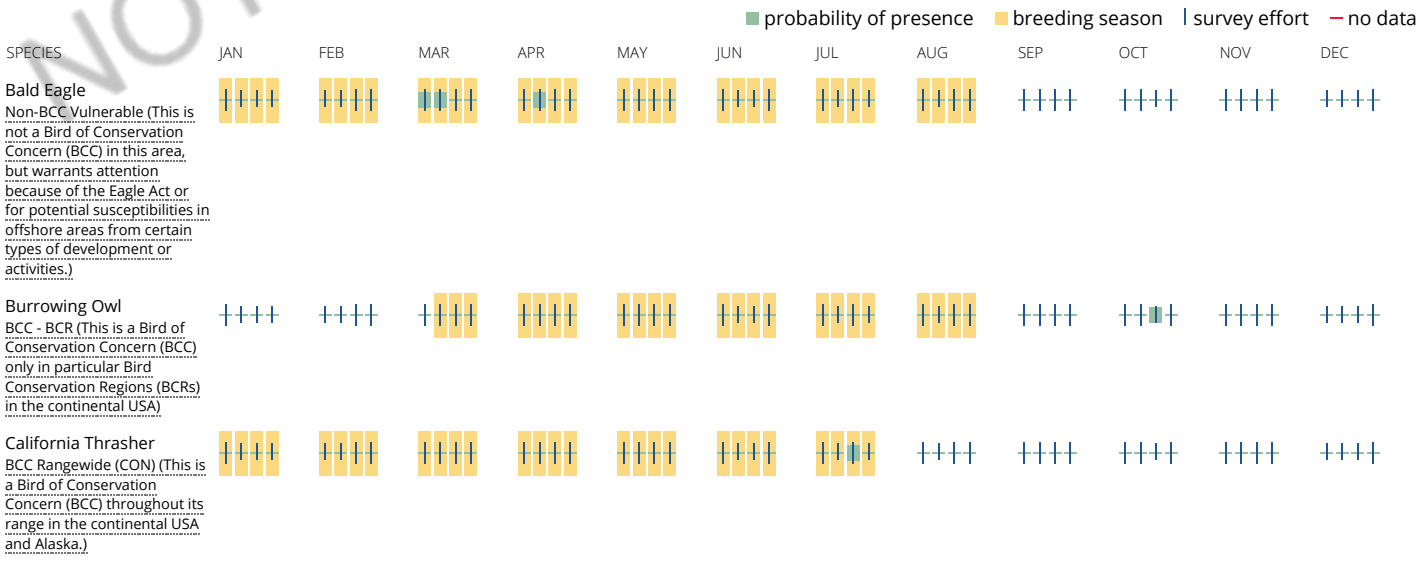
Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

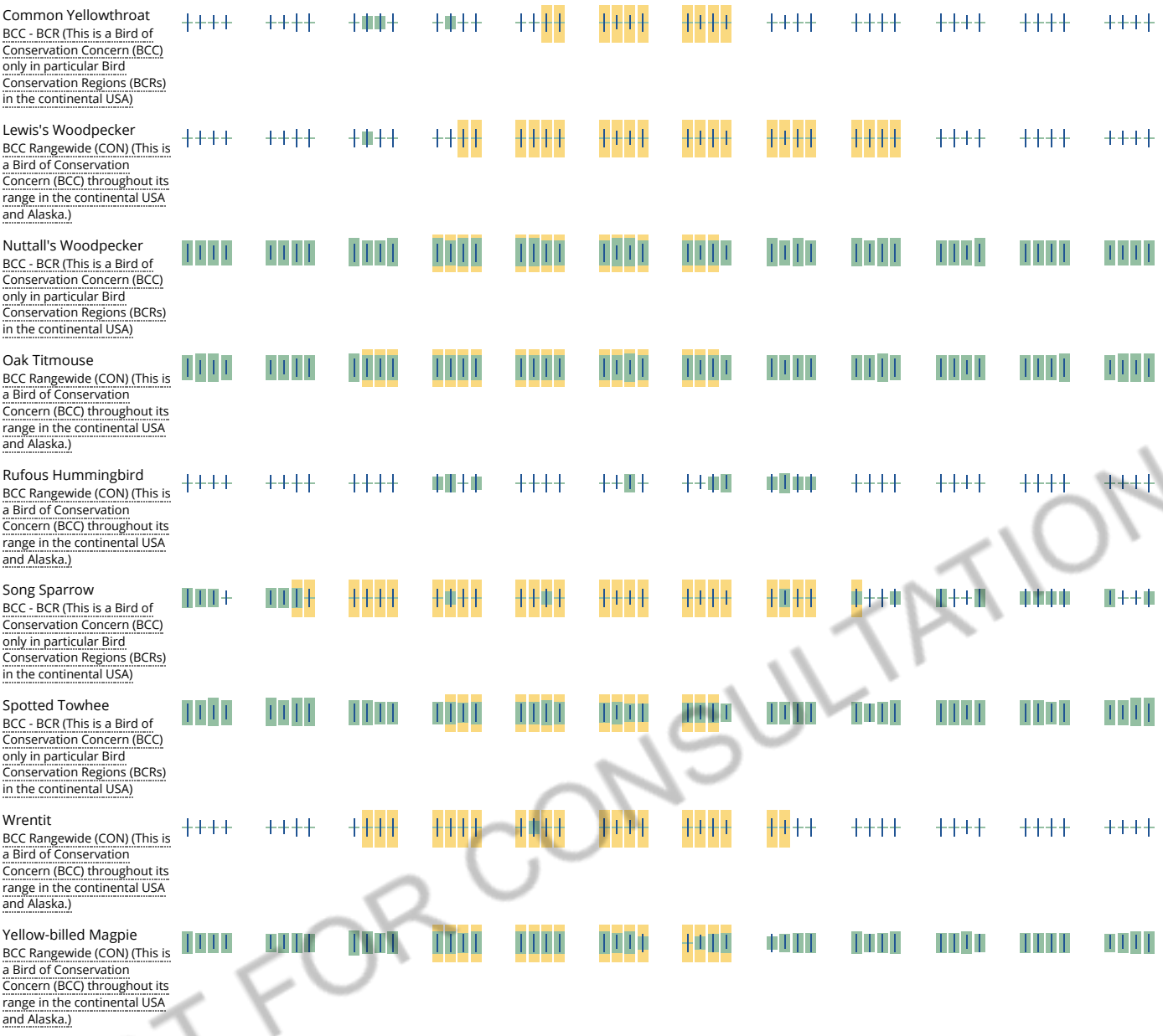
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: BIOS selection

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
Andrena subapasta An andrenid bee	IIHYM35210	None	None	G1G2	S1S2	
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Desmocerus californicus dimorphus valley elderberry longhorn beetle	IICOL48011	Threatened	None	G3T2	S3	
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Fritillaria agrestis stinkbells	PMLIL0V010	None	None	G3	S3	4.2
Gratiola heterosepala Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
Legenere limosa legenere	PDCAM0C010	None	None	G2	S2	1B.1
Lepidurus packardi vernal pool tadpole shrimp	ICBRA10010	Endangered	None	G4	S3S4	
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Northern Hardpan Vernal Pool Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
Oncorhynchus mykiss irideus pop. 11 steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	G5T2Q	S2	
Progne subis purple martin	ABPAU01010	None	None	G5	S3	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Sagittaria sanfordii Sanford's arrowhead	PMALI040Q0	None	None	G3	S3	1B.2

Record Count: 20

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

11 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B], Found in Quads 3812174, 3812173, 3812172, 3812164, 3812163, 3812162, 3812154 3812153 and 3812152;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Listing Status	Federal Listing Status	Habitats	Lowest Elevation	Highest Elevation
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2			• Chaparral • Cismontane woodland • Valley and foothill grassland	45 m	1555 m
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1			• Meadows and seeps • Playas • Valley and foothill grassland	1 m	155 m
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2			• Valley and foothill grassland (mesic) • Vernal pools	1 m	445 m
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	CE		• Marshes and swamps (lake margins) • Vernal pools	10 m	2375 m
Juncus leiospermus var. ahartii	Ahart's dwarf rush	Juncaceae	annual herb	Mar-May	1B.2			• Valley and foothill grassland (mesic)	30 m	229 m
Juncus leiospermus var. leiospermus	Red Bluff dwarf rush	Juncaceae	annual herb	Mar-Jun	1B.1			• Chaparral • Cismontane woodland • Meadows and seeps • Valley and foothill grassland • Vernal pools	35 m	1250 m
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1			• Vernal pools	1 m	880 m
Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	1B.1			• Vernal pools	20 m	330 m
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	1B.1	CE	FT	• Vernal pools	35 m	1760 m
Orcuttia viscida	Sacramento Orcutt grass	Poaceae	annual herb	Apr-Jul(Sep)	1B.1	CE	FE	• Vernal pools	30 m	100 m
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2			• Marshes and swamps (assorted shallow freshwater)	0 m	650 m

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 15 December 2020].

Appendix D

Noise Modeling Data

Construction Source Noise Prediction Model

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{max} dBA)
Multi-family residences west of the project site	220	68.1
Single-family residence north of the project site	160	71.7

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Auger Drill Rig	85	1

Ground Type	soft
Source Height	8
Receiver Height	5
Ground Factor[2]	0.63

Predicted Noise Level	L_{eq} dBA at 50 feet[3]
Auger Drill Rig	85.0

Combined Predicted Noise Level (L_{max} dBA at 50 feet)
85.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Table 4-26 from the Federal Transit Noise and Vibration Impact Assessment, 2018 (pg 86).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2018 (pg 176 and 177).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2018: pg 86); and

D = Distance from source to receiver.

Distance Propagation Calculations for Stationary Sources of Ground Vibration

KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.

— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

STEP 3A: Select the distance to the receiver.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
Caisson drilling	87	@	25	79.9	@	43

The Lv metric (VdB) is used to assess the likelihood for vibration to result in human annoyance.

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

STEP 3B: Select the distance to the receiver.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
Caisson drilling	0.089	@	25	0.492	@	8

The PPV metric (in/sec) is used for assessing the likelihood for the potential of structural damage.

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 185 of FTA 2018. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment Manual. FTA Report No. 0123. Washington, D.C. Accessed: December 20, 2020. Page Available:

https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf

Attenuation Calculations for Stationary Noise Sources

KEY:

Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Receptor	Reference Noise Level			Attenuation Characteristics				Exterior Noise Level at Receptor			Interior Noise Level at Receptor		
		noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)	noise level (dBA)	@	distance (ft)
electrical transformer (all cooling fans on)	Multi-family residences west of the project site	55.0	@	50	hard	13	10	0.00	47.4	@	120	23.4	@	120
electrical transformer (all cooling fans on)	Single-family residence north of the project site	55.0	@	50	hard	13	10	0.00	46.4	@	135	22.4	@	135
well pump	Multi-family residences west of the project site	74.0	@	50	hard	13	10	0.00	61.1	@	220	37.1	@	220
well pump	Single-family residence north of the project site	74.0	@	50	hard	13	10	0.00	63.9	@	160	39.9	@	160

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Calculation uses the distance value rather than reciever height to calculate varying noise levels at each building story.

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5, 2020.

Appendix E

Comment on IS/MND from
Sacramento Municipal Utility District

SMUD®

Sent Via E-Mail

June 28,2021

Sacramento Suburban Water District
Attn.: David Espinoza, P.E., Senior Engineer
3701 Marconi Avenue, Suite 100
Sacramento, CA 95821
despinoza@sswd.org

Subject: **Well 80 Walnut/Auburn | MND | 2021050639**

Dear Mr. Espinoza:

The Sacramento Municipal Utility District (SMUD) appreciates the opportunity to provide comments on the Mitigated Negative Declaration (MND) for the Well 80 Walnut/Auburn Project (Project, SCH 2021050639). SMUD is the primary energy provider for Sacramento County and the proposed Project area. SMUD's vision is to empower our customers with solutions and options that increase energy efficiency, protect the environment, reduce global warming, and lower the cost to serve our region. As a Responsible Agency, SMUD aims to ensure that the proposed Project limits the potential for significant environmental effects on SMUD facilities, employees, and customers.

It is our desire that the Project will acknowledge any impacts related to the following:

- Overhead and or underground transmission and distribution line easements. Please view the following links on smud.org for more information regarding transmission encroachment:
  - https://www.smud.org/en/Business-Solutions-and-Rebates/Design-and-Construction-Services
  - https://www.smud.org/en/Corporate/Do-Business-with-SMUD/Land-Use/Transmission-Right-of-Way
- Electrical load needs/requirements
- Energy Efficiency
- Climate Change
- Cumulative impacts related to the need for increased electrical delivery

More specifically, SMUD would like to have the following details related to the electrical infrastructure incorporated into the project description:

- Utility line routing
- The potential need to relocate and or remove any SMUD infrastructure that may be affected in or around the project area

SMUD would like to be involved with discussing the above areas of interest as well as discussing any other potential issues. We aim to be partners in the efficient and sustainable delivery of the proposed Project. Please ensure that the information included in this response is conveyed to the Project planners and the appropriate Project proponents.

Environmental leadership is a core value of SMUD, and we look forward to collaborating with you on this Project. Again, we appreciate the opportunity to provide input on this MND. If you have any questions regarding this letter, please do not hesitate to contact me at 916.732.6676, or by email at rob.ferrera@smud.org.

Sincerely,

Rob Ferrera
Environmental Services Specialist
Sacramento Municipal Utility District
6201 S Street
Sacramento, CA 95817

cc: Entitlements

From: David Espinoza
To: Suzanne Enslow
Cc: Bill DeBoer; Sydney Coatsworth
Subject: FW: RE: RE: Well 80 Walnut/Auburn | MND | 2021050639
Date: Friday, July 2, 2021 8:08:45 AM

Suzanne,

Please see below for infrastructure needs provided by SMUD.

Thanks,

David Espinoza, P.E. | Senior Engineer
Sacramento Suburban Water District
P: (916) 679-2886 C: (916) 416-5468

From: Rob Ferrera <Rob.Ferrera@smud.org>
Sent: Thursday, July 1, 2021 4:39 PM
To: David Espinoza <despinoza@sswd.org>
Subject: RE: RE: RE: Well 80 Walnut/Auburn | MND | 2021050639

Good afternoon David,

Appreciate the nudge… see the following…

Question: For the location 5334 Walnut Ave, are we going to need to add any new lines or poles to provide service? Are we going to be able to provide service off of existing?

Answer: Yes, a new pole and overhead line is likely needed to serve the proposed 300 kVA transformer. The line would need to cross from the west side of Walnut Avenue where the 12kV mainline is to the 5334 Walnut Avenue project site east of Walnut Avenue. The 12kV mainline has capacity for the proposed 300 kVA transformer.

Let me know if you would like to discuss.

Thanks,

Rob

Please note: I am working remotely in an effort to help reduce the spread of COVID-19. Please call my mobile phone if you need to get a hold of me. ~Take care

Rob Ferrera
(he/him/his – what's this?)
Environmental Management Specialist

Environmental Services
SMUD | Powering forward. Together.
m: 916.769.8241

Appendix F

Mitigation, Monitoring, and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM

INTRODUCTION

CEQA and the State CEQA Guidelines (PRC Section 21081.6 and State CEQA Guidelines Sections 15091[d] and 15097) require public agencies "to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval to mitigate or avoid significant effects on the environment." A Mitigation Monitoring and Reporting Program (MMRP) is required for the proposed project because the Initial Study/Mitigated Negative Declaration (IS/MND) identifies potential significant adverse impacts related to the project implementation, and mitigation measures have been identified to reduce those impacts. Adoption of the MMRP would occur along with adoption of the MND for the Well 80 Walnut/Auburn Project.

PURPOSE OF MITIGATION MONITORING AND REPORTING PROGRAM

This MMRP has been prepared to ensure that all required mitigation measures are implemented and completed in a satisfactory manner prior to implementation of the project. The attached table has been prepared to assist the responsible parties in implementing the mitigation measures. The table identifies the impact, mitigation measures, monitoring responsibility, mitigation timing, and provides space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the IS/MND.

ROLES AND RESPONSIBILITIES

Sacramento Suburban Water District (SSWD), the lead agency, will be responsible for implementing mitigation measures according to the specifications provided for each measure, as identified in the IS/MND and as listed in the MMRP table below.

Inquiries should be directed to:

Contact: David Espinoza
State Sacramento Suburban Water District
3701 Marconi Avenue
Sacramento, CA 95821
Phone: (916) 679-2886

SSWD is responsible for overall administration of the MMRP and for verifying that any contractors have completed the necessary actions for each measure.

REPORTING

The SSWD shall document and describe the compliance of the activity with the required mitigation measures either within the attached table or a separate monitoring documentation.

MITIGATION MONITORING AND REPORTING PROGRAM TABLE

The categories identified in the attached MMRP table are described below.

- Mitigation Measure – This column provides the verbatim text of the adopted mitigation measure.
- Implementation Responsibility – This column identifies the party responsible for implementing the mitigation measure.
- Timing – This column identifies the time frame in which the mitigation will be implemented.
- Verification – This column is to be dated and signed by the person (either project manager or his/her designee) responsible for verifying compliance with the requirements of the mitigation measure.

Mitigation Monitoring and Reporting Program

Mitigation Measures	Implementation Responsibility	Timing	Verification
Biological Resources			
Mitigation Measure 3.4-1: Conduct Focused Surveys for Special-Status Birds and Other Native Nesting Birds and Implement Protective Buffers SSWD shall implement the following measures to avoid the removal of active raptor nests, including white-tailed kite.			
▶ Trees slated for removal shall be removed during the period of September through January, to avoid the nesting season.	SSWD and a qualified botanist	September – January to avoid the nesting season	
▶ If trees are to be removed, or if construction activity (which includes clearing, grubbing, or grading) is to commence within 500 feet of nesting habitat during the nesting season, which is February through August, a survey for active bird nests shall be conducted by a qualified biologist no more than 14 days before construction or tree removal. Trees shall only be removed if no active nests are found.	SSWD and a qualified botanist	February – August, during the nesting season, no more than 14 days prior to construction,	
▶ If active nest(s) are found in the survey area, an appropriate non-disturbance buffer shall be established by a qualified biologist and maintained around the nest to prevent nest failure. CDFW guidelines recommend implementation of a buffer of 500 feet for raptors unless there is a species-specific buffer, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to adversely affect the nest. All construction activities shall be avoided within this buffer area until a qualified biologist determines that nestlings have fledged, or until September 1. Monitoring of the nest by a qualified biologist during and after construction activities will be required if the activity has potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.	SSWD and a qualified botanist	Prior to and during construction	

Mitigation Measures	Implementation Responsibility	Timing	Verification
Mitigation Measure 3.4-2: Identify Oak Trees and Protect in Place or Compensate for Removal SSWD shall implement the following measures to avoid, minimize, and compensate for impacts to valley oak (Quercus lobata) trees due to the Well 80 project.			
▶ The location of all trees to be retained shall be shown on all site plans (e.g., site grading, drainage, and utility plans).	SSWD and a qualified arborist	Prior to removal of trees	
▶ A tree survey shall be conducted by a qualified arborist prior to removal of any trees within the project site. In accordance with the California Oak Woodlands Conservation Act (California PRC Section 21083.4), the arborist survey shall identify all oak trees of five inches or more in diameter at dbh. The arborist survey shall also identify all native and nonnative trees on site measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.			
▶ Prior to pruning or removal of any Heritage Trees protected by the Sacramento County Tree Preservation Ordinance, SSWD shall obtain a permit from the County. Pruning shall be done by a certified arborist or certified tree worker in accordance with the best management practices for pruning.	SSWD and a qualified arborist	Prior to any pruning or removal of any Heritage Trees	
▶ Prior to ground disturbing activities, SSWD shall place a 4-foot-tall exclusion fence (i.e., brightly colored orange snow fence) at least 2 feet outside the drip line of the valley oak trees to be retained that are located adjacent to any grading, underground utility, or other developmental activity.	SSWD and a qualified arborist	Prior to ground disturbing activities	
▶ For those oak trees that cannot be avoided, SSWD shall either: (a) replace the valley oak trees in-kind in accordance with the established tree planting specifications, the combined diameter of which shall equal the combined diameter of the trees removed, or (b) contribute funding to the Sacramento Tree Foundation's Greenprint program in an amount proportional to the valley oak tree canopy lost due to the project. The tree canopy loss shall be determined by a certified arborist.	SSWD and a qualified arborist	When oak tree removal occurs	
Cultural and Tribal Cultural Resources			
Mitigation Measure 3.5-1: Protection of Known and Unknown Archaeological Resources The following should be implemented during any ground-disturbing activities associated with project construction:			
▶ In the event that unknown buried cultural deposits (e.g., prehistoric stone tools, milling stones, historic glass bottles, foundations, cellars, privy pits) are encountered during project construction, all ground-disturbing activity within 30 feet of the resources shall be halted and a qualified professional archaeologist	SSWD, construction contractor, and qualified archaeologist	During construction	

Mitigation Measures	Implementation Responsibility	Timing	Verification
(36 Code of Federal Regulations [CFR] 61) and appropriate Native American tribal representative shall be notified immediately and retained to assess the significance of the find. Construction activities could continue in other areas. ▶ If the find is determined to be significant by the qualified archaeologist or Native American tribe (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery. ▶ If the qualified archaeologist determines the archaeological material to be Native American in nature, the SSWD shall contact the culturally affiliated Native American tribe for their input on the preferred treatment of the find.	SSWD and qualified archaeologist SSWD and qualified archaeologist	During construction During construction	
Noise			
3.13-1: Reduce Noise Generated by the Water Pump The well pump shall be fully enclosed so as to provide at approximately 14 dB of sound attenuation to ensure that County nighttime noise standards for non-transportation noise sources are not exceeded at nearby noise-sensitive land uses (50 dB L_{eq} for outdoor areas and 35 dB L_{eq} for indoor areas). The design of the enclosure shall be reviewed and approved by a qualified acoustical professional prior to installation of the enclosure, and the effectiveness of the enclosure shall be confirmed by a qualified acoustical professional after its installation.	SSWD, construction contractor, and qualified acoustical professional	During and after installation of the well pump	
Tribal Cultural Resources			
Mitigation Measure 3.18-1: Protection of Known and Unknown Archaeological Resources See Mitigation Measure 3.5-1, which shall be implemented during any ground-disturbing activities associated with project construction.	SSWD and qualified archaeologist	During construction	

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