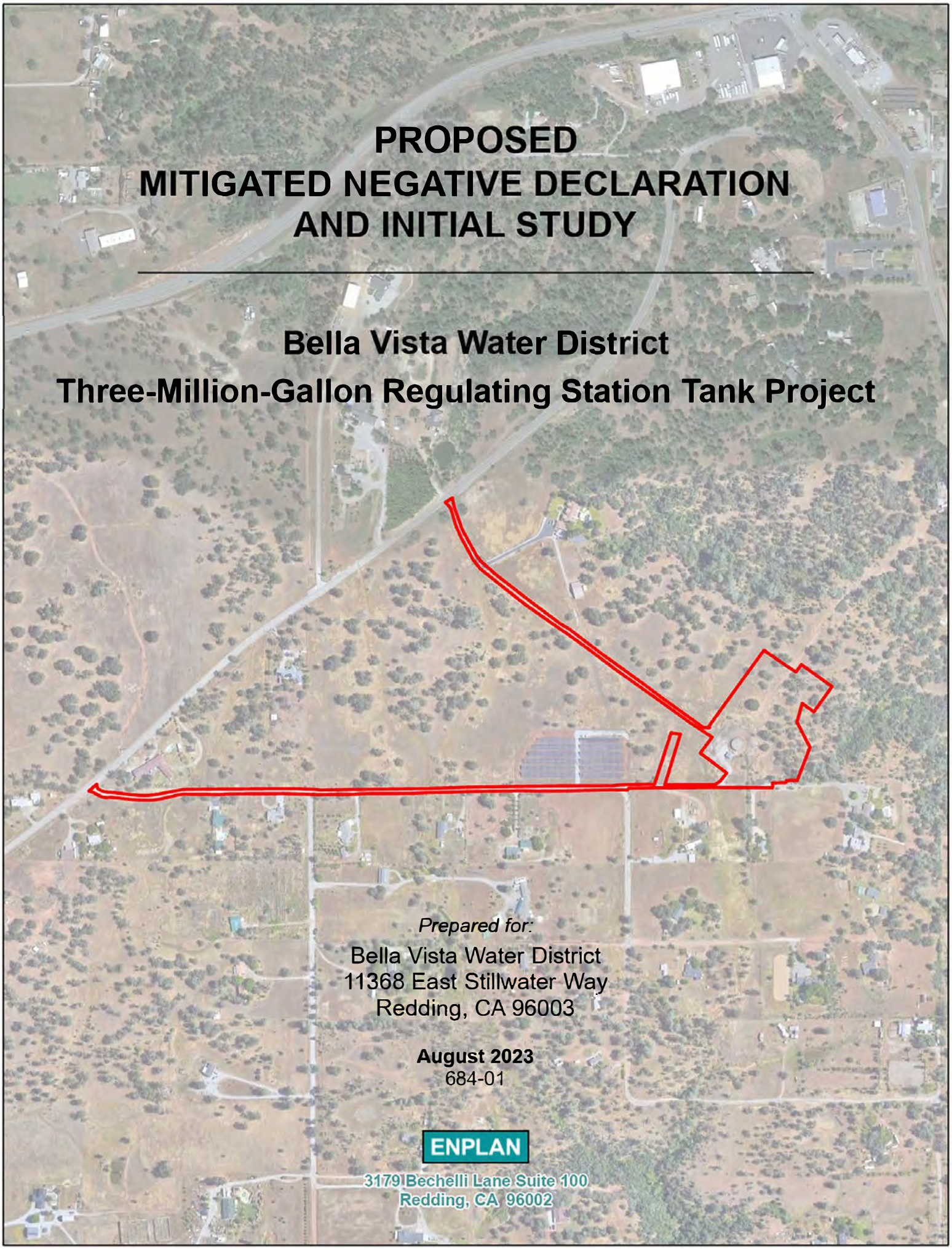
PROPOSED
MITIGATED NEGATIVE DECLARATION
AND INITIAL STUDY

Bella Vista Water District
Three-Million-Gallon Regulating Station Tank Project



Prepared for:

Bella Vista Water District
11368 East Stillwater Way
Redding, CA 96003

August 2023
684-01

ENPLAN
3179 Bechelli Lane Suite 100
Redding, CA 96002

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DRAFT MITIGATED NEGATIVE DECLARATION

LEAD AGENCY:	Bella Vista Water District
PROJECT PROPONENT:	Bella Vista Water District
PROJECT NAME:	**Three-Million-Gallon Regulating Station Tank Project**
PROJECT SUMMARY:	The proposed project includes improvements to the Bella Vista Water District's (BVWD) water system. Improvements include constructing a new three-million-gallon (MG) above-ground water tank and appurtenances; installing a new six MG per day pump station and electrical controls room; modifying piping in the Regulating Station vault; installing compacted Class II aggregate base throughout the water tank site; installing new waterlines and piping; relocating existing Pacific Gas and Electric (PG&E) power poles and overhead powerlines and extending electrical service to the water tank; installing new fencing around the perimeter of the site; completing repairs to Hidden Acres Road; and installing supervisory control and data acquisition (SCADA) systems at the new tank site and three existing BVWD groundwater well sites. The purpose of the proposed project is to increase water storage and improve operational efficiency in the water supply and distribution system.
LOCATION:	The project is located within the unincorporated community of Bella Vista in Shasta County, generally northeast of the City of Redding and southeast of Lake Shasta. *See **Figure 1** of the Initial Study.*

Findings / Determination

As documented in the Initial Study, project implementation could result in temporarily increased air emissions, possible impacts on special-status wildlife species, disturbance of nesting birds (if present), loss of trees, the introduction and spread of noxious weeds during construction, possible impacts on wetlands and/or other waters of the U.S./State, impacts on cultural resources and tribal cultural resources (if present), impacts on paleontological resources, and temporarily increased noise and vibration levels.

Design features incorporated into the project would avoid or reduce certain potential environmental impacts, as would compliance with existing regulations and permit conditions. Remaining impacts can be reduced to levels that are less than significant through implementation of the mitigation measures presented in Section 1.10 of the Initial Study. Because the BVWD will adopt mitigation measures as conditions of project approval and will be responsible for ensuring their implementation, it has been determined that the project will not have a significant adverse impact on the environment.

Final Mitigated Negative Declaration approved by the Bella Vista Water District on _____, 2023 by Resolution _____.

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INITIAL STUDY

BELLA VISTA WATER DISTRICT

THREE-MILLION-GALLON REGULATING STATION TANK PROJECT

SHASTA COUNTY, CALIFORNIA

LEAD AGENCY:

BELLA VISTA WATER DISTRICT
11368 E. STILLWATER WAY • REDDING, CALIFORNIA 96003-9510
TELEPHONE (530) 241-1085 • FAX (530) 241-8354

11368 East Stillwater Way
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PREPARED BY:

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August 2023

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FIGURES

TABLES

APPENDICES

SECTION 1.0 INTRODUCTION

1.1 PROJECT SUMMARY

Project Title:	**Bella Vista Water District 3-Million-Gallon Regulating Station Tank Project**
Lead Agency Name and Address:	**Bella Vista Water District** 11368 East Stillwater Way Redding, CA 96003
Contact Person and Phone Number:	**David Coxey, General Manager** Bella Vista Water District 530.241.1085 dcoxey@bvwd.org
Lead Agency's Environmental Consultant:	**ENPLAN** 3179 Bechelli Lane, Suite 100 Redding, CA 96002

The proposed project includes improvements to the Bella Vista Water District's (BVWD or District) water system, including constructing a new three-million-gallon (MG) above-ground water tank and appurtenances; installing a new six-MG-per-day pump station and electrical controls room; modifying piping in the Regulating Station vault; installing compacted Class II aggregate base (AB) throughout the water tank site; installing new waterlines and piping; relocating existing Pacific Gas and Electric (PG&E) power poles and overhead powerlines and extending electrical service to the water tank; installing new fencing around the perimeter of the site; repairing/restoring Hidden Acres Road as necessary following construction; and installing supervisory control and data acquisition (SCADA) systems at the new tank site and three existing BVWD groundwater well sites. The purpose of the proposed project is to increase water storage and improve operational efficiency in the water supply and distribution system.

For purposes of this Initial Study, "study area" and "project area" shall mean the project footprint, which includes access roads, staging areas, and areas in which improvements are proposed.

1.2 PURPOSE OF STUDY

The Bella Vista Water District (BVWD or District), as Lead Agency, has prepared this Initial Study to provide the general public and interested public agencies with information about the potential environmental impacts of the proposed 3-Million-Gallon Regulating Station Tank Project (project). Details about the proposed project are included in Section 3.0 (Project Description) of this Initial Study.

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (as amended), codified in California Public Resources Code (PRC) §21000 et seq., and the State CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3. Pursuant to these regulations, this Initial Study identifies potentially significant impacts and, where applicable, includes mitigation measures that would reduce all identified environmental impacts to less-than-significant levels. This Initial Study supports a Mitigated Negative Declaration (MND) pursuant to CEQA Guidelines §15070.

The District has received funding through the U.S. Bureau of Reclamation's (USBR) WaterSMART Drought Response Program. Therefore, this Initial Study has been prepared to address certain federal environmental regulations (federal cross-cutters), including regulations guiding the General Conformity Rule for the Clean Air Act (CAA), the federal Endangered Species Act (FESA), and the National Historic Preservation Act (NHPA). These requirements are addressed in Section 4.3 (Air Quality), Section 4.4 (Biological Resources), and Section 4.5 (Cultural Resources) of this Initial Study.

1.3 EVALUATION TERMINOLOGY

The environmental analysis in Section 4.0 is patterned after the Initial Study Checklist recommended in the State CEQA Guidelines. For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the proposed project. To each question, there are four possible responses:

- **No Impact.** The proposed project will not have any measurable environmental impact on the environment.
- **Less-Than-Significant Impact.** The proposed project has the potential to impact the environment; however, this impact will be below established thresholds of significance.
- **Potentially Significant Impact Unless Mitigation Incorporated.** The proposed project has the potential to generate impacts which may be considered a significant effect on the environment; however, mitigation measures or changes to the proposed project's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact**. The proposed project will have significant impacts on the environment, and additional analysis is required to determine if it is feasible to adopt mitigation measures or project alternatives to reduce these impacts to less than significant levels.

1.4 ORGANIZATION OF THE INITIAL STUDY

This document is organized into the following sections:

Section 1.0: **Introduction:** Describes the purpose, contents, and organization of the document and provides a summary of the proposed project.

Section 2.0: **CEQA Determination:** Identifies the determination of whether impacts associated with development of the proposed project are significant, and what, if any, additional environmental documentation may be required.

Section 3.0: **Project Description:** Includes a detailed description of the proposed project.

Section 4.0: **Environmental Impact Analysis (Checklist):** Contains the Environmental Checklist from CEQA Guidelines Appendix G with a discussion of potential environmental effects associated with the proposed project. Mitigation measures, if necessary, are noted following each impact discussion.

Section 5.0: **List of Preparers**

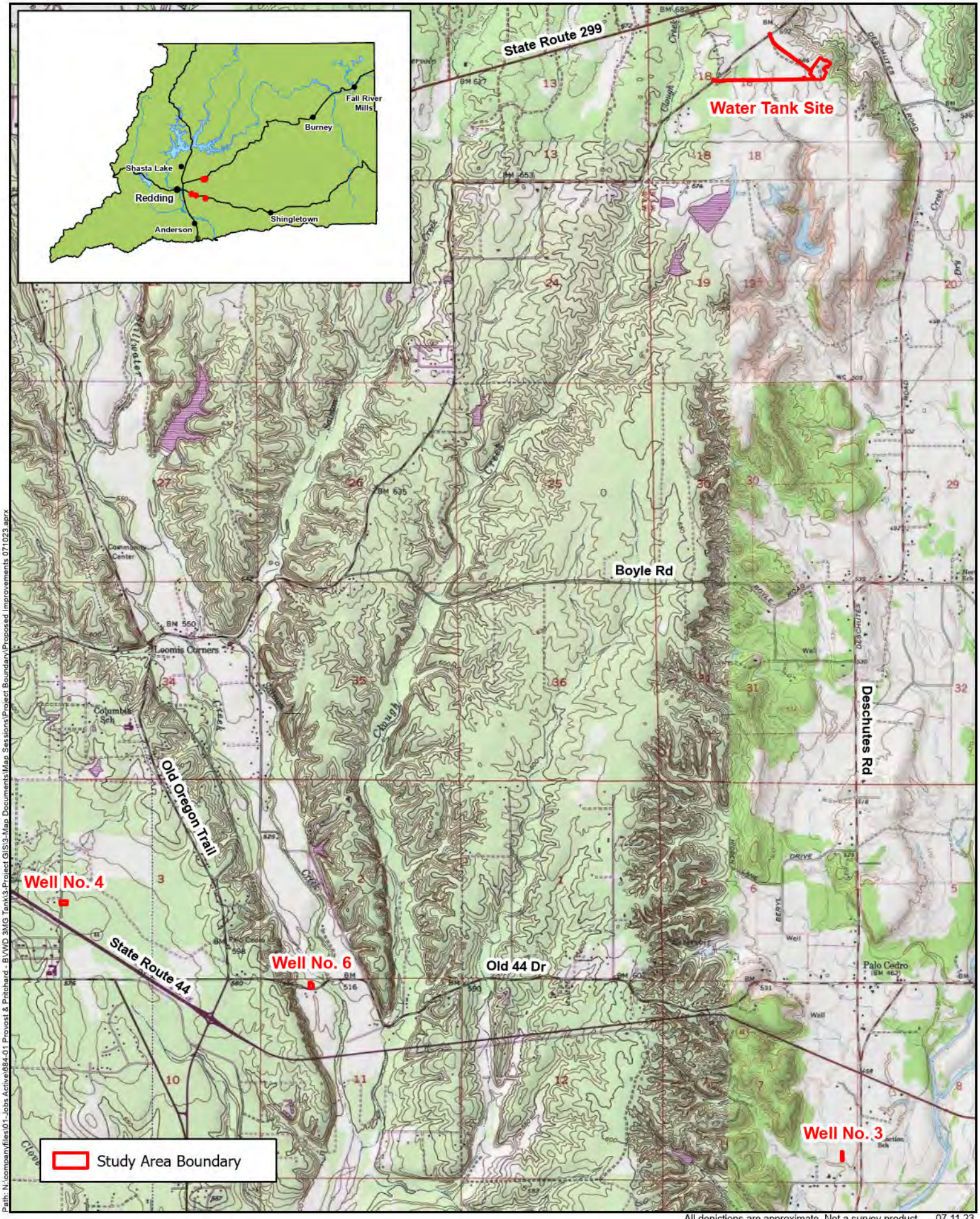
Section 6.0: **Abbreviations and Acronyms**

Appendices: Contains information to supplement Section 4.0.

1.5 PROJECT LOCATION

The proposed project is located within the unincorporated community of Bella Vista in Shasta County; approximately four miles northeast of the City of Redding and six miles southeast of the City of Shasta Lake. **Figure 1**, Project Location and Vicinity Map show the general locations of the Water Tank Site, staging areas, Hidden Acres Road, and well improvements. **Figure 2** is a Project Overview Map of the Water Tank Site. **Figure 3** is a Site Plan for the Water Tank Site.

Water Tank Site: The proposed water tank would be located north of Hidden Acres Road, adjacent to the existing USBR-owned Regulating Station in Section 18, Township 32 North, Range 3 West of the U.S. Geological Survey (USGS) Bella Vista 7.5-minute quadrangle. Improvements would occur on District-owned land (Assessor's Parcel Number [APN] 061-470-047) and USBR-owned land (APN 061-470-014). Staging would occur on a portion of District-owned land (APN 061-470-047), privately-owned land (APN 061-470-093), and within public utility easements. The Water Tank Site is approximately eight acres. Latitude: 40˚37'49.83" N; Longitude: 122˚14'29.95" W.



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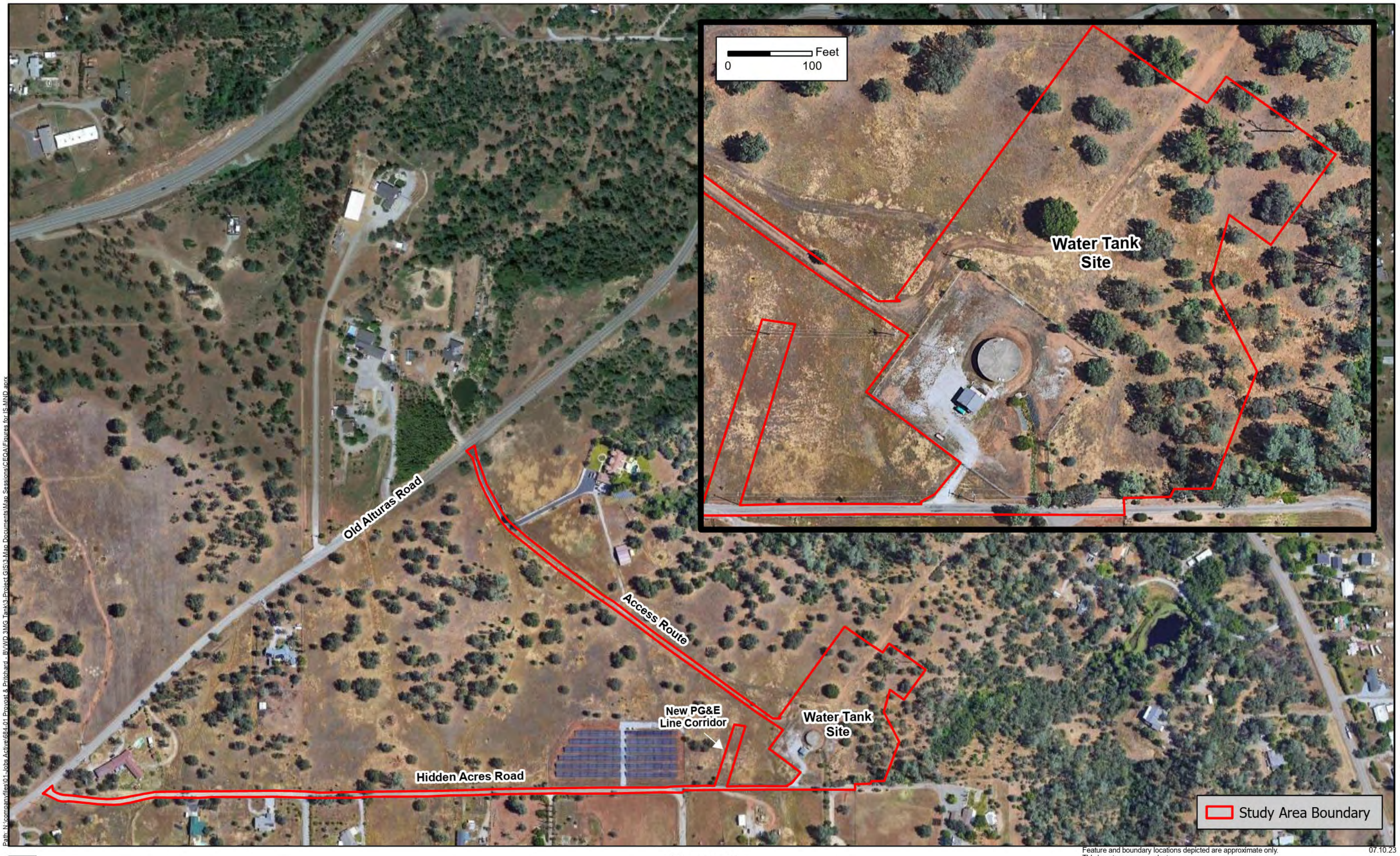
All depictions are approximate. Not a survey product. 07.11.23

0 Feet 3,200

Figure 1

Vicinity and Location Map

ENPLAN



Feature and boundary locations depicted are approximate only.
This is not a survey product.

07.10.23

ENPLAN

Figure 2

Water Tank Site Overview

LEGEND

- EXISTING GRAVEL ROAD
- CONCRETE LINING, SIDEWALK, FOUNDATION, OR CONCRETE PAD
- RIPRAP
- 6" THICK CLASS II AB COMPACTED TO 95% RD OVER NATIVE SOIL SCARIFIED 6" DEEP AND COMPACTED TO 95% RD
- 3" THICK CLASS II AB COMPACTED TO 95% RD OVER NATIVE SOIL SCARIFIED 6" DEEP AND COMPACTED TO 95% RD

PREFERRED CONSTRUCTION STAGING AREA
(1 ACRE)

ALTERNATE CONSTRUCTION STAGING AREA
(0.75 ACRE)

404'

125'

245'

162'

PIPELINE EASEMENT

PIPELINE EASEMENT

PIPELINE EASEMENT

PIPELINE EASEMENT

MAIN ZONE PUMP STATION AND ELECTRICAL CONTROLS ROOM

ELECTRICAL TRANSFORMER

EASEMENT

(E) 50'Ø WATER TANK

MODIFY (E) REGULATION STATION TANK OVERFLOW

24"Ø DESCHUTES ZONE SUPPLY LINE VALVE VAULT

3 MG WATER STORAGE TANK

3MG TANK
FINISH FLOOR ELEV.: 681.0±
TANK DIAMETER: 120'±
TANK HEIGHT: 55'±
SEE SHEET P-1

APPROXIMATE DAYLIGHT LINE

CONCRETE STAIRS

SUMP

MODIFY (E) PIPING AND REGULATION VAULT

NEW PG&E ELECTRICAL POWER POLE

MANHOLE WITH GRATED TOP

RELOCATED PG&E OVERHEAD ELECTRICAL

CONTRACTOR MAY TEMPORARILY REMOVE (E) GATE AND FENCE FOR CONSTRUCTION ACCESS. REMOVED GATE AND FENCE SHALL BE REPLACED AFTER CONSTRUCTION IS COMPLETE

OVERFLOW HEADWALL AND CONCRETE CHANNEL LINING

FILL LINE VALVE/METER PAD

CHAINLINK FENCE

DISTRICT PROPERTY LINE

WIDEN VEHICLE ACCESS DRIVE AS NEEDED FOR CONSTRUCTION ACTIVITIES

OVERFLOW WASTEWAY ROCK SLOPE PROTECTION

EDGE OF GRAVEL SURFACE YARD AND VEHICLE TRAVEL WAY (TYP)

12-FT WIDE CHAIN LINK GATE

SECONDARY VEHICLE SITE ACCESS

HIDDEN ACRES RD

SCALE IN FEET
0 15 30 60

Figure 3
Site Plan - Water Tank Site

60% PRELIMINARY
NOT FOR CONSTRUCTION
6/14/2023

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER — BRICE STIPE — No. 75956 — STATE OF CALIFORNIA
FOR REVIEW ONLY

DATE SIGNED: _____

WATER STORAGE TANK
BELLA VISTA WATER DISTRICT
REDDING, CA
CIVIL

SITE PLAN

PROVOST & PRITCHARD
Consulting Engineers
Are Employee Owned Company
1234 H STREET, SUITE 105
CLOVIS, CALIFORNIA 93611-9166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: B STIPE
LICENSE NO: 75956
DRAFTED BY: JMN
CHECKED BY:
DATE: 6/14/2023
JOB NO: 201022004
PROJECT NO:
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C-2
10 OF 54

8/8/2023 11:44 AM G:\Bella Vista WD-20\10\20\1022004-3MG Water Tank Eng Srvcs\300 CAD\390 CAD Transfer\Outbox\2023-0807 Figure\C-2 SITE PLAN.dwg - Brice Black

Well 3 Site (Figure 4): Well 3 is located at 21931 Gilbert Drive, APN 059-360-033, in the unincorporated community of Palo Cedro, west of Deschutes Road in Section 7, Township 31 North, Range 3 West of the USGS Palo Cedro 7.5-minute quadrangle. Latitude: 40˚33'04.11" N; Longitude: 122˚14'24.48" W.

Well 4 Site (Figure 5): Well 4 is located at 2605 Abernathy Lane, APN 109-040-042, in the City of Redding, generally north of State Highway 44 in Section 3, Township 31 North, Range 4 West of the USGS Enterprise 7.5-minute quadrangle. Latitude: 40˚34'09.59" N; Longitude: 122˚18'52.49" W.

Well 6 Site (Figure 6): Well 6 is located at 20620 Old 44 Drive, APN 111-130-028, in an unincorporated area at the eastern Redding City limit line, east of Old Oregon Trail and west of Brandy Lane, in Section 11, Township 31 North, Range 4 West of the USGS Enterprise 7.5-minute quadrangle. Latitude: 40˚33'48.35" N; Longitude: 122˚17'27.07" W.

1.6 ENVIRONMENTAL SETTING

General Plan Designations:	**Water Tank Site:** Rural Residential A (R-A) **Hidden Acres Road:** R-A **Well No. 3 Site:** Commercial (C) **Well No. 4 Site:** Public Facilities or Institutional (PF-I) **Well No. 6 Site:** Open Space (OS)
Zoning:	**Water Tank Site:** Rural Residential (R-R) **Hidden Acres Road:** Rural Residential – Mobile Home (R-R-T) **Well No. 3 Site:** Commercial-Light Industrial/Design Review (C-M-DR) **Well No. 4 Site:** Public Facility (PF) **Well No. 6 Site:** OS
Surrounding Land Uses:	**Water Tank Site:** Land uses surrounding the Water Tank Site include undeveloped land to the north, east, and west. The nearest residence to areas on the Water Tank Site in which improvements would occur is ±225 feet south. **Hidden Acres Road:** There are single-family residences adjacent to Hidden Acres Road. The nearest residences are ±60 feet from the roadway. **Well No. 3 Site:** Well No. 3 site is located off of Gilbert Drive within a commercial storage unit facility and is situated between two storage buildings. The nearest residences are located ±360 feet to the south. **Well No. 4 Site:** Land uses surrounding the Well No. 4 site include the Redding electric substation to the north, storage units to the west, and State Highway 44 to the south. **Well No. 6 Site:** Land uses surrounding the Well No. 6 site are residential properties to the west, Old 44 Drive to the south, and Stillwater Creek to the north and east.
Topography:	Elevations at the Water Tank Site and Hidden Acres Road are approximately 670 feet above sea level. Elevations at Well No. 3 are approximately 440 feet above sea level. Elevations at Well No. 4 are approximately 565 feet above sea level. Elevations at Well No. 6 are approximately 500 feet above sea level. The tank site is generally flat, and the overall topographical gradient slopes gradually downward toward the east and northeast. Hidden Acres Road, and the three well sites are generally flat.
Plant Communities/Wildlife Habitats:	Habitat types in the study area include oak woodland and urban. Representative trees and shrubs in the oak woodland include blue oak and interior live oak, gray pine, white-leaf manzanita, common manzanita, buckbrush, and coffeeberry, interspersed with a variety of annual grasses. The urban community includes paved and unpaved road corridors and existing structures in the study area. *See Section 4.4 (Biological Resources).*
Climate:	The study area is characterized by a Mediterranean climate with cool, wet winters and hot, dry summers. The average annual temperature is about 75 degrees Fahrenheit (°F). Monthly mean maximum temperatures range from a high of 95° F in July to a low of 31° F in January. Daily high temperatures commonly exceed 100° F during the summer. Precipitation at the nearby Redding Municipal Airport is about 33 to 34 inches per year. Most of the rainfall occurs between October and May.

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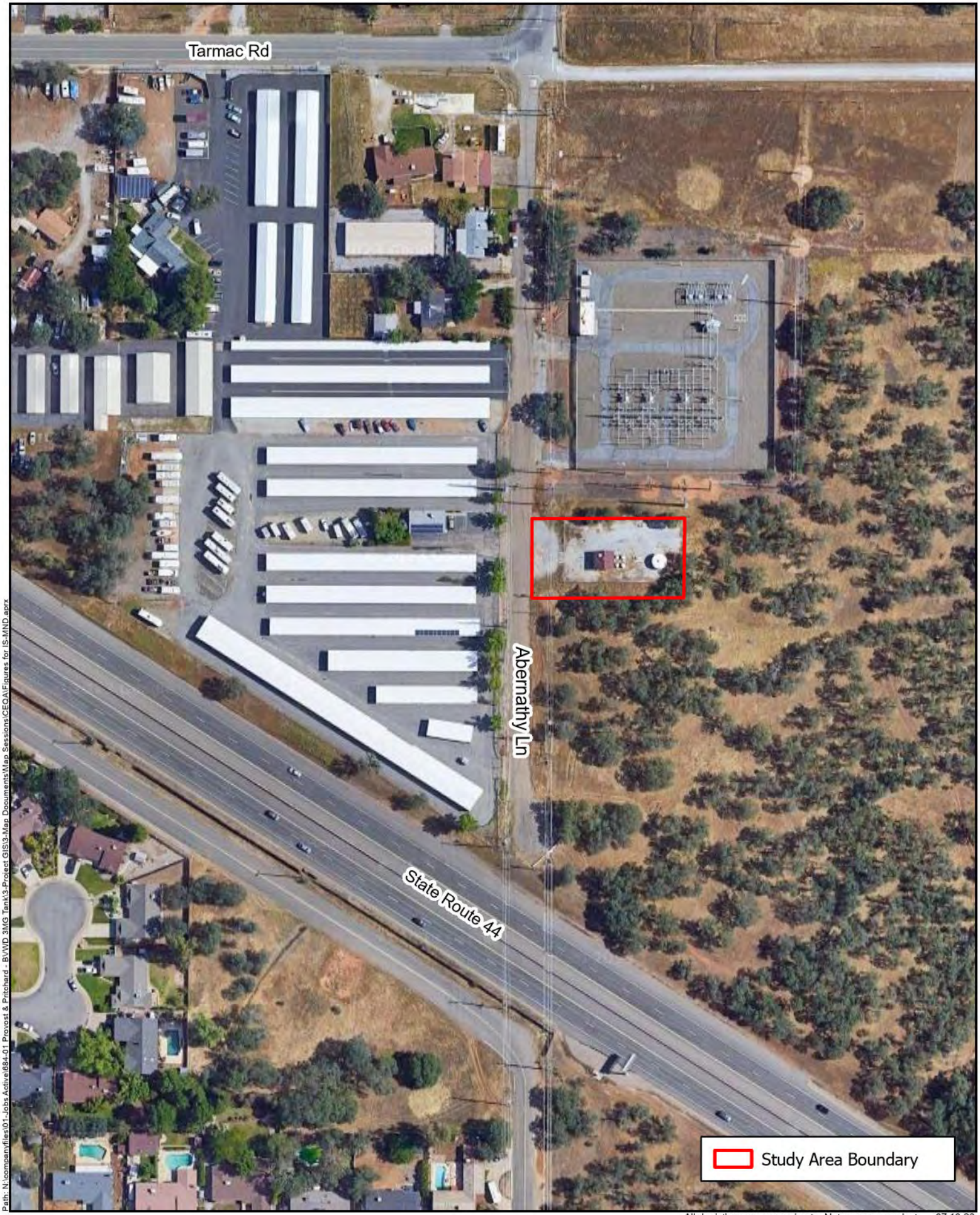
All depictions are approximate. Not a survey product. 07.10.23

0 150 Feet

Figure 4

Well 3 Location

ENPLAN



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All depictions are approximate. Not a survey product. 07.10.23

0 150 Feet

Figure 5

Well 4 Location

ENPLAN

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All depictions are approximate. Not a survey product. 07.10.23

0 100 Feet

Figure 6

Well 6 Location

ENPLAN

1.7 TRIBAL CULTURAL RESOURCES CONSULTATION

Public Resources Code (PRC) §21084.2 (Assembly Bill [AB 52], 2014) establishes that *"a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."* Pursuant to PRC §21080.3.1, in order to determine whether a project may have such an effect, a lead agency is required to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if the tribe requested to be informed through formal notification of proposed projects in the geographical area; and the tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation. According to the District, as of July 31, 2023, no tribes have requested formal notification of proposed projects in the geographical area.

As discussed in Section 4.5, on January 11, 2023, ENPLAN contacted Native American tribes that were identified by the Native American Heritage Commission (NAHC) with a request to provide comments on the proposed project.

Follow-up correspondence was conducted on February 9 and 15, 2023. A response was received from Wiyaka Bennett with the Quartz Valley Indian Reservation on February 2, 2023, stating that the tribe has no knowledge of any cultural sites within or adjacent to the project area, but the project site is in the tribe's ancestral territory, and they are interested in any archaeological findings.

Caleen Sisk with the Winnemem Wintu Tribe replied by email on February 16, 2023, stating that there is a potential for tribal cultural resources to be present within the Bella Vista Water District boundaries. Maps and details on the project were provided to Ms. Sisk; no further response was received. No other comments were received from any of the other tribes that were contacted.

1.8 REGULATORY REQUIREMENTS

Permits and approvals that may be necessary for construction and operation of the proposed project are identified below.

Bella Vista Water District:

- Adoption of a Mitigated Negative Declaration (MND) pursuant to CEQA.
- Adoption of a Mitigation Monitoring and Reporting Program (MMRP) for the project that incorporates the mitigation measures identified in this Initial Study.

State Water Resources Control Board (SWRCB)/Central Valley Regional Water Quality Control Board (CVRWQCB):

- Coverage under the National Pollutant Discharge Elimination System (NPDES) permit for Discharges of Storm Water Runoff Associated with Construction Activity (currently Order No. 2022-0057-DWQ, adopted September 8, 2022). Permit coverage may be obtained by submitting a Notice of Intent (NOI) to the SWRCB. The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to reduce pollutants and any additional controls necessary to meet water quality standards.

State Division of Drinking Water

- Approval of a Domestic Water Supply Permit Amendment.

U.S. Bureau of Reclamation

- Approval of design drawings and specifications for modifications to the 42-inch-diameter pipeline downstream of the Regulating Station, and modifications to Regulating Station piping and structures.

California Office of Historic Preservation, State Historic Preservation Officer (SHPO)

- Due to federal funding for the proposed project, consultation regarding potential impacts to cultural resources is required pursuant to Section 106 of the National Historic Preservation Act (NHPA).

1.9 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the proposed project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages. Impacts to these resources are evaluated using the checklist included in Section 4.0. The proposed project was determined to have a less-than-significant impact or no impact without mitigation on unchecked resource areas.

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

1.10 PROPOSED MITIGATION MEASURES

The following mitigation measures are proposed to reduce impacts of the proposed project to less than significant levels.

AGRICULTURE AND FORESTRY RESOURCES

Implementation of **MM 4.4.2 and MM 4.4.3.**

AIR QUALITY

MM 4.3.1 The following measures shall be implemented throughout construction:

a. All material excavated, stockpiled, or graded shall be covered or sufficiently watered as necessary to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards.

b. All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.

c. All areas (other than paved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.

d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.

e. All land clearing, grading, earth moving, and excavation activities on the project site shall be suspended when winds are causing excessive dust generation.

f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of Section 23114 of the California Vehicle Code.

g. Paved streets in and adjacent to the construction site shall be swept or washed at the end of the day (or more frequently if needed) to remove excessive accumulations of silt and/or mud resulting from activities on the development site.

h. When not in use, motorized construction equipment shall not be left idling for more than five minutes.

i. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.

MM 4.3.2 The following measures shall be implemented to minimize NO_x emissions during construction:

a. Prior to commencement of construction activities, the contractor shall provide evidence to the Bella Vista Water District (BVWD) that all diesel-fueled construction equipment including but not limited to rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, and tractors, meets or exceeds California Air Resources Board (CARB) Tier 4 final off-road emissions standards. If more stringent requirements are in place at the time of construction, the most stringent requirements shall apply.

   An exemption from these requirements may be granted by the BVWD in the event that the contractor provides documentation that Tier 4 Final equipment is not reasonably available and that corresponding reductions in NO_X emissions would be achieved from other construction equipment.

b. Alternatively-fueled construction equipment shall be used, where feasible (e.g., compressed natural gas (CNG), liquefied natural gas (LNG), propane, biodiesel, or advanced technologies that do not rely on diesel fuel).

BIOLOGICAL

MM 4.4.1 Trees greater than 12 inches in diameter at breast height (DBH) shall be removed using a two-step process to allow bats the opportunity to abandon the roost prior to removal.

Day 1: Remove small-diameter trees, brush, and non-habitat features of large trees (branches without cavities, crevices, or exfoliating bark), using chainsaws for cutting, and chippers wherever possible to cause a level of noise and vibration disturbance sufficient to cause bats to choose not to return to the tree for a few days after they emerge to forage.

Day 2: Remove the remainder of the trimmed tree.

To avoid impacts to active maternity colonies, tree removal shall occur only during the following time frames and subject to the following weather conditions, or as otherwise approved/recommended by a qualified bat biologist:

- Between March 1 (or after evening temperatures rise above 45ºF, and/or no more than ½" of rainfall within 24 hours occurs), and April 15; and/or
- Between September 1 and October 15 (or before evening temperatures fall below 45ºF, and/or more than ½" of rainfall within 24 hours occurs).

MM 4.4.2 To mitigate the loss of oak woodland, BVWD shall implement one of the following measures:

a. The Bella Vista Water District shall establish a conservation easement to offset impacts to oak woodlands in Shasta County at a 2:1 ratio (acres protected to acres affected). In support of the conservation easement, a detailed management plan shall be developed and implemented to provide for the long-term maintenance of the oak woodland.

The management plan shall address allowable land uses and intensities of such use, provide for periodic inspection of the protected lands, address the establishment and maintenance of protective measures such as fencing, identify maintenance and management tasks such as weed removal and trash pick-up, provide for remediation of the effects of unauthorized activities, and name a conservation-oriented third party to hold the easement and be responsible for ensuring the long-term maintenance of the protected lands. Establishment of an endowment to fund the management and maintenance activities undertaken by the easement holder may be appropriate.

The conservation easement may be established directly by the District, or the District may fund the purchase of a conservation easement by a third-party conservation-oriented entity. If the latter option is selected, the management plan for the oak woodland would be provided by the conservation entity.

b. The Bella Vista Water District shall contribute an appropriate compensation fee to the Oak Woodlands Conservation Fund managed by the California Wildlife Conservation Board. The fee shall be sufficient to offset impacts to oak woodlands at a 2:1 ratio (acres protected to acres affected).

MM 4.4.3 The following measures shall be implemented to ensure retention of the oak trees that are designated for preservation. BVWD shall ensure compliance through the enforcement of contractual obligations:

a. High-visibility markers shall be provided at least 6 feet outside of the dripline of all trees to be preserved. The markers shall be installed prior to the start of construction, be maintained throughout the construction period, and be removed upon completion of construction.

b. No vehicle parking, materials stockpiling, or similar activities shall occur inside the marked tree protection zone. If construction work (including fill, grading, and trenching) must be conducted within the tree protection zones, the work shall be completed under the supervision of a certified arborist.

MM 4.4.4 High-visibility indicators such as marking whiskers, pin flags, stakes with flagging tape, or other markers shall be installed along the outer edges of the construction zone adjacent to wetlands and other waters designated for avoidance. The marker/flag locations shall be determined by a qualified biologist in consultation with the project engineer and the Bella Vista Water District. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the marked/flagged area. The exclusionary markers/flags shall be periodically inspected during construction activities to ensure that the markers/flags are properly maintained. The markers/flags shall be removed upon completion of work.

MM 4.4.5 The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

a. Using only certified weed-free erosion control materials, mulch, and seed;

b. Limiting any import or export of fill material to material that is known to be weed free; and

c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the job site and upon leaving the job site.

MM 4.4.6 To prevent the inadvertent entrapment of wildlife, the construction contractor shall ensure that at the end of each workday trenches and other excavations that are over one-foot deep have been backfilled or covered with plywood or other hard material. If backfilling or covering is not feasible, one or more wildlife escape ramps constructed of earth fill or wooden planks shall be installed in the open trench. Pipes shall be inspected for wildlife prior to capping, moving, or placing backfill over the pipes to ensure that animals have not been trapped. If animals have been trapped, they shall be allowed to leave the area unharmed.

MM 4.4.7 In order to avoid impacts to nesting birds and raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or

b. If vegetation removal or ground disturbance activities occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area.

Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

The results of the survey shall be submitted electronically to the California Department of Fish and Wildlife upon completion at: **R1CEQARedding@wildlife.ca.gov**. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed. If active nests are found, appropriate actions shall be implemented to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

CULTURAL

MM 4.5.1 In the event of any inadvertent discovery of cultural resources (i.e., burnt animal bone, midden soils, projectile points or other humanly modified lithics, historic artifacts, etc.), all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with PRC §21083.2(g) and §21084.1, and CEQA Guidelines §15064.5(a). If any find is determined to be significant by the archaeologist, the Bella Vista Water District shall meet with the archaeologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archeologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the Bella Vista Water District prior to resuming construction.

MM 4.5.2 In the event that human remains are encountered during construction activities, the Bella Vista Water District shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the County coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed.

GEOLOGY AND SOILS

MM 4.7.1 All grading plans and foundation plans shall be reviewed by a qualified professional to ensure that all recommendations included in the KC Engineering Geotechnical Report are implemented. Applicable notes shall be placed on the attachment sheet to the improvements plans and in applicable project plans and specifications. If significant engineering design changes occur during construction, Bella Vista Water District (BVWD) shall consult with a qualified geotechnical engineer to identify any geotechnical constraints related to the design changes. Recommendations of the geotechnical engineer shall be implemented as warranted.

MM 4.7.2 BVWD shall ensure through contractual obligations that earthwork activities are monitored by a qualified professional to ensure that recommendations included in the KC Engineering Geotechnical Report are implemented.

MM 4.7.3 If paleontological resources (fossils) are discovered during construction, all work within a 50-foot radius of the find shall be halted until a professional paleontologist can evaluate the significance of the find. If any find is determined to be significant by the paleontologist, BVWD representatives shall meet with the paleontologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by a paleontologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by BVWD prior to resuming construction.

NOISE

MM 4.13.1 Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7:00 A.M. and 7:00 P.M., Monday through Saturday. Construction activities shall be prohibited on Sundays and federal/state recognized holidays. Exceptions to these limitations may be approved by the Bella Vista Water District General Manager or his/her designee for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards.

MM 4.13.2 Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

MM 4.13.3 Stationary construction equipment (generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses.

MM 4.13.4 Building mechanical equipment and other noise-generating stationary sources shall be designed to ensure that operational noise levels at nearby sensitive receptors do not exceed applicable Shasta County noise standards.

Noise attenuation shall be implemented if determined necessary by the project engineer. Noise attenuation may include, but not be limited to, installing equipment in an enclosure that provides adequate noise attenuation, selecting low noise-generating equipment, and use of sound-rated doors, windows, and vents.

TRIBAL CULTURAL RESOURCES

Implementation of **Mitigation Measures MM 4.5.1 and 4.5.2.**

SECTION 2.0 CEQA 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 has been prepared.**

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

☐ I find that the proposed project MAY have a significant effect(s) 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, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." An ENVIRONMENTAL IMPACT REPORT (EIR) 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.

David J. Coxey

David Coxey, General Manager
Bella Vista Water District

August 29, 2023
Date

SECTION 3.0 PROJECT DESCRIPTION

3.1 PROJECT BACKGROUND, NEED, AND OBJECTIVES

Established in 1957, the Bella Vista Water District (BVWD or District) provides agricultural, municipal, and industrial water to unincorporated communities northeast of the City of Redding (City) and to eastern portions of the City. The District's service area boundary encompasses 34,360 acres (53 square miles) including the unincorporated communities of Bella Vista and Palo Cedro. According to the District's 2023 Cost-Based Rate Study Analysis and Recommendations[1], there were a total of 6,328 active accounts in 2022, 144 of which were agricultural accounts.

Water System

As stated in the 2020 Urban Water Management Plan (UWMP)[2], the District's water system consists of five water tanks, ten pumping stations, one water treatment plant (WTP), five wells, and over 200 miles of pipeline ranging in size from 4 inches to 54 inches in diameter.

Water is pumped from the Sacramento River in the City of Redding via the Wintu Pumping Plant/Pump Station, located adjacent to the Sacramento River downstream of the Sundial Bridge. Water is treated with chlorine at the Wintu Pumping Plant and is then conveyed to a water tank on Hilltop Drive that functions primarily as a surge suppressor to abate water surges caused by the river intake pumps turning on and off. Water is then conveyed from the surge tank to the WTP located on Canby Road in the City of Redding, where it is filtered prior to entering the distribution system. Treatment of groundwater at the District's five wells consists of oxidation of iron and manganese using chlorine, followed by absorption of the iron and manganese oxides in pressure filters. Two of the five water tanks are not considered storage tanks: the surge tank on Hilltop Drive and the regulating tank on Hidden Acres Road, which is primarily a pressure regulating reservoir.

According to the 2012 Federal Water Management Plan for the BVWD[3], the three storage tanks have a combined capacity of 5.2 million gallons (MG). The largest tank is the 4 MG Main Pressure Zone Tank on E. Stillwater Way; however, system hydraulics limit the useable storage of this tank. The tank on Old Oregon Trail has a capacity of 1 MG, and the Cow Creek I Tank on Old Ranch Road has a capacity of 0.2 MG. Based on storage limitations for the 4 MG Main Pressure Zone Tank, the total operational storage of the District's three storage tanks is currently ±1.35 MG.

The USBR owns the Wintu Pump Station, surge tank, 4MG tank, regulating station, main aqueduct, and laterals that were constructed as the Cow Creek Unit of the Trinity River Division of the Central Valley Project (CVP).

Water Supply and Demand

The District obtains its normal water supply from two sources: surface water pumped from the Sacramento River in Redding and groundwater pumped from the five wells located near the southern border of the District boundary. The District receives CVP water through a contract with USBR (contract No. 14-06-200-854A-LTR1). On September 15, 2020, the USBR contract was converted from a Long-Term Renewal Contract to a Repayment Contract, which allows the District to continue receiving water deliveries as long as the District pays applicable rates and charges to USBR. The USBR contract for CVP water is the District's main water source with an entitlement quantity of 24,578 acre-feet per year (AFY).

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[1] *Bella Vista Water District. Cost-Based Rate Study Analysis and Recommendations. February 27, 2023.* https://bvwd.org/documents/503/2023_Rate_Study_Binder_final_230112.pdf

[2] *Provost & Pritchard Consulting Group. Bella Vista Water District Urban Water Management Plan 2020 Update, June 2021.* https://bvwd.org/documents/503/BVWD_2020_UWMP_Final_2021-06-17.pdf

[3] *U.S. Bureau of Reclamation, Mid-Pacific Region. Bella Vista Water District 2012 Federal Water Management Plan, dated July 1, 2015.* https://www.usbr.gov/mp/watershare/docs/2015/bella-vista-water-district.pdf

The District also entered into a long-term water transfer agreement with the Anderson-Cottonwood Irrigation District (ACID) for the transfer of CVP water. The District's original agreement with ACID was for 1,536 AFY. The agreement was amended in 2021 for an additional 264 AF of water annually, for a total of 1,800 AF. Pursuant to the terms of the ACID agreement, the transfer water is available to the District only between April 1 through October 31 each year.

The USBR CVP water allocation and the ACID transfer water are subject to reductions in drought years. Between 2011 and 2020, the average water supply available through the District's USBR contract was 18,700 AFY, and the average quantity available through its transfer agreement with ACID was 1,459 AFY. In addition, the District's five groundwater wells are capable of producing ±3,315 AF annually; however, the District uses only surface water when feasible since it costs less than groundwater.

Operation of the wells is limited primarily to drought periods when the USBR and ACID water allocations are reduced, when river water (CVP water) turbidity is high (typically during the winter), and during peak demands in the summer when the District has difficulties maintaining water levels in the Main Pressure Zone water tank. The wells also act as a backup water supply when the Wintu Pump Station is not operating.

According to the UWMP, the District would have a water surplus during normal water years, assuming the availability of their entire water supply allotments under the contracts with USBR and ACID. **Table 1** shows anticipated water supply, demand, and surplus in a normal year for the District through 2045.

Table 1
Bella Vista Water District
Anticipated Water Supply, Demand, and Difference

Descriptions	Water Supply and Demand (AFY)				
	2025	2030	2035	2040	2045
Supply Totals[1]	24,474	25,474	25,474	25,474	25,474
Demand Totals[2]	9,969	10,181	10,397	10,616	10,843
Difference	+14,505	+15,293	+15,077	+14,858	+14,631

1 – Supply includes the average CVP and ACID transfer water supplies available over the period of 2011-2020; also includes 4,315 AFY of groundwater anticipated to be available in 2025 with construction of one new well, and 5.315 AFY anticipated to be available in 2030 and beyond with construction of a second new well.

2 – Projected water demand based on average water use over the past five years (2016-2020) adjusted for growth.

Source: Provost & Pritchard Consulting Group. Bella Vista Water District Urban Water Management Plan 2020 Update, June 2021.

During drought years, the District's CVP water allocation can be reduced significantly depending on USBR's water supply projections and the CVP Water Shortage Policy; the allocation for municipal and industrial (M&I) water can be reduced by 50 percent or more, and agricultural allotments can be reduced to zero percent. The amount of transfer water from ACID can also be reduced.

For example, for the water year commencing on March 1, 2022, the District did not receive any water under its USBR contract for agricultural uses. The M&I water allocation was reduced to public health and safety (PHS) levels, which is defined as enough water to satisfy human consumption, sanitation, and fire protection requirements. Historically, in shortage years, the ACID allocation has been reduced to 75 percent of full entitlement; however, in 2022, ACID's allocation was reduced to 18 percent. In April 2023, USBR increased the CVP allocations, and the District's allocation for the 2023 water year was restored to 100 percent of their contract amount. The District will also receive the full allocation under its contract with ACID in the 2023 water year.

Project Need and Objectives

Treated Water Storage

As noted above, the total operational storage of the District's three storage tanks is currently ±1.35 MG. Due to the limited amount of treated water storage in the District's water distribution system, the District often needs to supplement groundwater from the wells with short-term surface water transfers to meet peak demands; however, there is no guarantee that short-term supplemental water will be available in a drought year.

The District's 2021 Drought Contingency Plan[4] states that when the District is running solely on its wells, and the Wintu Pump Station or WTP is off-line, standby storage equal to one day's usage is recommended. The Drought Contingency Plan also states that in order to maximize the output from the District's groundwater wells and avoid turning the wells off, additional treated storage is required. The Plan included an analysis to determine the amount of storage required to meet daily peak demands and concluded that a new 3 MG water storage tank would be required to ensure a reliable water supply for the District.

Improvements at the Water Tank Site would provide the following benefits and meet the District's objectives to ensure a reliable water supply, reduce operational costs, and improve efficiency in the water system:

- More than triple the District's operational storage from 1.35 MG to 4.35 MG and provide a new water yield estimated to be approximately 2,600 acre-feet (AF) in drought years.
- Enable the District to maximize the water production of its existing wells and potential additional wells that the District anticipates constructing in future years.
- Reduce the amount of water that the District needs to secure through short-term water transfers.
- Greatly improve the District's ability to maintain the water pressure needed to fight wildfires.
- Provide for increased water allocations for District customers and reduce the amount that the District's customers would pay in penalties for exceeding their reduced water allocations in drought years.
- Enable the District to avoid running its WTP to meet peak daily flows during November through April, thus reducing energy and costs for the District. In addition, if the WTP has to be restarted after being off-line for a day or more, all of the water in the section of the Main Aqueduct between the Wintu Pump Station and the WTP (more than 500,000 gallons) must be flushed into the backwash ponds at the WTP. This takes about an hour and requires several operators. If this occurs outside normal business hours, it results in substantial overtime expenses.
- Improve the management of backwash water. The water discharged to the backwash ponds when the plant is brought back online is normally recycled through the plant; however, more than five MG (15 AF) must be produced by the WTP before the water discharged to the ponds will be recovered. In a drought, this represents five MG (15 AF) of surface water that could have been produced by the wells.
- Provide the District the ability to isolate and supply water to the Deschutes, Cow Creek No. 1, and Cow Creek No. 2 pressure zones in case of a failure in the Main Aqueduct anywhere between the Simpson Pump Station and the Regulating Station.
- Take demands off of the remainder of the District's water system during peak flow periods and during emergencies. Flow into the new tank could be shut off in an emergency, thereby reducing demands on the District's 4 MG tank. This will enable the

[4] *Provost & Pritchard Consulting Group. Drought Contingency Plan for Bella Vista Water District (2021).* *https://www.bvwd.org/documents/503/BVWD_Drought_Contingency_Plan_-_Final_-_2021.03.08_-_Full_Report.pdf*

District to keep more water in the 4 MG tank available for emergency supply and firefighting for the remainder of the District's service area.

- Provide for system redundancy and enable the District to weather short-term outages due to power failures, equipment failures, and scheduled outages for maintenance without having to activate its surface water source.

Supervisory Control and Data Acquisition (SCADA) System

Only two of the District's wells are connected to the District's SCADA system. If a non-SCADA well goes off-line due to a power fault or outage, staff must travel to the well to make operational changes. The addition of a SCADA system at the District's three additional wells (Wells 3, 4, and 6) would allow remote operational control of the wells. The wells could automatically be ramped up and down to meet system demands, and the wells could also be remotely turned off or on by an operator without having to be physically present at the well.

3.2 PROJECT COMPONENTS / PHYSICAL IMPROVEMENTS

This section describes the proposed improvements that are the subject of this Initial Study. The identified improvements are based on 60 percent plans, and minor modifications to the project may be made during completion of the final improvement plans; the study area for the project was expansive to allow for flexibility with the engineering design. Proposed Improvements are described below.

3-Million-Gallon Water Tank Site

As shown in **Figure 3** (Site Plan), **Figure 7** (Grading Plan), and **Figure 8** (Piping Plan), improvements at the Water Tank Site include:

- Construction of a 3 MG above-ground prestressed concrete water tank with a domed top. The outer diameter of the tank would be ±120 feet and the height of the tank would be ±55 feet at the top of the dome. The tank would be partially buried (up to five feet in depth).
- Installation of a new ±1,070 square foot booster pump station and electrical control room, and a new electric transformer north of the existing Regulating Station water tank.
- Installation of ±165-linear feet of new 30-inch-diameter suction pipeline from the new tank to the new booster pump station and installation of ±120 linear feet of new 24-inch-diameter discharge pipeline from the new 30-inch-diameter pipeline to an existing aqueduct pipeline northwest of the new tank.
- Installation of ±145 linear feet of new 20-inch-diameter pipeline from the new pump station to the Regulating Station valve vault and installation of ±300 linear feet of new 20-inch-diameter tank fill pipeline from the existing Regulating Station valve vault to the south side of the new tank.
- Fill of ±90 linear feet of the existing overflow drainage channel and replacement of this segment of the drainage channel with a 36-inch-diameter overflow drain pipe from the existing Regulating Station tank overflow. A new overflow headwall and concrete channel lining would be installed at the drain pipe outlet. Rock slope protection would be installed in the channel south of the headwall.
- Installation of control valves upstream of the new tank to regulate flow into the new tank and prevent overfilling of the tank. A control valve will also be installed downstream of the new tank to regulate flows to the receiving pressure zone.
- Installation of electronic controls that will enable the District to close the inlet to the tank during periods of peak demand to reduce water demands on the District's Main Pressure Zone.

LEGEND

- EXISTING GRAVEL SURFACE
- CONCRETE LINING, SIDEWALK, FOUNDATION, OR CONCRETE PAD
- RIPRAP
- 6" THICK CLASS II AB COMPACTED TO 95% RD OVER NATIVE SOIL SCARIFIED 6" DEEP AND COMPACTED TO 95% RD
- 3" THICK CLASS II AB COMPACTED TO 95% RD OVER NATIVE SOIL SCARIFIED 6" DEEP AND COMPACTED TO 95% RD

(E) PIPELINE EASEMENT

(E) PIPELINE EASEMENT

(E) EASEMENT

WATER
STORAGE TANK
FF 681.00

(P) DROP INLET
TG 682.00

FILL (E) DITCH TO TOP
OF BANK ELEVATION

(E) TANK

(E) 36" CMP

HIDDEN ACRES RD

Figure 7
Grading Plan - Water Tank Site

SCALE IN FEET
0 15 30 60

60% PRELIMINARY
NOT FOR CONSTRUCTION
6/14/2023

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER
BRICE STIPE
No. 75956
STATE OF CALIFORNIA
FOR REVIEW ONLY

DATE SIGNED: ____

WATER STORAGE TANK
BELLA VISTA WATER DISTRICT
REDDING, CA
CIVIL
GRADING PLAN

PROVOST & PRITCHARD
An Employee Owned Company
ADVANCING CALIFORNIA TOGETHER
CLOVIS, CALIFORNIA 93611-0166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: B STIPE
LICENSE NO: 75956
DRAFTED BY: JMN
CHECKED BY:
DATE: 6/14/2023
JOB NO: 201022004
PROJECT NO:
PHASE:
0 1"
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
SHEET C-3
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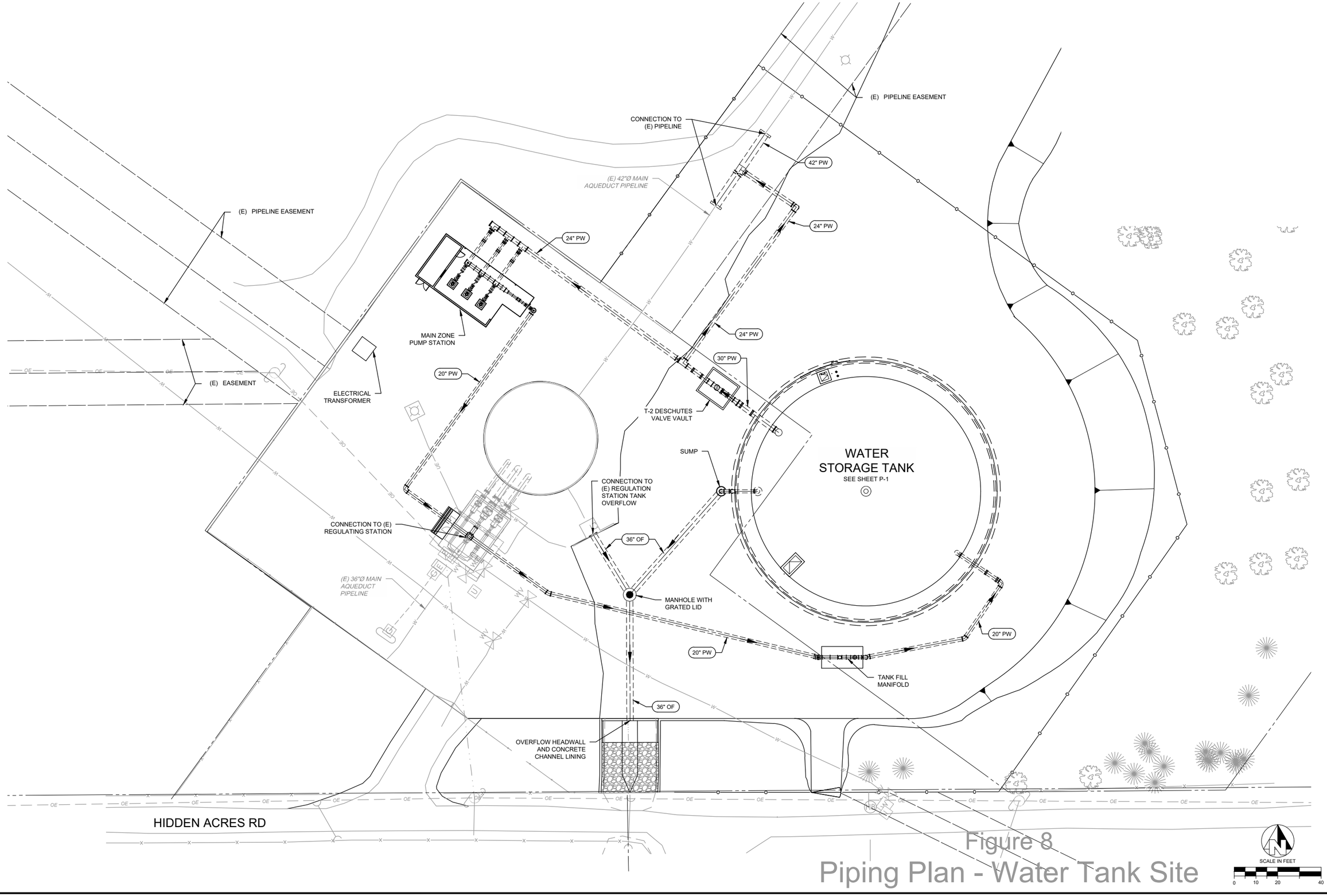

Figure 8
Piping Plan - Water Tank Site

60% PRELIMINARY
NOT FOR CONSTRUCTION
6/14/2023

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER BRICE STIPE 75956 STATE OF CALIFORNIA
FOR REVIEW ONLY
DATE SIGNED:

WATER STORAGE TANK
BELLA VISTA WATER DISTRICT
REDDING, CA
CIVIL
SITE PIPING PLAN

PROVOST & PRITCHARD
CONSULTING ENGINEERS
An Employee Owned Company
1234 H STREET
CLOVIS, CALIFORNIA 93611-6166
559/449-2700 FAX 559/449-2715
https://provostandpritchard.com/

DESIGN ENGINEER: B STIPE
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PROJECT NO:
PHASE:
ORIGINAL SCALE SHOWN IS ONE INCH. ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.
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- Modifications to the existing supervisory control and data acquisition (SCADA) system.
- Modifications to the piping and improvements to the stairs at the Regulating Station building.
- Installation of 6-inch-thick compacted Class II aggregate base (AB) throughout the area in which improvements would occur; installation of 3-inch-thick compacted Class II AB in the area of the existing Regulating Station, new pump station, and electrical transformer (see **Figure 3**).
- Removal of a portion of the existing chain link fence around the Regulating Station site; installation of a new chain link fence topped with barbed wire around the new water tank and associated improvements.
- Installation of exterior lighting, including one pole-mounted anti-glare LED light installed south of the proposed water tank, adjacent to Hidden Acres Road; an anti-glare LED light mounted on the south side of the tank and on the north side of the tank at a height of 16 feet; a pole-mounted anti-glare LED light installed on top of the northern area of the tank at a height of eight feet; and one anti-glare LED floodlight installed on the south side of the new booster pump station.
- Relocation of existing Pacific Gas and Electric (PG&E) power poles and overhead powerlines to accommodate the new water tank. This would include removing two PG&E power poles and overhead powerlines north and east of the Regulating Station and installing one new power pole and overhead powerlines west of the existing Regulating Station facility. The new powerline would need to be operational prior to removal of the existing powerline.

Hidden Acres Road

Due to the existing condition of Hidden Acres Road and the potential for additional damage during construction, portions of the existing ±0.6-mile segment of roadway would be repaired/restored to pre-existing conditions or better upon completion of work at the Water Tank Site. The existing roadway is approximately 20 to 25 feet wide and would not be widened or extended.

Wells No. 3, 4, and 6

SCADA systems would be installed at Well Sites 3 (**Figure 4**), 4 (**Figure 5**), and 6 (**Figure 6**). This would include mounting a radio antenna on the existing well buildings at Well Sites 4 and 6, and installing an antenna on a new ground-mounted radio tower on an existing concrete pad at Well Site 3.

Other Considerations

Geotechnical Study

Construction activities would be conducted in accordance with the conclusions and recommendations included in the Geotechnical Exploration Report prepared for the proposed project by KC Engineering Company in December 2022. The purpose of the geotechnical study was to evaluate the surface and subsurface soil conditions at the project site and identify geotechnical criteria for site clearing and grading, design of foundations, installation of pavement, drainage facilities, and other related improvements. The study included site reconnaissance, drilling and logging of five exploratory borings, sampling of the subsurface soils, and laboratory testing of the soil samples.

Clearing, Grading, and Erosion Control

The surface of the Water Tank Site would be stripped to remove all existing vegetation, trees, tree roots, bushes, and/or other deleterious materials, Stripping depths are anticipated to be two to four inches below grade. Any existing undesirable items encountered on site that do not meet the requirements for engineered fill (e.g., fence posts/wood, tree roots, concrete rubble, buried pipes, etc.) should be excavated and removed.

The proposed tank floor elevation would be about three feet below existing grade. To address anticipated differential settlement, the water tank construction would require over-excavation of 4.5 feet below the bottom of the tank and installation of geogrid reinforced fill extending five feet laterally beyond the tank perimeter. Alternatively, the over-excavated area could be backfilled with controlled low-strength materials having a minimum compressive strength of 500 p.s.i. per ACI 229R. Fill material would be approved by the soil engineer.

Compaction of soil would be performed by footed rollers or other types of approved compaction equipment. Field density and moisture tests would be conducted until compaction requirements have been met. Drainage improvements would be designed by a licensed civil engineer to ensure that the flow of water is directed away from structures.

Cut and fill slopes would be no steeper that 2:1. After completion of grading, erosion control would be installed on all exposed surfaces of cut and fill slopes by hydro-seeding and/or slope planting, preferably with deep-rooted native plants requiring little to no irrigation. Utility trenches would be backfilled with native or approved import material and compacted as recommended in the geotechnical study.

Tree Removal

There are 59 trees greater than six inches in diameter at breast height (DBH) within the study area for the Water Tank Site. This includes 50 blue oaks, four interior live oaks, and five gray pines. Up to 52 of these trees would be removed to facilitate construction of the proposed improvements and to establish the staging area. The final number of trees to be removed depends on the location of the staging area (see **Figure 3**).

The area in which improvements would occur includes ±37 trees greater than six inches DBH that would need to be removed (32 blue oaks and five gray pines); this includes trees that would be removed within the boundaries of the alternate staging area regardless of whether this area is used for staging.

The preferred staging area includes seven trees that would need to be removed (six blue oaks and one interior live oak); the alternate staging area includes 15 trees that would need to be removed (12 blue oaks and three interior live oaks) in addition to the trees that would be removed during grading for the new tank. As further discussed in Section 4.2 (Agriculture and Forest Resources) and Section 4.4 (Biological Resources), up to ±1.4 acres of forest land/oak woodland would be converted, depending on the location of the staging area.

Access and Staging

As shown in **Figure 3,** temporary staging of construction equipment and materials at the Water Tank Site would occur adjacent to the new water tank on property owned by the District or on private property north of the proposed water tank. Access to the work areas would be via Hidden Acres Road and/or from an existing driveway/access route off of Old Alturas Road (see **Figure 2**). The District would obtain any necessary construction and access easements prior to commencement of work. Staging for improvements at the well sites would occur on the well properties in previously disturbed areas.

Construction Considerations

Work is anticipated to commence in the fall of 2023 and would be completed in approximately 18 months. The existing Regulating Station tank would remain in service during construction of the new tank and will remain operational following construction of the new tank. However, due to the higher water level in the new tank, the two tanks cannot be operated in parallel. Keeping the existing Regulating Station facilities operational will enable the District to take the new tank out of service for periodic maintenance and inspection. Similarly, with the new tank in service the existing Regulating Station and tank can be taken out of service for inspection and maintenance.

SECTION 4.0 ENVIRONMENTAL IMPACT ANALYSIS

4.1 AESTHETICS

Except as provided in Public Resources Code §21099 (Transit-Oriented Infill Projects), would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In 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 a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

REGULATORY CONTEXT

There are no federal or local regulations pertaining to aesthetics that apply to the proposed project.

STATE

California Scenic Highway Program

The California Scenic Highway Program, administered by the California Department of Transportation (Caltrans), was established in 1963 to preserve and protect the natural beauty of scenic highway corridors in the State. The Scenic Highway System includes a list of highways that have been designated as scenic highways as well as a list of highways that are eligible for designation as scenic highways. Local jurisdictions can nominate scenic highways for official designation by identifying and defining the scenic corridor of the highway and adopting a Corridor Protection Program that includes measures that strictly limit development and control outdoor advertising along the scenic corridor.

California Building Standards Code

The California Building Standards Code (CBSC) (CCR Title 24) is based on the International Building Code (IBC) used widely throughout the country. Part 11 of the CBSC is the Green Building Code (CALGreen). CALGreen §5.106.8 includes mandatory light pollution reduction measures for non-residential uses. The intent of the measures is to maintain dark skies and to ensure that newly constructed projects reduce the amount of backlight, uplight, and glare (BUG).

In addition, §130.2(c) of the California Energy Code (CEC) (CBSC Part 6) requires that all outdoor lighting for new non-residential uses must be controlled with a photocontrol, astronomical time-switch control, or other control capable of automatically shutting off the outdoor lighting when daylight is available, thereby minimizing the potential for glare during the daytime.

In addition, automatic scheduling controls must be installed for all outdoor lighting and must be capable of reducing lighting power by at least 50 percent and no more than 90 percent, and must be separately capable of turning the lighting off during scheduled unoccupied periods.

DISCUSSION OF IMPACTS

Questions A and C

Scenic vistas are defined as expansive views of highly valued landscapes from publicly accessible viewpoints (e.g., public roadways, parks and recreation areas, publicly accessible open space areas, and other public gathering places). Scenic vistas include views of natural features such as mountains, hills, valleys, water courses, outcrops, and natural vegetation, as well as man-made scenic structures. Scenic resources in the study area include trees and other vegetation, open space, Mt. Lassen to the east, and the rolling hills and mountains that bound the valley to the east, north, and west. Proposed improvements would be visible to individuals living and working in the area and to travelers on adjacent roadways.

The proposed project would have short-term visual impacts during construction due to clearing, trenching, and staging of construction equipment and materials. As shown in **Figure 3**, staging would occur within the study area boundary on a portion of District-owned land and/or privately-owned land. Grading and tree removal would be needed to accommodate the proposed improvements and establish the staging area on the Water Tank Site.

Project components at the Water Tank Site that have a potential to affect the existing visual character of the area include the removal of trees and other vegetation, new aggregate base throughout the Water Tank Site, the new 3 MG water tank, pump station and electrical control building, electrical transformer, and 6-foot-tall chain-link fencing topped with barbed wire around the tank site.

Existing Regulating Station

As shown in **Photos 1 and 2,** existing facilities at the Water Tank Site include the booster pump station building, 200,000-gallon regulating tank, generator, propane tank, a radio tower, and chain-link fencing. Other features in the built environment include barbed-wire fencing, power poles, and overhead powerlines.

Photo 1. Regulating Station and Tank; facing east from Hidden Acres Road. *June 6, 2023*

Photo 2. Regulating Station and Drainage Channel; facing northwest from Hidden Acres Road. *June 6, 2023*

Proposed Water Tank Site Improvements

Photo 3 is provided to illustrate the proposed improvements in relation to the surrounding area.

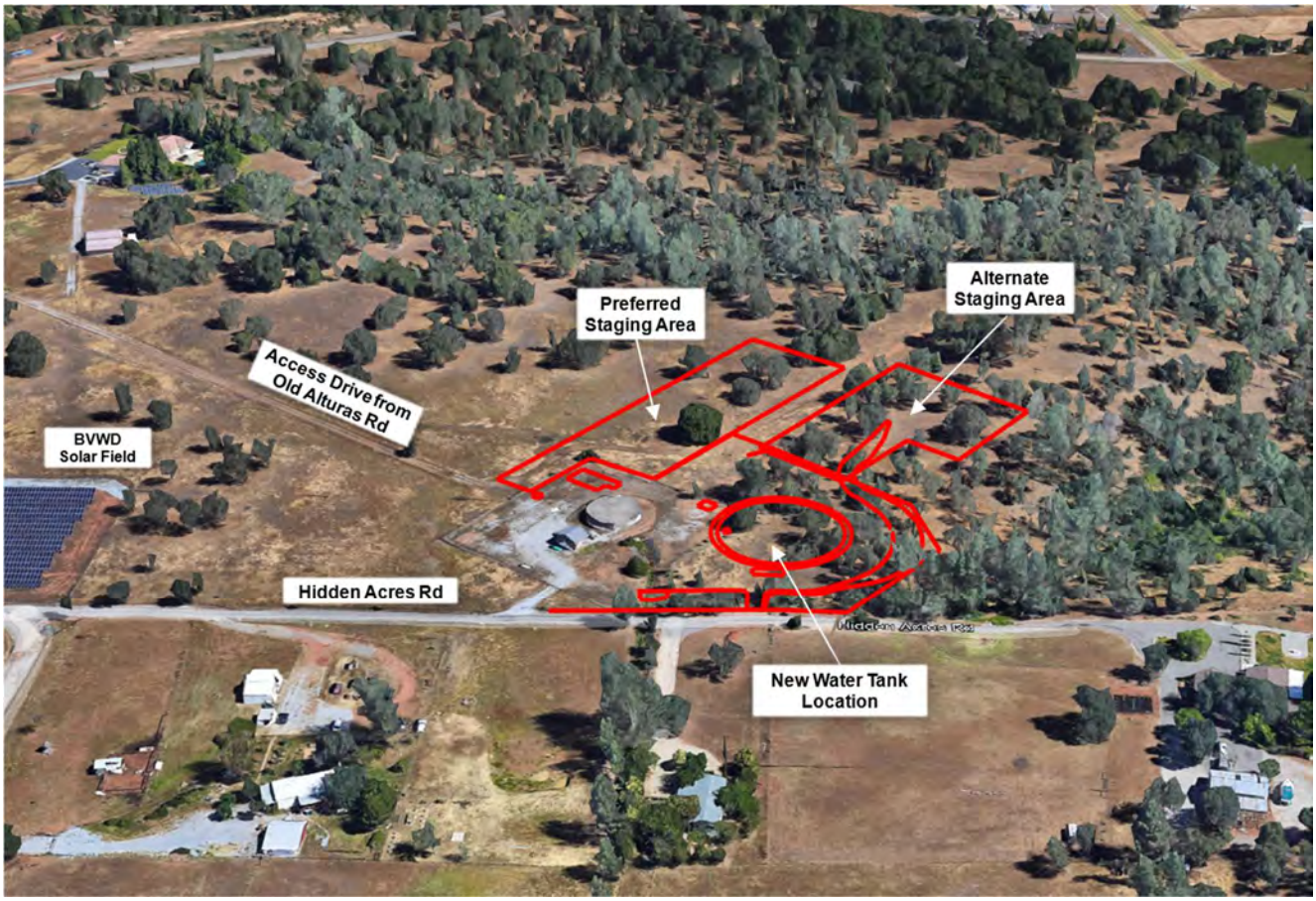

Photo 3. Proposed Water Tank and Associated Improvements, Staging Areas, and Access Routes.

Photo 4. Proposed Water Tank Location; facing northeast from Hidden Acres Road. *June 6, 2023*

Photo 5. Proposed Water Tank Location; facing north from Hidden Acres Road. *June 6, 2023*

The new water tank would be located at an elevation of ±680 feet above sea level and located adjacent to the existing USBR-owned Flow Control Station and Regulating Tank. The outer diameter of the new tank would be ±120 feet and the height of the tank would be ±55 feet at the top of the dome. The tank would be partially buried (up to five feet in depth). For comparison, the existing tank is ±13 feet tall and ±50 feet in diameter. Depending on final grading plans, the new water tank could be up to 40 feet taller than the existing regulating tank.

Improvements at the Water Tank Site would be visible to travelers on Hidden Acres Road and residences in the surrounding area. However, due to surrounding trees and other vegetation, the new water tank would not be visible from accessible vantage points such as Deschutes Road, Old Alturas Road, and Highway 299.

The new water tank will be painted a neutral color such as grey or tan and the tank, electrical transformer, and pump station and electrical control room would be consistent with existing structures on site. In addition, new chain-link fencing would be compatible with existing chain-link fencing surrounding these structures and pipeline improvements would be subsurface. Thus, improvements at the Water Tank Site would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.

Wells No. 3, 4, and 6 Improvements

The new SCADA systems at Well Sites 3, 4, and 6 include installation of an antenna at each of the well sites.

The antenna at the Well 3 site would be installed on a ground-mounted radio tower on an existing concrete pad. The radio tower would be a narrow, lattice structure. The Well 3 site is located on Gilbert Drive within a commercial storage unit facility and is situated between two storage buildings. The site is visible from Gilbert Drive. Other features in this area include utility poles, overhead utility lines, and commercial structures. Installation of an antenna tower at the Well 3 Site would be consistent with other features in the built environment and would not degrade the visual character of the area.

The antenna at the Well 4 site would be mounted on the existing well building. The Well 4 site is located on Abernathy Lane in a commercial/industrial area, immediately south of a City of Redding electric substation and east of a commercial storage facility. The site is visible from Abernathy Lane and to travelers on Highway 44. Other features in this area include utility poles and overhead utility lines. The addition of an antenna on the well house would be consistent with other features in the built environment and would not degrade the visual character of the area.

The antenna at the Well 6 site would be mounted on the existing well building. Well 6 is located on Old 44 Drive in a low-density rural residential area. Other features in this area include utility poles, overhead utility lines, and street signs. Improvements on the Well Site 6 property include the well house, storage tanks, and chain link fencing around the perimeter of the property. The property is visible from Old 44 Drive and from adjacent residential properties. The addition of an antenna on the well house would be consistent with other features in the built environment and would not degrade the visual character of the area.

Therefore, aesthetic impacts would be ***less than significant*** because the project does not include any components that could impede the view of a scenic vista and impacts during construction would be temporary and cease upon completion of the project.

Question B

The nearest officially designated State Scenic Highway is State Route 151 (SR 151/Shasta Dam Boulevard), located approximately nine and a half miles northwest of the Water Tank Site. The scenic route commences at the intersection of SR 151 and Lake Boulevard and continues to Shasta Dam. The proposed project would not be visible from the scenic route; therefore, the proposed project would have ***no impact*** to scenic resources within a designated State Scenic Highway.

Question D

It is not anticipated that temporary lighting during construction would be needed because the majority of work would occur during times of the year with extended daylight. Further, as discussed in Section 4.13 (Noise) construction activities are limited to between 7:00 AM and 7:00 PM.

The proposed project includes the installation of lighting at the Water Tank Site. Exterior lighting includes one pole-mounted anti-glare LED light installed adjacent to the driveway south of the proposed water tank, north of Hidden Acres Road; an anti-glare LED light mounted on the south side of the tank and on the north side of the tank at a height of 16 feet; a pole-mounted anti-glare LED light installed on top of the northern area of the tank at a height of eight feet; and one anti-glare LED floodlight installed on the south side of the new booster pump station. Exterior lighting normally would be used only when needed to allow operators to safely complete work outside of daylight hours. In addition, as stated under Regulatory Context, CALGreen §5.106.8 includes mandatory light pollution reduction measures for new non-residential uses. The intent of the measures is to maintain dark skies and to ensure that newly constructed projects reduce the amount of backlight, uplight, and glare (BUG).

Therefore, the project would not create a new source of substantial light or glare that would adversely affect day- or night-time views in the area; impacts would be ***less than significant.***

CUMULATIVE IMPACTS

Potential cumulative projects in the area include growth according to the build-out projections in the Shasta County's General Plan. As documented above, the proposed project does not include any features that would result in a significant permanent change to the visual character of the area. There are no substantial development projects anticipated in the area that would contribute to cumulative impacts. Exterior lighting installed at the Water Tank Site would be similar to existing conditions at the Regulating Station and would comply with CALGreen light pollution reduction requirements. In addition, it is not anticipated that construction lighting will be required. Therefore, the project's aesthetic impacts would not be cumulatively considerable.

MITIGATION

None necessary.

DOCUMENTATION

California Department of Transportation (Caltrans). 2023. California Road System – Functional Classification. https://www.arcgis.com/apps/webappviewer/index.html?id=026e830c914c495797c969a3e5668538. Accessed June 2023.

4.2 AGRICULTURE AND FOREST RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 §12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code §51104(g)) or result in the loss of forest land or conversion of forest land to non-forest use?	☐	☒	☐	☐
d. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

REGULATORY CONTEXT

There are no federal regulations pertaining to agriculture or forest resources that apply to the proposed project.

STATE

California Farmland Mapping and Monitoring Program (FMMP)

The FMMP was established in 1982 to provide data to decision makers to assist them in making informed decisions for the best utilization of California's farmland. Under the FMMP, the Department of Conservation (DOC) is responsible for mapping, monitoring, and reporting on the conversion of the State's farmland to and from agricultural use. Important Farmland Maps are updated and released every two years. The following mapping categories, which are determined based on soil qualities and current land use information, are included in the FMMP: prime farmland, farmland of statewide importance, unique farmland, farmland of local importance, grazing land, urban and built-up land, other land, and water.

Oak Woodlands Conservation (SB 1334, 2004)

SB 1334 of 2004 added §21083.4 to CEQA to require counties to determine whether a project within the county's jurisdiction may result in the conversion of oak woodlands that would have a significant effect on the environment. If a county determines that there may be a significant effect on oak woodlands, the county must require mitigation to minimize/offset the conversion of oak woodlands.

Williamson Act

The Williamson Act (California Land Conservation Act of 1965) was enacted as a means to protect agricultural uses in the State. Under the Williamson Act, local governments can enter into contracts with private landowners to ensure that specific parcels are restricted to agricultural and related open space uses. In return, landowners receive reduced property tax assessments. The minimum term for a Williamson Act contract is ten years, and the contract is automatically renewed for one-year terms unless the landowner files a notice of nonrenewal or a petition for cancellation.

Forest Land and Timberland

PRC §12220(g) defines Forest Land as *"land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."* PRC §4526 defines timberland as *"land, other than land owned by the federal government, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."* Government Code §51104(g) defines Timberland Production Zone as *"an area which has been zoned pursuant to [Government Code] §51112 or §51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h)."*

LOCAL

Shasta County

The County's General Plan includes the following Objective and Policy that apply to the proposed project:

Chapter 6.1, Agricultural Lands		
Objective	AG-5	Protection of agricultural lands from development pressures and or uses which will adversely impact or hinder existing or future agricultural operations.
Policy	AG-h	The site planning, design, and construction of on-site and off-site improvements for nonagricultural development in agricultural areas shall avoid unmitigable short- and long-term adverse impacts on facilities, such as irrigation ditches, used to supply water to agricultural operations.

DISCUSSION OF IMPACTS

Questions A, B, and D

According to the *Important Farmland in California* map published by the FMMP (DOC, 2022), areas in which improvements would occur are not designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, or Grazing Land.

According to the Shasta County Zoning Map (Shasta County, 2022), the Water Tank Site and surrounding parcels are located on parcels zoned Rural Residential (R-R). The R-R zone allows agricultural uses outright, provided that the parcel size is at least one gross acre. Based on review of aerial imagery, there are no large-scale agricultural operations in the project area.

The project does not have any components that would interfere with or preclude future agricultural uses in the area or result in other changes in the existing environment that could result in the conversion of farmland to non-agricultural use. In addition, no properties in the project area are subject to a Williamson Act contract (Shasta County, 2022). Therefore, the proposed project would have ***no impact*** on agricultural uses or zoning for such uses.

Question C

According to the Shasta County General Plan and County Zoning Map, there are no Timberland Production (TP) zones or Timberland (TL) zones in the project area. The project would not conflict with existing zoning for, or cause rezoning of, forest land.

As stated under Regulatory Context, "timberland" is defined in PRC §4526 as *"land, other than land owned by the federal government, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees."* According to the California Department of Forestry and Fire Protection (CAL FIRE) 2023 Forest Practice Rules, in Shasta County, commercial timber species include, but are not limited to, the following "Group A" species: sugar pine, coast redwood, ponderosa pine, Jeffrey pine, western

white pine, lodgepole pine, white fir, California red fir, noble fir, Douglas fir, incense-cedar, and Port Orford cedar.

In addition, the following "Group B" species may be considered commercial species if they are found on lands where the Group A species are growing naturally, or have grown naturally in the past: knobcone pine, gray pine, California black oak, Oregon white oak, tanoak, mountain hemlock, Brewer spruce, Englemann spruce, Sierra redwood, golden chinkapin, foxtail pine, white alder, Monterey pine, Pacific madrone, California laurel, and western juniper.

Tree species in the project site include blue oak, interior live oak, and gray pine. Although gray pines are considered a Group B species, none of the Group A species are growing naturally, or have grown naturally in the past, on the project site; therefore, the project site does not fall within the definition of timberland.

As stated under Regulatory Context above, "forest land" is defined in PRC §12220(g) as *"land that can support ten percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."*

The Water Tank Site supports ten percent tree cover under natural conditions and provides for wildlife biodiversity; thus, the project site meets the definition of forest land pursuant to PRC §12220(g). The loss of native trees on forest land would be considered a significant impact and mitigation is required.

As stated in Section 3.2 (Project Components/Physical Improvements), there are 59 trees greater than six inches DBH within the study area for the Water Tank Site. Up to 52 of these trees would be removed to facilitate construction of the proposed improvements and to establish the staging area. The total area to be impacted depends on the location of the staging area (see **Figure 3**). The limits of potential tree removal are shown in **Figure 4.2-1.**

In the worst-case scenario, if the alternate staging area is used, up to ±1.4 acres of forest land would be converted to non-forest uses. The extent of impacts to forest land will be calculated based on final project design and location of the staging area.

As discussed in Section 4.4 (Biological Resources) **Mitigation Measures (MM) 4.4.2 and MM 4.4.3** are included to offset direct impacts and minimize indirect impacts.

MM 4.4.2 requires the District to implement one of the following measures: establish a conservation easement to offset impacts to oak woodlands in Shasta County at a 2:1 ratio (acres protected to acres affected), or contribute an appropriate compensation fee to the Oak Woodlands Conservation Fund managed by the California Wildlife Conservation Board to offset impacts to oak woodlands at a 2:1 ratio (acres protected to acres affected).

MM 4.4.3 requires that high-visibility markers be installed at least six feet outside of the dripline of all trees to be preserved. The markers would be installed prior to the start of construction and would be maintained until completion of construction. No vehicle parking or materials stockpiling would be allowed within this tree protection zone. If work must occur within the marked tree protection zone, the work must be completed under the supervision of a certified arborist.

In addition, tree removal is subject to the California Forest Practices Rules (CAL FIRE, 2023), and the District may be required to obtain a Timberland Conversion Permit (TCP), a Conversion Exemption, and/or approval of a Timber Harvest Plan (THP) by CAL FIRE prior to earth disturbance in this area. If required, the project would be subject to the conditions of a TCP, THP, and/or other related approvals from CAL FIRE. The project's impact to forest land, as defined by PRC §12220(g), would be considered ***less than significant*** with implementation of **MM 4.4.2 and MM 4.4.3.**

LEGEND

- APPROXIMATE LIMITS OF AREA TO BE DEMOLSHED
- APPROXIMATE LOCATION TO DEMOLISH UTILITY OR FENCE
- LIMITS OF TREE REMOVAL AND DISPOSAL

(E) REG. STATION VENT STRUCTURE
40' PIPELINE EASEMENT
40' PIPELINE EASEMENT
(E) 42"Ø MAIN AQUEDUCT PIPELINE
REMOVE AND DISPOSE OF (E) 42" AQUEDUCT PIPELINE APPROXIMATELY 40'
40' EASEMENT
(E) CHAINLINK FENCE TO REMAIN
DIRT PATH
(E) CHAINLINK FENCE TO REMAIN
PROTECT (E) REG. STATION WATER STORAGE TANK (T-1)
PROTECT (E) SCADA ANTENNA
BORE LOCATION #5
REMOVE AND DISPOSE OF 118.9'± CHAIN LINK FENCE
REMOVE AND DISPOSE OF (E) TREES, TYP
(E) DENSE VEGETATION
30' EASEMENT
PROTECT (E) POWER POLE
BORE LOCATION #1
(E) REGULATION STATION TANK OVERFLOW
BORE LOCATION #4
(E) FLOWLINE
PROTECT (E) REGULATION VAULT & BOOSTER PUMP STATION BUILDING
REMOVE AND DISPOSE OF REBARS AND CONCRETE NECESSARY TO ACCOMODATE PROPOSED PIPE CONNECTION
(E) CHAINLINK FENCE TO REMAIN
(E) PG&E METER PANEL
PROTECT (E) GENERATOR
(E) UTILITY VAULT
PROTECT (E) PROPANE TANK
REMOVE AND DISPOSE (E) CHAINLINK FENCE
PROPERTY LINE
PROTECT (E) MISC. UTILITY BOX
BORE LOCATION #2
REMOVE WASTEWAY CHANNEL
BORE LOCATION #3
REMOVE AND DISPOSE OF 149.6'± CHAINLINK FENCE
(E) PRIMARY CONSTRUCTION SITE VEHICLE
HIDDEN ACRES RD
REMOVE (E) GATE
PROTECT (E) POWER POLE
(E) WASTEWAY CHANNEL

SCALE IN FEET
0 20 40 80

Figure 4.2-1
Limits of Tree Removal

60% PRELIMINARY
NOT FOR CONSTRUCTION
6/14/2023

No.	REVISION	BY	DATE

REGISTERED PROFESSIONAL ENGINEER — BRIAN STIPE — No. 75955 — STATE OF CALIFORNIA
FOR REVIEW ONLY
DATE SIGNED:

WATER STORAGE TANK
BELLA VISTA WATER DISTRICT
REDDING, CA
CIVIL
HORIZONTAL CONTROL AND DEMO PLAN

PROVOST & PRITCHARD CONSULTING GROUP
An Employee Owned Company
1234 H STREET, SUITE 201
CLOVIS, CALIFORNIA 93612-2165
559.449.2700 FAX 559.449.2715
https://provostandpritchard.com/

DESIGN ENGINEER: B STIPE
LICENSE NO: 75955
DRAFTED BY: JMN
CHECKED BY:
DATE: 6/14/2023
JOB NO: 201022004
PROJECT NO:
PHASE:

0 1"
ORIGINAL SCALE SHOWN IS ONE INCH, ADJUST SCALE FOR REDUCED OR ENLARGED PLANS.

SHEET C-1

8/10/2023 10:44 AM G:\Bella Vista WD-2010\201022004-JMN Water Tank Eng Svcs\300 CAD\300 CAD Data\Revit\Output\2023-0807 Figures\C-1 HORIZONTAL CONTROL AND DEMO PLAN.dwg -Brice Black

CUMULATIVE IMPACTS

As documented above, the project would not result in impacts to agricultural resources; therefore, the project would not contribute to adverse cumulative impacts to agricultural resources.

Project implementation would result in the removal of mature trees in an area that meets the definition of forest land under PRC §12220(g). There are no other proposed developments in or adjacent to the project site that would result in the conversion of forest land. As documented above, implementation of **MM 4.4.2 and MM 4.4.3** would reduce the project's potential impacts on forest land to a less-than-significant level; therefore, the proposed project's impacts on forest resources would not be considered cumulatively considerable.

MITIGATION

Implementation of **MM 4.4.2 and MM 4.4.3.**

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan, Chapter 6.1 (Agricultural Lands). https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/61agriculture.pdf. Accessed October 2022.

___. 2004. Shasta County General Plan, Chapter 6.2 (Timberlands). https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/62timber.pdf. Accessed October 2022.

___. 2023. Shasta County Zoning Map. https://maps.co.shasta.ca.us/ShastaCountyMap/. Accessed January 2023.

State of California, Department of Conservation. 2022. Important Farmland Finder. https://maps.conservation.ca.gov/dlrp/ciff/ . Accessed January 2023.

State of California. Department of Forestry and Fire Protection. 2023. California Forest Practice Rules. https://bof.fire.ca.gov/media/hffh3kdv/post-last-week-of-dec-2023-forest-practice-rules-and-act-final.pdf. Accessed March 2023.

4.3 AIR QUALITY

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard)?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

REGULATORY CONTEXT

FEDERAL

Federal Ambient Air Quality Standards

The U.S. Environmental Protection Agency (USEPA), under the federal Clean Air Act (CAA), establishes maximum ambient concentrations for criteria air pollutants (CAPs), known as the National Ambient Air Quality Standards (NAAQSs). The NAAQSs are designed to protect the health and welfare of the populace with a reasonable margin of safety. **Table 4.3-1** identifies the seven CAPs as well as characteristics, health effects and typical sources for each CAP:

TABLE 4.3-1
Federal Criteria Air Pollutants

Pollutant	Characteristics	Primary Effects	Major Sources
Ozone (O_3)	Ozone is a colorless or bluish gas formed through chemical reactions between two major classes of air pollutants: reactive organic gases (ROG) and oxides of nitrogen (NO_X). These reactions are stimulated by sunlight and temperature; thus, ozone occurs in higher concentrations during warmer times of the year.	• Respiratory symptoms. • Worsening of lung disease leading to premature death. • Damage to lung tissue. • Crop, forest, and ecosystem damage. • Damage to a variety of materials, including rubber, plastics, fabrics, paints, and metals.	Motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.

Pollutant	Characteristics	Primary Effects	Major Sources
Carbon Monoxide (CO)	Carbon monoxide is an odorless, colorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline and wood. Because CO is emitted directly from internal combustion engines, motor vehicles operating at slow speeds are the primary source of carbon monoxide.	• Chest pain in patients with heart disease. • Headache. • Light-headedness. • Reduced mental alertness.	Motor vehicle exhaust, combustion of fuels, combustion of wood in woodstoves and fireplaces.
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a reddish-brown gas formed when nitrogen (N_2) combines with oxygen (O_2). Nitrogen oxides are typically created during combustion processes and are major contributors to smog formation and acid deposition. Of the seven types of nitrogen oxide compounds, NO_2 is the most abundant in the atmosphere and is related to traffic density.	• Respiratory symptoms. • Damage to lung tissue. • Worsening of cardiovascular disease. • Precursor to ozone and acid rain. • Contributes to global warming and nutrient overloading which deteriorates water quality. • Causes brown discoloration of the atmosphere.	Automobile and diesel truck exhaust, petroleum-refining operations, industrial sources, aircraft, ships, railroads, and fossil-fueled power plants.
Sulfur Dioxide (SO_2)	Sulfur dioxide is a colorless, nonflammable gas that results mainly from burning high-sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries.	• Respiratory symptoms. • Worsening of cardiovascular disease. • Damage to a variety of materials, including marble, iron, and steel. • Damages crops and natural vegetation. • Impairs visibility. • Precursor to acid rain.	Petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and large ships, and fuel combustion in diesel engines.
Particulate Matter ($PM_{2.5}$ and PM_{10})	Particulate matter is a major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols that are small enough to remain suspended in the air for a long period of time. Particulate matter with a diameter of 10 microns or less (PM_{10}) is inhalable into the lungs and can induce adverse health effects. Fine particulate matter is defined as particles that are 2.5 microns or less in diameter ($PM_{2.5}$). Therefore, $PM_{2.5}$ comprises a portion of PM_{10}.	• Premature death. • Hospitalization for worsening of cardiovascular disease. • Hospitalization for respiratory disease • Asthma-related emergency room visits. • Increased symptoms, increased inhaler usage	Dust- and fume-producing construction activities, power plants, steel mills, chemical plants, unpaved roads and parking lots, woodburning stoves and fireplaces, wildfires, motor vehicles, and other combustion sources. Also a result of photochemical processes.

Pollutant	Characteristics	Primary Effects	Major Sources
Lead (Pb)	A heavy metal that occurs both naturally in the environment and in manufactured products.	• Impaired mental functioning in children • Learning disabilities in children • Brain and kidney damage. • Reproductive disorders. • Osteoporosis.	Lead-based industrial production (e.g., battery production and smelters), recycling facilities, combustion of leaded aviation gasoline by piston-driven aircraft, and crustal weathering of soils followed by fugitive dust emissions.

Clean Air Act – Federal General Conformity Rule

The General Conformity Rule of the CAA requires that all federally funded projects conform to the applicable State Implementation Plan (SIP). The Conformity Rule applies to projects in areas that are designated as nonattainment or maintenance areas for any of the six federal criteria air pollutants when the total direct and indirect emissions of the criteria pollutant (or its precursors) are at or above the de minimis thresholds listed in Code of Federal Regulations (CFR) Title 40, §93.153(b). Because Shasta County is designated as attainment or unclassified areas for all federal air quality standards, federal conformity requirements do not apply to the proposed project.

STATE

State Ambient Air Quality Standards

The California CAA establishes maximum concentrations for the seven federal CAPs, as well as the four additional air pollutants identified below. The four additional standards are intended to address regional air quality conditions, not project-specific emissions. These maximum concentrations are known as the California Ambient Air Quality Standards (CAAQSs). The California Air Resources Board (CARB) has jurisdiction over local air districts and has established its own standards for each CAP under the CAAQS. For areas within the State that have not attained air quality standards, the CARB works with local air districts to develop and implement attainment plans to obtain compliance with both federal and State air quality standards.

Visibility-Reducing Particles. Visibility-reducing particles vary greatly in shape, size, and chemical composition, and come from a variety of natural and manmade sources. Major sources include wildfires, residential fireplaces and woodstoves, windblown dust, ocean sprays, biogenic emissions, dust and fume-producing construction, industrial and agricultural operations, and fuel combustion. Primary effects include visibility impairment, respiratory symptoms, and worsening of cardiovascular disease.

Sulfate (SO_4). Sulfate is oxidized to sulfur dioxide (SO_2) during the combustion process and is subsequently converted to sulfate compounds in the atmosphere. Major sources include industrial processes and the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. Primary effects include respiratory symptoms, worsening of cardiovascular disease, damage to a variety of materials, including marble, iron, and steel, damage to crops and natural vegetation, and visibility impairment.

Hydrogen Sulfide (H_2S). Hydrogen sulfide is a colorless gas with the odor of rotten eggs. Major sources include geothermal power plants, petroleum refineries, and wastewater treatment plants. Primary effects include eye irritation, headache, nausea, and nuisance odors.

Vinyl Chloride (chloroethene). Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. It is also listed as a toxic air contaminant because of its carcinogenicity. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites due to microbial breakdown of chlorinated solvents. Primary effects include dizziness, drowsiness, headaches, and liver damage.

Table 4.3-2 provides the federal and State ambient air quality standards:

TABLE 4.3-2
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards
Ozone (O_3)	8 Hour	0.070 ppm (137µg/m^3)	0.070 ppm (137µg/m^3)
	1 Hour	0.09 ppm (180 µg/m^3)	–
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2)	24 Hour	0.04 ppm (105 µg/m^3)	0.14
	3 Hour	–	–
	1 Hour	0.25 ppm (665 µg/m^3)	75 ppb (196 µg/m^3)
	Annual Arithmetic Mean	–	0.030 ppm
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	–
	24 Hour	50 µg/m^3	150 µg/m^3
Particulate Matter – Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3
	24 Hour	–	35 µg/m^3
Sulfates	24 Hour	25 µg/m^3	–
Lead	Calendar Quarter	–	1.5 µg/m^3
	30 Day Average	1.5 µg/m^3	–
	Rolling 3-Month Average	None	0.15 µg/m^3
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	–
Vinyl Chloride (chloroethene)	24 Hour	0.01 ppm (26 µg/m^3)	–
Visibility-Reducing Particles	8 Hour	–	–

Source: CARB, 2022a; CARB, 2016. Notes: mg/m^3=milligrams per cubic meter; ppm=parts per million; ppb=parts per billion; µg/m^3=micrograms per cubic meter

Toxic Air Contaminants (TACs)

The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (Assembly Bill 2588) was adopted in response to public concern regarding potential adverse health effects associated with emissions of toxic air contaminants (TACs). TACs are regulated under the California CAA. A "hot spot" is an area where air toxics levels are higher than in the overall region, which may be caused by emissions from a specific facility.

Sources of TACs include industrial processes, commercial operations (e.g., gasoline stations and dry cleaners), grading and demolition of structures (asbestos), and diesel-motor vehicle exhaust. Facilities found to release high volumes of TACs are required to conduct a detailed health risk assessment that estimates emission impacts to the neighboring community and recommends mitigation to minimize TACs (CARB, 2022b).

In-Use Off-Road Diesel-Fueled Fleets Regulation

CARB adopted the In-Use Off-Road Diesel-Fueled Fleets Regulation to reduce NO_X, diesel particulate matter, and other criteria pollutant emissions from off-road heavy-duty diesel vehicles in California. The regulation covers a wide range of vehicle types, including, but not limited to, vehicles used in construction, mining, industrial operations, and other industries. The Regulation requires that fleets meet an increasingly stringent set of fleet average targets, culminating in 2023 for large and medium fleets, and in 2028 for small fleets. The most stringent fleet average target generally corresponds to a 2012 model year, or a Tier 3 average standard (CARB, 2022c).

All self-propelled off-road diesel vehicles 25 horsepower (HP) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the regulation, including rented and leased vehicles. The regulation imposes limits on idling, restricts adding older vehicles into fleets, and requires fleet owners to reduce their emissions by retiring, replacing, repowering, or retrofitting older engines. In addition, the Portable Equipment Registration Program (PERP) requires all portable engines 50 HP or greater to be registered in PERP or be permitted by a local air district.

The regulations were most recently updated on November 17, 2022, and require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles in California earlier or beyond what is required of fleets in the Off-Road Regulation. The updated regulations also prohibit the addition of high-emitting vehicles to a fleet and require the use of renewable diesel (99 or 100 percent renewable) in off-road diesel vehicles, subject to certain exemptions. The amended regulations will be phased in starting in 2024 through the end of 2036 (CARB, 2023; 2022d).

The amended regulations require that beginning January 1, 2024, public agencies that award or enter into contracts for public works projects obtain fleet Certificates of Reported Compliance from fleets prior to awarding public works contracts. These requirements will ensure that only compliant fleets are being used on public works projects.

CARB estimates that from 2024 through 2038, the amendments will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NO_X and 2,717 tons of $PM_{2.5}$. About half of those additional reductions are expected to be realized within the first five years of implementation.

Mobile Source Strategy

CARB's 2020 Mobile Source Strategy (Strategy), describes the State's strategy for containing air pollutant emissions from vehicles, and quantifies growth in vehicle miles traveled that is compatible with achieving state climate targets (CARB, 2021). The Strategy demonstrates how the State can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risks from transportation emissions, and reduce petroleum consumption over the next fifteen years.

LOCAL

Shasta County Air Quality Management District (SCAQMD):

The SCAQMD has the responsibility of enforcing federal and state air quality regulations in Shasta County. The SCAQMD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs, and it regulates agricultural burning. All projects in Shasta County are subject to applicable SCAQMD rules and regulations in effect at the time of construction. Descriptions of specific rules applicable to the proposed project may include, but are not limited to:

- SCAQMD Rule 3-2, Specific Air Contaminants, states that no person shall discharge contaminants from any single source into the atmosphere above the amounts designated in the Rule.
- Cutback and emulsified asphalt application shall be conducted in accordance with SCAQMD Rule 3-15, Cutback and Emulsified Asphalt.
- SCAQMD Rule 3-16, Fugitive, Indirect, or Non-Traditional Sources, controls the emission of fugitive dust during earth-moving, construction, demolition, bulk storage, and conditions resulting in wind erosion.
- Architectural coatings and solvents shall be compliant with SCAQMD Rule 3-31, Architectural Coatings.

Shasta County is currently designated as a non-attainment-transitional area for State ozone standards; the County is designated as an attainment or unclassified area for all other federal and State ambient air quality standards (CARB, 2022e).

The SCAQMD, along with other air districts in the Northern Sacramento Valley Air Basin (NSVAB), jointly prepared an Air Quality Attainment Plan (AQAP) for the purpose of achieving and maintaining healthful air quality throughout the air basin. The Northern Sacramento Valley Planning Area (NSVPA) 2021 AQAP constitutes the region's State Implementation Plan (SIP) and was adopted by the SCAQMD Board on April 5, 2022.

The 2021 AQAP states that air pollution transport studies have demonstrated that a significant number of the ozone violations occurring in Shasta County are caused when pollutants from urban areas are transported aloft throughout the air basin. Shasta County's primary emphasis in implementing the 2021 AQAP is to attempt to reduce emissions from mobile sources through public education and grant programs.

As shown in **Table 4.3-3**, Shasta County has adopted air quality thresholds for emissions of Reactive Organic Gases (ROG), Oxides of Nitrogen (NO_x) and Particulate Matter, 10 microns in size (PM_{10}) to determine the level of significance for projects subject to CEQA review (Shasta County Rule 2:1, New Source Review, Part 300).

TABLE 4.3-3
Thresholds of Significance for Criteria Pollutants of Concern

Level	ROG	NO_X	PM_{10}
Level A: Indirect Source	25 lbs/day	25 lbs/day	80 lbs/day
Level B: Indirect Source	137 lbs/day	137 lbs/day	137 lbs/day
Direct Sources	25 tons/year	25 tons/year	25 tons/year

Source: 2004 Shasta County General Plan, Chapter 6.5 (Air Quality).

All discretionary projects in Shasta County are required to implement Standard Mitigation Measures (SMMs) to minimize emissions and contribute to a reduction in cumulative impacts. Projects that generate unmitigated emissions above Level A must implement Best Available Mitigation Measures (BAMM) in addition to the SMMs. If a project is not able to reduce emissions below the Level B threshold, emissions offsets are required. If after applying the emissions offsets, the project emissions still exceed the Level B threshold, an Environmental Impact Report is required.

Shasta County

The County's General Plan includes the following Objective and Policies related to air quality:

Air Quality Element		
Objective	AQ-2	To meet the requirements of the: (1) Federal Clean Air Act, and (2) the California Clean Air Act as soon as feasible.
Policies	AQ-2b	Work to accurately determine and fairly mitigate the local and regional air quality impacts of projects proposed in the unincorporated portions of Shasta County.
	AQ-2c	New projects shall be required to reduce their respective air quality impacts to below levels of significance, or proceed as indicated in Policy AQ-2e.
	AQ-2d	Ensure that air quality impacts identified during CEQA review are; (1) consistently and fairly mitigated, and (2) mitigation measures are feasible.

AQ-2e	Cooperate with the AQMD in assuring that new projects with stationary sources of emissions of non-attainment pollutants or their precursors that exceed 25 tons per year shall provide appropriate emission offsets. A comparable program which offsets indirect emissions of these pollutants exceeding 25 tons per year from development projects shall also be utilized to mitigate air pollution impacts. An Environmental Impact Report will be required for all projects that have unmitigated emissions of non-attainment pollutants exceeding 25 tons per year.
AQ-2f	Require appropriate Standard Mitigation Measures and Best Available Mitigation Measures on all discretionary land use applications as recommended by the AQMD in order to mitigate both direct and indirect emissions of non-attainment pollutants.

DISCUSSION OF IMPACTS

Questions A and B

As discussed under Regulatory Context, the NSVAB 2021 AQAP serves as the air quality plan for the region. The project would result in the temporary generation of ROG, NO_X, PM_{10}, and other regulated pollutants during construction. ROG and NO_X emissions would be associated with employee vehicle trips, delivery of materials, and construction equipment exhaust. PM_{10} would be generated during site preparation, excavation, road paving, and from exhaust associated with construction equipment.

Project emissions were estimated using Version 2022.1.1.12 of the California Emissions Estimator Model (CalEEMod). CalEEMod reports both maximum daily emissions (pounds per day) and overall annual emissions (tons per year) for both construction and operational emissions. CalEEMod does not directly calculate ozone (O_3) emissions. Instead, emissions of ozone precursors are calculated. Ozone precursors are quantified as ROG and NO_X which, when released, interact in the atmosphere and produce ozone. Output files, as well as all site-specific inputs and assumptions, are provided in **Appendix A**. Project-specific assumptions and inputs include, but are not limited to, the following. CalEEMod provides default values when site-specific inputs are not available.

- Emissions from construction are based on all construction-related activities, including but not limited to grading, site preparation, application of architectural coatings, use of construction equipment, material hauling, trenching, and paving.
- For purposes of the CalEEMod Analysis, it was assumed that construction would start in the fall of 2023 and occur over a period of approximately 18 months.
- Total land disturbance would be approximately 4 acres. To represent a worst-case scenario, it was estimated that 2,200 cubic yards (CY) of fill material would be imported and 2,200 CY would be exported; however, it is anticipated that earthwork volumes of cut and fill will balance and that there will be no net export of fill material.
- The total area for architectural coatings would be ±15,000 square feet.
- The total weight of demolition debris to be removed from the project area would be approximately 10 tons.
- It was conservatively estimated that 1.22 acres of Hidden Acres Road would be repaired/ restored to pre-existing conditions following completion of the project.
- The project would implement SCAQMD rules, regulations, and standard mitigation measures.
- Approximately 59 trees with a diameter of 6-inch DBH and larger would be removed to facilitate construction.

Construction Emissions

Table 4.3-4 shows the highest daily levels of project construction emissions regardless of construction phase.

TABLE 4.3-4
Estimated Construction Emissions

Year	Pollutants of Concern											
	ROG		NO_X		PM_{10}		$PM_{2.5}$		CO		SO_2	
	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year
2023	6.95	0.05	**67.3**	0.53	20.5	0.16	11.4	0.09	60.6	0.49	0.09	< 0.005
2024	3.23	0.17	**31.4**	1.54	6.42	0.11	3.58	0.02	33.3	1.80	0.06	< 0.005
2025	15.3	0.10	17.1	0.29	0.94	0.01	0.71	< 0.005	23.0	0.38	0.04	< 0.005

Source: CalEEMod, 2023

As shown in **Table 4.3-4,** construction of the proposed project would not exceed the County's Level A or Level B thresholds for ROG or PM_{10} in any of the construction years, and would not exceed the Level A or Level B thresholds for NO_x in the construction year 2025. Construction would exceed the County's Level A threshold of 25 pounds per day for NO_x emissions in construction years 2024 and 2025 but would not exceed the Level B threshold of 137 pounds per day.

As stated under Regulatory Context, all discretionary projects in Shasta County are required to implement SMMs to minimize emissions and contribute to a reduction in cumulative impacts. Projects that generate unmitigated emissions above Level A must implement BAMMs in addition to the SMMs. **Mitigation Measure (MM)** 4.3.1 includes SMMs that would apply to the project. **MM 4.3.2** includes BAMMs to minimize NO_X emissions during construction.

In addition, as stated under Regulatory Context, the In-Use Off-Road Diesel-Fueled Fleets Regulation was most recently updated on November 17, 2022, and require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles in California earlier or beyond what is required of fleets in the previous regulation. The updated regulations also require the use of renewable diesel in off-road diesel vehicles. The amended regulations will be phased in starting in 2024 through the end of 2036. CARB estimates that from 2024 through 2038, the amendments will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NO_X and 2,717 tons of $PM_{2.5}$. About half of those additional reductions are expected to be realized within the first five years of implementation.

Operational Emissions

Operation of the project would generate criteria pollutants from area sources (e.g., maintenance activities such as painting, etc.) and mobile sources (e.g., vehicle trips for employees, visitors, vendors, deliveries, etc.), as well as indirect emissions associated with energy use (e.g., operation of the 3 MG water storage tank, pump station, controls, and lighting. Although the proposed project does not include installation of new renewable energy systems, the project will offset a portion of the increased power demand with energy generated from the District's existing 693-kilowatt solar power facility that is located west of the Water Tank Site. Vehicle traffic on graveled surfaces would also generate $PM_{2.5}$ and PM_{10} emissions. **Table 4.3-5** shows estimated operational emissions for the proposed project.

TABLE 4.3-5
Estimated Operational Emissions

Source	Pollutants of Concern											
	ROG		NO_X		PM_{10}		$PM_{2.5}$		CO		SO_2	
	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year	Max. lbs/day	Max. tons/year
Mobile	0.44	0.06	0.40	0.07	0.18	0.03	0.04	0.01	2.91	0.41	0.01	< 0.005
Area	0.41	0.07	0	0	0	0	0	0	0	0	0	0
Energy	0.03	< 0.005	0.46	0.08	0.04	0.01	0.04	0.01	0.39	0.07	< 0.005	< 0.005
Stationary	5.91	0.03	16.5	0.08	0.87	< 0.005	0.87	< 0.005	21.4	0.11	0.03	< 0.005
Vegetation	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0	0	< 0.005	< 0.005
Total	**6.78**	**0.17**	**17.4**	**0.59**	**1.08**	**0.04**	**0.94**	**0.02**	**24.7**	**0.59**	**0.04**	**< 0.005**

Source: CalEEMod, 2023

Note: Totals may not add due to rounding.

As shown in **Table 4.3-5**, operational emissions associated with the proposed project would not exceed the County's Level A or Level B thresholds for ROG, NO_X, or PM_{10} and no mitigation is required.

For both construction and operational emissions, the proposed project would not result in significant impacts associated with ozone (O_3), lead (Pb), hydrogen sulfide (H_2S), vinyl chloride, or visibility-reducing particles as discussed below.

Ozone. CalEEMod does not directly calculate ozone emissions. Instead, the emissions associated with ozone precursors (ROG and NO_X) are calculated. Construction would exceed the County's Level A threshold of 25 pounds per day for NO_X emissions in construction year 2024 but would not exceed the Level B threshold of 137 pounds per day. **MM 4.3.1** includes SMMs that would apply to the project, and **MM 4.3.2** includes BAMMs to minimize NO_X emissions during construction. Implementation of **MM 4.3.1** and **MM 4.3.2** and compliance with State regulations ensures that impacts associated with ozone precursor emissions are less than significant.

Lead. Elevated levels of airborne lead at the local level are usually found near industrial operations that process materials containing lead, such as smelters and battery manufacturing/ recycling facilities. As these conditions are not applicable to the proposed project, there is no potential for lead emissions.

Hydrogen Sulfide. Hydrogen sulfide is formed during the decomposition of organic material in anaerobic environments, including sewage treatment processes. The proposed project would not result in an increase in wastewater generation; therefore, there is no potential for an increase in hydrogen sulfide emissions.

Vinyl Chloride. Vinyl chloride is used to manufacture PVC plastic and other vinyl products. Additionally, vinyl chloride is produced during the microbial breakdown of chlorinated solvents (e.g., engine cleaner, degreasing agent, adhesive solvents, paint removers, etc.). The project does not include any components that would generate vinyl chloride emissions.

Visibility-Reducing Pollutants. Visibility-reducing pollutants generally consist of sulfates, nitrates, organics, soot, fine soil dust, and coarse particulates. These pollutants contribute to the regional haze that impairs visibility, in addition to affecting public health. According to the California Regional Haze Plan (CARB, 2022f), natural wildfires and biogenic emissions are the primary contributors to visibility-reducing pollutants. For the proposed project, visibility-reducing pollutants (e.g., $PM_{2.5}$ and PM_{10}), would be generated only during construction activities. Because only relatively low amounts of particulates would be generated, potential impacts with respect to visibility-reducing pollutants are less than significant.

Compliance with applicable federal, State, and local regulations and implementation of **MM 4.3.1** and **MM 4.3.2** ensures that the project would not conflict with the NSVAB 2021 AQAP and would not result in a cumulatively considerable net increase in ROG and NO_X emissions; impacts would be ***less than significant.***

Question C

See discussion under Regulatory Context and **Questions A and B**. Sensitive receptors are individuals or groups of people that are more affected by air pollution than others, including young children, elderly people, and people weakened by disease or illness. Locations that may contain high concentrations of sensitive receptors include residential areas, schools, playgrounds, childcare centers, hospitals, convalescent homes, and retirement homes.

As stated in Questions A and B above, the proposed project does not have any components that would result in long-term operational emissions. The proposed project includes construction activities adjacent to single-family residences on Hidden Acres Road. As discussed above, the proposed project would generate PM_{10} and other pollutants during construction. Although these emissions would cease with completion of construction work, sensitive uses adjacent to the construction area could be exposed to elevated dust levels and other pollutants.

Compliance with federal, State, and local regulations, and implementation of **MM 4.3.1** and **4.3.2** would minimize the exposure of sensitive receptors to substantial pollutant concentrations and ensure that impacts would be ***less than significant.***

Question D

The project does not include any components that would result in the generation of long-term odors or similar emissions adversely affecting a substantial number of people. Construction activities that have the potential to emit odors and similar emissions include operation of diesel equipment, generation of fugitive dust, and paving (asphalt). Odors and similar emissions from construction are intermittent and temporary, and generally would not extend beyond the construction area. Due to the temporary and intermittent nature of construction odors, impacts during construction would be ***less than significant.***

CUMULATIVE IMPACTS

Past, present, and future development projects contribute to a region's air quality conditions on a cumulative basis; therefore, by its very nature, air pollution is largely a cumulative impact. If a project's individual emissions contribute toward exceedance of the NAAQS or the CAAQS, then the project's cumulative impact on air quality would be considered significant.

The proposed project combined with future development within the project area could lead to cumulative impacts to air quality. However, as stated under Regulatory Context, all projects in the County are subject to SCAQMD rules and regulations, including mitigation measures that address impacts during construction. As documented above, the project would not result in significant impacts associated with hydrogen sulfide/odors. In addition, implementation of **MM 4.3.1** and **MM 4.3.2**, and compliance with the regulations identified under Regulatory Context, ensures that the proposed project would have a less-than-significant cumulative impact on local and regional air quality.

MITIGATION

MM 4.3.1 The following measures shall be implemented throughout construction:

a. All material excavated, stockpiled, or graded shall be covered or sufficiently watered as necessary to prevent fugitive dust from leaving property boundaries and causing a public nuisance or a violation of ambient air quality standards.

b. All material transported offsite shall be either sufficiently watered or securely covered to prevent a public nuisance.

c. All areas (other than paved roads) with vehicle traffic shall be watered periodically or have dust palliatives applied for stabilization of dust emissions.

d. All on-site vehicles shall be limited to a speed of 15 miles per hour on unpaved roads.

e. All land clearing, grading, earth moving, and excavation activities on the project site shall be suspended when winds are causing excessive dust generation.

f. All trucks hauling dirt, sand, soil, or other loose materials shall be covered or shall maintain at least two feet of free board in accordance with the requirements of Section 23114 of the California Vehicle Code.

g. Paved streets in and adjacent to the construction site shall be swept or washed at the end of the day (or more frequently if needed) to remove excessive accumulations of silt and/or mud resulting from activities on the development site.

h. When not in use, motorized construction equipment shall not be left idling for more than five minutes.

i. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications.

MM 4.3.2 The following measures shall be implemented to minimize NO_X emissions during construction:

a. Prior to commencement of construction activities, the contractor shall provide evidence to the Bella Vista Water District (BVWD) that all diesel-fueled construction equipment including but not limited to rubber-tired dozers, graders, scrapers, excavators, asphalt paving equipment, cranes, and tractors, meets or exceeds California Air Resources Board (CARB) Tier 4 final off-road emissions standards. If more stringent requirements are in place at the time of construction, the most stringent requirements shall apply.

   An exemption from these requirements may be granted by the BVWD in the event that the contractor provides documentation that Tier 4 Final equipment is not reasonably available and that corresponding reductions in NO_X emissions would be achieved from other construction equipment.

b. Alternatively-fueled construction equipment shall be used, where feasible (e.g., compressed natural gas (CNG), liquefied natural gas (LNG), propane, biodiesel, or advanced technologies that do not rely on diesel fuel).

DOCUMENTATION

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4.4 BIOLOGICAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community, including oak woodland, identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c. Have a substantial adverse effect on state or federally protected wetlands, (including, but not limited to, marsh, vernal pool, coastal wetlands, 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?	☐	☐	☐	☒

REGULATORY CONTEXT

FEDERAL

Federal Clean Water Act

Section 404

Under Section 404 of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill material into wetlands and waters of the U.S. The USACE requires that a permit be obtained prior to the placement of structures within, over, or under navigable waters and/or prior to discharging dredged or fill material into waters below the ordinary high-water mark (OHWM). There are several types of permits issued by the USACE that are based on the project's location and/or level of impact. Regional general permits are issued for recurring activities at a regional level. Nationwide permits (NWPs) authorize a wide variety of minor activities that have minimal effects. Projects that are not covered under a regional general permit and do not qualify for a NWP are required to obtain a standard permit (e.g., individual permit or letter of permission).

Section 401

Under Section 401 of the CWA, a project requiring a USACE Section 404 permit is also required to obtain a State Water Quality Certification (or waiver) to ensure that the project will not violate established State water quality standards. The Regional Water Quality Control Board (RWQCB) regulates waters of the

State and has a policy of no-net-loss of wetlands. The RWQCB typically requires mitigation for impacts to wetlands before it will issue a water quality certification.

Federal Endangered Species Act (FESA)

FESA of 1973 requires that all federal agencies ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of critical habitat. Projects that would result in "take" of any federally listed species are required to obtain authorization from National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) through either Section 7 (interagency consultation) or Section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project.

Federal Migratory Bird Treaty Act (MBTA)

Under the MBTA of 1918, as amended, migratory bird species listed in CFR Title 50, §10.13, including their nests and eggs, are protected from injury or death, and any project-related disturbances. The MBTA applies to over 1,000 bird species, including geese, ducks, shorebirds, raptors, and songbirds, some of which were near extinction before MBTA protections were put in place in 1918. The MBTA provides protections for nearly all native bird species in the U.S., including non-migratory birds.

Fish and Wildlife Conservation Act

Under the Fish and Wildlife Conservation Act of 1980, as amended, the USFWS maintains lists of migratory and non-migratory birds that, without additional conservation action, are likely to become candidates for listing under the FESA. These species are known as Birds of Conservation Concern and represent the highest conservation priorities.

Bald and Golden Eagle Protection Act

This Act provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the taking, possession, and commerce of such birds and their occupied and unoccupied nests.

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)

The MSFCMA, also known as the Sustainable Fisheries Act, requires the identification of Essential Fish Habitat (EFH) for federally managed fishery species and implementation of appropriate measures to conserve and enhance EFH that could be affected by project implementation. All federal agencies must consult with NMFS on projects authorized, funded, or undertaken by that agency that may adversely affect EFH for species managed under the MSFCMA.

STATE

California Endangered Species Act (CESA)

Under CESA, the Fish and Game Commission is responsible for listing and delisting threatened and endangered species, including candidate species for threatened or endangered status. California Department of Fish and Wildlife (CDFW) provides technical support to the Commission, and may submit listing petitions and assist with the evaluation process. CDFW maintains documentation on listed species, including occurrence records. In addition, CDFW maintains a list of fully protected species, most of which are also listed as threatened or endangered. CDFW also maintains a list of species of special concern (SSC). SSC are vulnerable to extinction but are not legally protected under CESA; however, impacts to SSC are generally considered significant under CEQA.

CESA prohibits the take of State-listed threatened and endangered species, but CDFW has the authority to issue incidental take permits under special conditions when it is demonstrated that impacts are minimized and mitigated. Fully protected species may not be taken or possessed at any time, and no licenses or permits may be issued for their take. One exception allows the collection of fully protected species for scientific research.

California Fish and Game Code §1600-1616 (Streambed Alteration)

California Fish and Game Code §1600 *et seq.*, requires that a project proponent enter into a Streambed Alteration Agreement (SAA) with CDFW prior to any work that would divert or obstruct the natural flow of any river, stream, or lake; change the bed, channel, or bank of any river, stream, or lake; use material from any river, stream, or lake; and/or deposit or dispose of material into any river, stream, or lake. An SAA will typically include conditions that minimize/avoid potentially significant adverse impacts to riparian habitat and waters of the state.

California Fish and Game Code §3503 and 3503.5 (Nesting Bird Protections)

These sections of the Code provide regulatory protection to resident and migratory birds and all birds of prey within the State and make it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Code.

California Fish and Game Code §1900-1913 (Native Plant Protection Act)

The Native Plant Protection Act (NPPA) includes measures to preserve, protect, and enhance native plants that are listed as rare and endangered under the CESA. The NPPA states that no person shall take, possess, sell, or import into the state any rare or endangered native plant, except in compliance with provisions of the Act.

Oak Woodlands Conservation (SB 1334, 2004)

SB 1334 of 2004 added §21083.4 to CEQA to require counties to determine whether a project within the county's jurisdiction may result in the conversion of oak woodlands that would have a significant effect on the environment. If a county determines that there may be a significant effect on oak woodlands, the county must require mitigation to minimize/offset the conversion of oak woodlands.

LOCAL

Shasta County

The County's General Plan includes the following Objective and Policy that apply to the proposed project:

Chapter 6.7, Fish and Wildlife		
Objective	FW-1	Protection of significant fish, wildlife, and vegetation resources.
Policy	FW-c	Projects that contain or may impact endangered and/or threatened plant or animal species, as officially designated by the California Fish and Game Commission and/or the U. S. Fish and Wildlife Service, shall be designed or conditioned to avoid any net adverse project impacts on those species.

DISCUSSION OF IMPACTS

Questions A and B

The evaluation of potential impacts on candidate, sensitive, and/or special-status species entailed records searches and field evaluations conducted by ENPLAN.

The records search included a review of California Natural Diversity Database (CNDDB) records for special-status plant and wildlife species (CDFW 2023a); California Native Plant Society (CNPS) records for special-status plant species (CNPS, 2023); federal records for listed, proposed, and candidate plant and wildlife species under jurisdiction of the USFWS and NMFS (USFWS, 2023); critical habitat data maintained by the USFWS and NMFS (USFWS, 2022; NMFS, 2021, 2023a); and EFH data maintained by the NMFS (NMFS, 2023b). Results of the records searches are included in **Appendix B**.

To determine the presence/absence of special-status plant and animal species in the study area, ENPLAN biologists conducted botanical and wildlife surveys on August 31, 2021; March 26, April 23,

May 3, October 27, and November 29, 2022; and January 10, and April 6, 2023. The special-status plant species potentially occurring in the study area would have been evident at the time the fieldwork was conducted. Some of the special-status wildlife species would not have been evident at the time the fieldwork was conducted; however, determination of their potential presence could readily be made based on observed habitat characteristics.

Special-Status Plant Species

Review of the USFWS species list for the project area identified one federally listed plant species, slender Orcutt grass (federally threatened, State candidate, Rare Plant Rank [RPR] 1B.1), as potentially being present in the project area.

Review of CNDDB records showed that no special-status plant species have been mapped at the project site. The following special-status plant species have been reported within a five-mile radius of the project site: Ahart's paronychia (RPR 1B.1), big-scale balsamroot (RPR 1B.2), Boggs Lake hedge-hyssop (State Endangered, RPR 1B.2), legenere (RPR 1B.1), Red Bluff dwarf rush (RPR 1B.1), Sanford's arrowhead (RPR 1B.2), silky cryptantha (RPR 1B.2), and watershield (RPR 2B.3). In addition, the following non-status plants have been reported within a five-mile radius of the project site: dubious pea (RPR 3), Henderson's bent grass (RPR 3.2), and woolly meadowfoam (RPR 4.2).

The CNPS Inventory identified the following additional special-status plants within the U.S. Geologic Survey's (USGS) Bella Vista, Palo Cedro, Enterprise, and Project City 7.5-minute quadrangles: Bellinger's meadowfoam (RPR 1B.2), oval-leaved viburnum (RPR 2B.3), and Shasta snow-wreath (State Candidate, RPR 1B.2). Additionally, the following non-status plants have been reported in these quadrangle: broad-lobed leptosiphon (RPR 4.3), depauperate milk-vetch (RPR 4.3), northern clarkia (RPR 4.3), Redding checkerbloom (RPR 3) Sanborn's onion (RPR 4.2), Shasta County arnica (RPR 4.2), Shasta maidenhair fern (RPR 4.3), thread-leaved beakseed (RPR 4.2), and tripod buckwheat (RPR 4.2).

The potential for each special-status plant species to occur in the project site is evaluated in **Appendix B**. As documented in Appendix B, no special-status plant species were observed during the botanical survey, nor are any expected to be present; therefore, the proposed project would have no impact on special-status plant species.

One non-status plant, Redding checkerbloom (RPR 3), was observed at the Water Tank Site. CDFW staff is currently re-evaluating the status of Redding checkerbloom and has requested demographic data for the occurrences to assist in the agency's status re-evaluation.

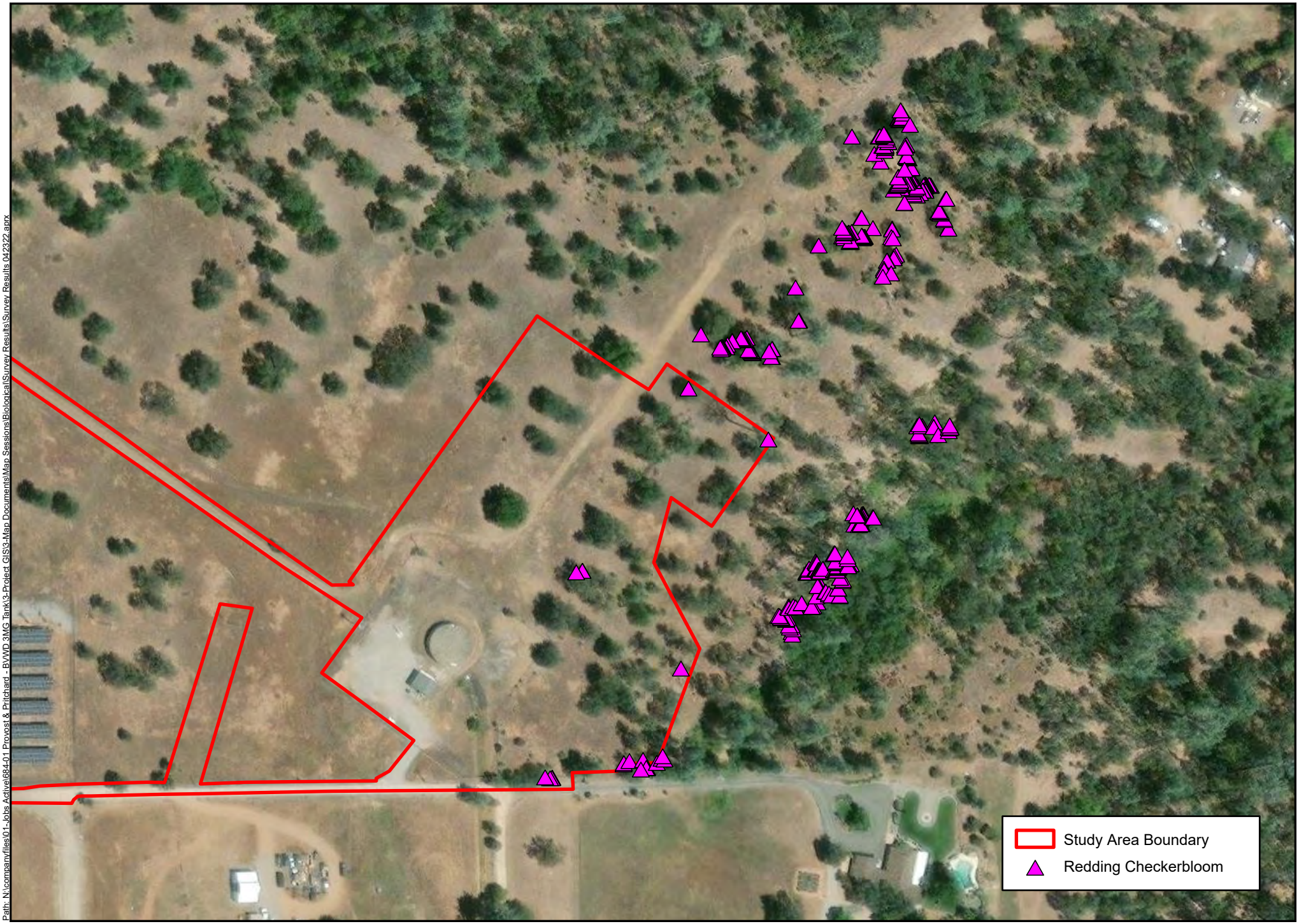
Redding Checkerbloom (*Sidalcea celata*)

Redding checkerbloom is currently assigned RPR 3 (Needs Review – Plants About Which More Information Is Needed). The plant generally occurs in small populations in open to moderately dense oak woodlands in Shasta and Tehama counties. It is frequently found on north- and east- facing slopes and on the north and east sides of trees and shrubs, but may also occur on flats and in relatively open habitats.

As shown in **Figure 4.4-1**, nine plants were observed within the study area boundary at the Water Tank Site; 395 additional plants were observed outside the current study area boundary, mostly on a well-shaded southeast-facing slope and a less shaded east-facing slope. Because the proposed project would affect approximately two percent of the overall population, impacts are considered negligible. Further, CDFW has historically not required mitigation for the loss of RPR 3 species.

Special-Status Animal Species

Review of the USFWS species list for the project area identified the following federally listed wildlife species as potentially being present in the project area: northern spotted owl (Federally Threatened [FT]), monarch butterfly (Candidate), valley elderberry longhorn beetle (FT), conservancy fairy shrimp (Federally Endangered [FE]), Shasta crayfish (FE), vernal pool fairy shrimp (FT), and vernal pool tadpole shrimp (FE).



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All depictions are approximate. Not a survey product. 07.06.23

0 150 Feet

Figure 4.4-1

Redding Checkerbloom Population

ENPLAN

The National Marine Fisheries Service identifies three special-status anadromous fish species as potentially occurring in the USGS Bella Vista, Palo Cedro, Enterprise, and Project City 7.5-minute quadrangles: Central Valley spring-run (CVSR) Chinook salmon (FT), Sacramento River winter-run (SRWR) Chinook salmon (FE), and California Central Valley (CCV) steelhead (FT). There is also a potential for sDPS green sturgeon (FT) to be present in the Enterprise quadrangle.

Review of the CNDDB records showed that no special-status wildlife species have been reported within the project site. The following special-status wildlife species have been reported within a five-mile radius of the project area: bald eagle (State Fully Protected [SFP]), bank swallow (ST), CVSR Chinook salmon (FT, ST), SRWR Chinook salmon (FE, SE), CCV steelhead (FT), foothill yellow-legged frog – Northwest/North Coast clade (State Species of Special Concern [SSSC]), sDPS green sturgeon (FT), pallid bat (SSSC), spotted bat (SSSC), tricolored blackbird (ST, SSSC), western pond turtle (SSSC), and western spadefoot (SSSC). The following non-status wildlife species have also been reported within a five-mile radius of the project area: California linderiella, North American porcupine, Shasta chaparral, silver-haired bat, and western pearlshell.

The potential for each special-status animal species to occur in the project site is evaluated in **Appendix B**. As documented in **Appendix B**, the study area has the potential to support the following special-status animal species:

Monarch Butterfly (*Danaus plexippus* pop.1), Federal Candidate

Monarch butterflies are currently listed as a Candidate species for federal listing under FESA. Monarch butterflies are reliant on milkweed species for development and survival. Eggs are laid solely on milkweed plants within their summer breeding range (all of Shasta County is within the summer breeding range). If removal of milkweeds is required during construction, monarch butterflies could be adversely affected.

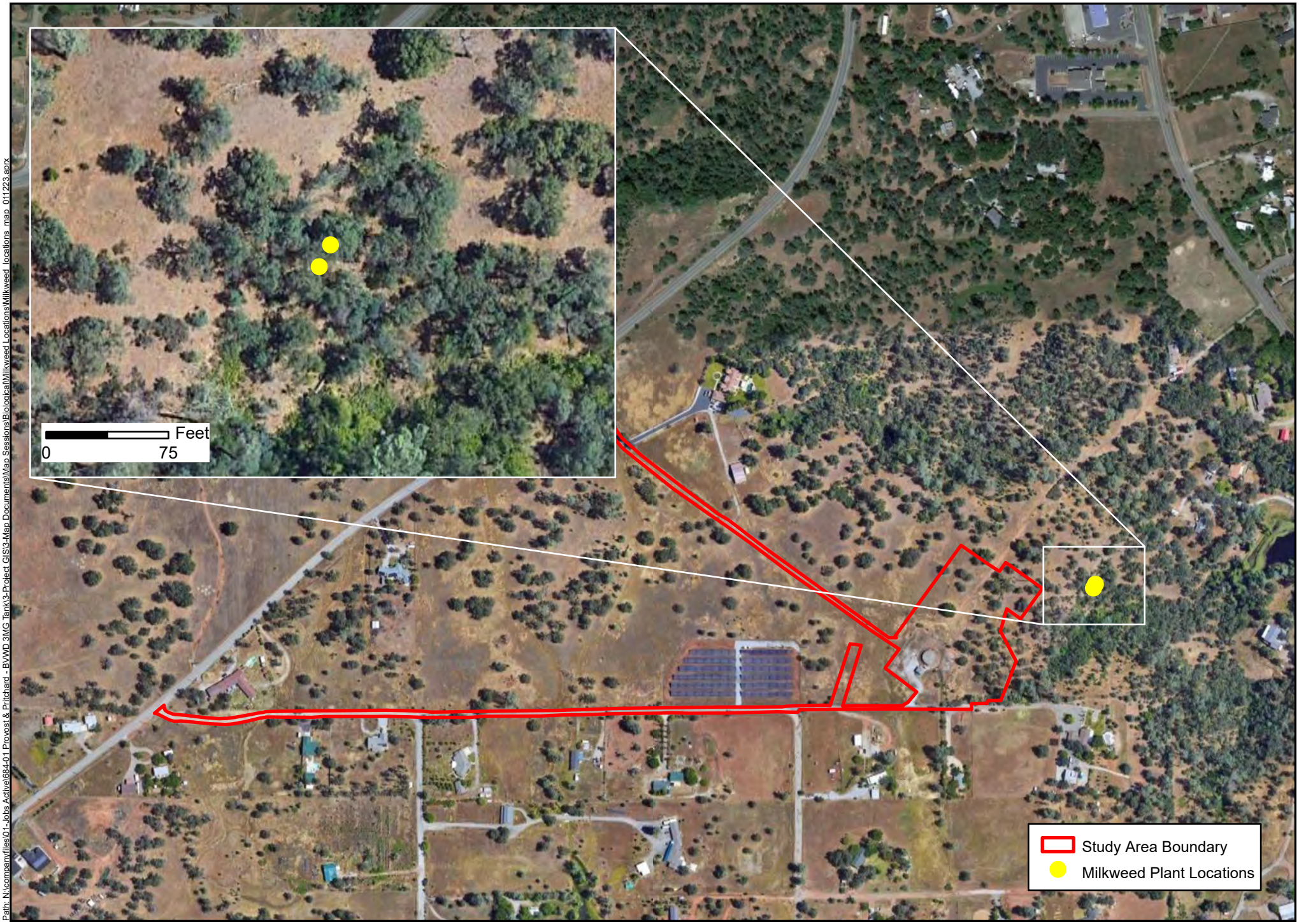
No milkweed plants were observed in the current project site during the botanical survey completed by ENPLAN. However, several purple milkweeds (*Asclepias cordifolia*) are present in the larger study area, about 65 feet southeast of the project boundary (see **Figure 4.4-2**). Although monarch butterflies may occasionally pass through the area (as is the case throughout most of the continental United States), they are not expected to rely on the project site for critical life-stage activities. The project area contains floral resources that could be used as a food source by monarchs. However, floral resources are not particularly abundant on the site, and similar floral resources are widely available in the general project vicinity. Although project implementation would result in the loss of some floral resources, this would not adversely affect the monarch butterfly population.

Spotted Bat (*Euderma maculatum*), State Species of Special Concern

The spotted bat is distributed from southern British Columbia to central Mexico, and inhabits foothill, mountain, and desert regions within their range. Spotted bats typically roost in cliff crevices, but may also roost in caves, and manmade structures. Roosting sites are typically near suitable foraging habitats. Suitable foraging areas include forest openings and subalpine mountain meadows in spruce, pine, and pinyon-juniper woodlands, large riverine/riparian areas, wetlands, meadows, and old agricultural fields. As documented in **Appendix B**, spotted bats could potentially migrate through or forage in the project area; however, there is no suitable roosting habitat present on the project site. Therefore, project implementation would not adversely affect spotted bats, and no mitigation measures are necessary.

Pallid Bat (*Antrozous pallidus*), State Species of Special Concern

The pallid bat is present throughout California year-round at low elevations. Habitat types used by the species include grasslands, shrublands, woodlands, and forests; however, the species is most common in open, dry habitats. Daytime roosts include caves, crevices, mines, and occasionally buildings and hollowed trees. Roosting colonies are an important aspect of the pallid bat life history. Individuals that roost outside of these colonies show signs of reduced health. Most roost groups range from 20 to 160 individuals. Parturition generally occurs between April and July, with an average litter of two; young are raised in these colonies.



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All depictions are approximate. Not a survey product. 07.06.23

Feet
0
425

Figure 4.4-2

Milkweed Plant Locations

ENPLAN

As documented in **Appendix B,** trees in the study area may provide suitable roosting habitat for the pallid bat, while potential foraging habitat is widespread in the general area. In order to avoid and/or minimize impacts to roosting bats, **MM 4.4.1** requires implementation of a two-step process for tree removal, which will encourage bats to seek other roost sites prior to tree removal. Implementation of **MM 4.4.1** would ensure that impacts on bats are less than significant.

Critical Habitat/Essential Fish Habitat

The USFWS does not identify any designated critical habitats for federally listed species within the project area. NMFS identifies critical habitat for CCV steelhead as occurring in the Bella Vista, Palo Cedro, Enterprise, and Project City quadrangles. Critical habitat is identified in the Palo Cedro and Enterprise quadrangles for CVSR Chinook salmon. Critical habitat is identified in the Enterprise and Project City quadrangles for SRWR Chinook salmon. Critical habitat for sDPS green sturgeon is identified in the Enterprise quadrangle.

Essential Fish Habitat (EFH) is identified for Chinook salmon in all four of these quadrangles. Neither the critical habitat nor essential fish habitat extends to the project site and there are no fish-bearing streams in proximity to the site. Therefore, there would be no direct or indirect impacts to designated critical habitat or EFH.

With implementation of **MM 4.4.1,** direct and indirect impacts to special-status species are ***less than significant.***

Questions B and C

No sensitive natural communities are identified by CNDDB within the study area. CNDDB records identified the following sensitive natural communities within a five-mile radius of the project site: Great Valley Cottonwood Riparian Forest, Great Valley Valley Oak Riparian Forest, and Great Valley Willow Scrub.

The dominant habitat type within the project area is blue oak woodland. The canopy is open to moderately dense and is comprised primarily of blue oak, with some gray pines, and interior live oaks. The understory includes poison oak, hoary coffeeberry, chaparral honeysuckle, and common manzanita. As discussed under Section 4.2, Agriculture and Forest Resources, implementation of the proposed project would result in the removal of approximately 59 trees with a DBH of six inches or greater; 54 of the trees are oaks. The limits of tree removal are shown in **Figure 4.2-1**. The significance of tree removal can be addressed based on the sensitivity/rarity of the affected community as well as by the overall value of the community for wildlife and ecological purposes.

With respect to sensitivity/rarity, the oak woodland habitat in the study area most closely resembles the *Quercus douglasii / Mixed herbaceous* association (71.020.05), the *Quercus douglasii – Pinus sabiniana / Grass* association (71.020.02), and the *Quercus douglasii –Quercus wislizeni* association (71.020.06) described by CDFW. None of these three associations are considered sensitive by CDFW, as documented in the *California Natural Communities List* dated June 1, 2023 (CDFW, 2023b). The sensitivity ratings are based on the rarity of the vegetative association and the extent of threats to the association.

On-going loss of oak woodlands in Shasta County could result in cumulative impacts with respect to the functions and values provided by oak woodlands. With respect to ecological functions and values, oak woodlands are essential for providing habitat for wildlife, and have higher levels of biodiversity than virtually any other terrestrial ecosystem in California. Further, oak woodlands are important in sustaining wildlife migration corridors, maintaining water quality in streams and rivers, protecting soils from erosion and landslides, moderating temperature extremes, and sequestering carbon. The effects of the water tank construction on the oak woodland have been evaluated in accordance with the *Oak Woodland Impact Decision Matrix*, which was prepared by the University of California Integrated Hardwood Range Management Program (IHRMP).

The first step in the evaluation is determining whether the ecological functions of the oak woodland are relatively “intact,” “moderately degraded,” or “severely degraded”.

Intact Site. An intact site is currently in a "wild" state being managed for grazing, open space, recreation, etc., where all of the ecological functions are still being provided; roads and buildings are rare on the site; trees (dead and alive) dominate the landscape, the site is capable of natural regeneration of oaks and other plant species; the site allows for movement of wildlife; and the existing development is localized and limited to a small number of residences with service buildings or barns.

Moderately Degraded Site. A moderately degraded site has been altered from "wild" condition, but is currently in a state where oak trees are present; natural regeneration is capable of occurring; limited ecological services are still being provided and the site still provides for utilization by wildlife; roads and stream crossings are present, but limited or clustered; and developed areas are centralized and concentrated over a small percentage of the site.

Highly Degraded Site. A highly degraded site has been dramatically altered and is currently in a condition that has no trees, or very few remain; it is managed in such a way that the natural regeneration is not possible or practical; the soil is compacted or contaminated; it has been used for residential, commercial, or industrial purposes; roads and stream crossings are commonplace; and fencing and other obstructions limit wildlife access and movements.

The oak woodland that would be affected by the proposed project is considered "moderately degraded" because the surrounding oak woodland is highly fragmented due to development of nearby residential uses and the USBR-owned Regulating Station.

The second step in the IHRMP process is to determine the degree of impact. The criteria for determining the significance of impacts are as follows:

Low Impact. A low level of impact on a small site would result from the removal of less than ten trees. On a larger site, a low impact would result in no change to the stand structure and immeasurable impacts on canopy cover.

Moderate Impact. A moderate level of impact on a small site would consist of both tree and non-tree components of an oak woodland being removed or altered, with removal of trees resulting in more edge impacts. On a landscape scale, moderate impacts would consist of creation of less than one kilometer (0.62 miles) of edge habitat or complete loss of less than three acres of woodland.

High Impact. A high level of impact on a small project site would result from the removal of a majority of existing trees or, on a larger site, from fragmentation of habitat within a larger continuous patch of woodland. High impacts could include a net loss of oak woodland acreage on the order of ¼ acre to 3 acres or more.

As stated in Section 3.2 (Project Components/Physical Improvements), there are 59 trees greater than six inches DBH within the study area, 50 of which are oak trees. If the preferred staging area is used, up to 35 oak trees would be removed. In the worst-case scenario, if the alternate staging area is used, up to 44 oak trees would be removed and ±1.4 acres of oak woodland would be impacted.

Under either scenario, the proposed project would create a moderate to high impact level within a moderately degraded oak woodland. To mitigate the loss of oak woodland, **MM 4.4.2** requires the District to implement one of the following measures: establish a conservation easement to offset impacts to oak woodlands in Shasta County at a 2:1 ratio (acres protected to acres affected), or contribute an appropriate compensation fee to the Oak Woodlands Conservation Fund managed by the California Wildlife Conservation Board to offset impacts to oak woodlands at a 2:1 ratio (acres protected to acres affected). The extent of oak woodland that will be impacted will be calculated based on final project design and location of the staging area.

Additionally, earthwork in the vicinity of trees has the potential to damage trees and their roots, resulting in eventual death. **MM 4.4.3** requires that high-visibility markers be installed at least six feet outside of the dripline of all trees to be preserved. The markers would be installed prior to the start of construction and would be maintained until completion of construction. No vehicle parking or materials stockpiling would be allowed within this tree protection zone. If work must occur within the marked tree protection zone, the work must be completed under the supervision of a certified arborist.

Implementation of **MM 4.4.2 and MM 4.4.3** would ensure that the impact of the proposed project on protected trees is ***less than significant***.

Wetlands and Other Jurisdictional Waters

ENPLAN conducted field investigations on August 31, 2021, October 27, 2022, and January 10 and 24, 2023, to identify wetlands and other waters of the U.S. and State. The field investigations were conducted in general accordance with technical methods outlined in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Department of the Army, Corps of Engineers, 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE, 2008), and the *Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (limited to determining State jurisdiction).

Several surface water features were observed in and adjacent to the study area during the field delineation. These include an on-site rock-lined constructed ditch that drains to a culvert under Hidden Acres Road and continues to a constructed ditch on the south side of the road, two intermittent streams east of the Water Tank Site, two seasonal wetlands adjacent to the northwestern access road west of the Regulating Station facility, and three natural drainages that pass under Hidden Acres Drive in existing culverts. These features are shown in **Figure 4.4-3.**

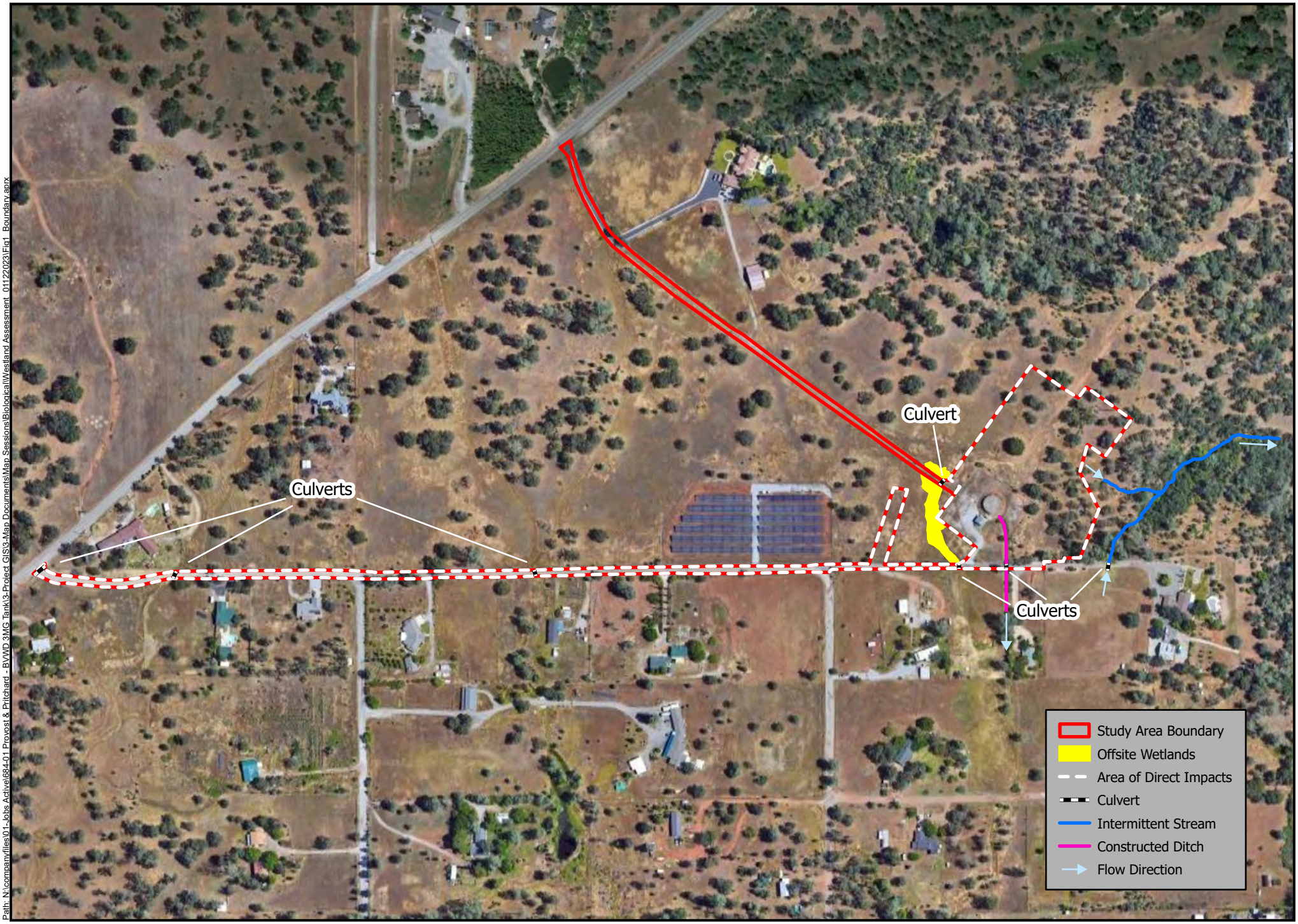
The rock-lined constructed ditch was installed in conjunction with the Regulating Station Water Storage Tank to channel overflow and nuisance water off the site. To improve access and staging opportunities for the current construction project, approximately 90 feet of the constructed ditch would be replaced with a new underground 36-inch overflow drainpipe; a new headwall would be installed at the pipe outlet. The Central Valley Regional Water Quality Control Board (CVRWQCB) was contacted to determine if permits would be required for the proposed activities pursuant to the Porter-Cologne Water Quality Act. The CVRWQCB determined that fill of the constructed ditch would not require a Section 401 Water Quality Certification or Waste Discharge Requirements because the ditch is an artificial ditch that was constructed solely for the discharge of municipal water from the tank, and the channel does not discharge to waters of the State (L. Coster, CVRWQCB, pers. Comm, February 7, 2023).

All other waters shown on **Figure 4.4-3** will be fully avoided during construction. To prevent accidental entry into these waters, **MM 4.4.4** requires that prior to commencement of earth-disturbing activities, exclusionary flagging or other markers shall be installed around wetlands and other jurisdictional waters that are to be avoided; the location of the flagging/markers must be verified by a qualified biologist. With implementation of **MM 4.4.4** and the use of BMPs for spill prevention and erosion control, the potential effects of the project on wetlands and other waters of the U.S. and State would be ***less than significant***.

Potential Introduction and Spread of Noxious Weeds

The introduction and spread of noxious weeds during construction activities has the potential to adversely affect sensitive habitats. Each noxious weed identified by the California Department of Food and Agriculture (CDFA) receives a rating which reflects the importance of the pest, the likelihood that eradication or control efforts would be successful and the present distribution of the pest within the state. Only one CDFA-ranked weed, Klamath weed, was observed in the study area during the botanical survey.

A broader view of invasive plants is provided by the California Invasive Plant Council (Cal-IPC), a nonprofit organization that aims to protect California's environment and economy from invasive plants. Cal-IPC maintains the California Invasive Plant Inventory, a comprehensive list of invasive plants based on ecological impacts, as well as "Watch" plants that may become invasive in the future (Cal-IPC, n.d.). The following additional weeds that are assigned a "Moderate" or "High" rating by Cal-IPC were also observed on-site: Italian thistle, yellow star-thistle, pennyroyal, hyssop loosestrife, common fig, slender wild oats, wild oats, ripgut grass, hedgehog dogtail, medusahead, foxtail fescue, and annual ryegrass.



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All depictions are approximate. Not a survey product. 07.06.23

0 350 Feet

Figure 4.4-3

Potential Wetlands and Other Waters

ENPLAN

Weeds observed in the project area are of widespread distribution in the County, and further spread of these weeds is not anticipated. However, other noxious weeds could be introduced into the project area during construction if unwashed construction vehicles are not properly washed before entering the project site.

Soil import/export and use of certain erosion-control materials such as straw can also result in the spread of noxious weeds. As required by **MM 4.4.5,** the potential for introduction and spread of noxious weeds can be avoided/minimized by using only certified weed-free erosion control materials, mulch, and seed; limiting any import or export of fill material to material that is known to be weed free; and requiring the construction contractor to thoroughly wash all construction vehicles and equipment at a commercial wash facility before entering and upon leaving the job site. Implementation of **MM 4.4.5** reduces potential impacts related to the introduction and spread of noxious weeds to a ***less-than-significant*** level.

Question D

Project implementation would not interfere substantially with the movement of any native resident, migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, nor would it impede the use of native wildlife nursery sites. Numerous native resident and migratory fish and wildlife species inhabit Shasta County. Most notable among the migratory species are anadromous salmonids, black-tailed deer, and various species of migratory birds. No anadromous salmonids would be directly or indirectly affected because no perennial water features are located in close proximity to the project site. Although Stillwater Creek is located north of the Well 6 site, no earth-disturbing activities would occur at this location.

Black-tailed deer and mule deer are not designated as a special-status species but are of concern to CDFW. Review of the County's General Plan found that the project site and immediate vicinity are not designated as winter ranges or fawning grounds for the black-tailed deer herd. CDFW does not identify critical summer or winter ranges, fall holding areas, or fawning grounds for mule deer in or adjacent to the project area (CDFW, n.d.). Project implementation would thus not reduce the availability of deer ranges or fawning habitat, or adversely affect deer migration.

Although the project includes installation of permanent fencing around the project site, there are ample areas adjacent to the site that allow for wildlife movement. Daytime movements of deer and other terrestrial wildlife species may be temporarily affected during construction activities; however, wildlife species would be able to alter their routes to move around the construction area. There is a slight possibility that wildlife could be trapped in open trenches and pipes during construction. **MM 4.4.6** would prevent the inadvertent entrapment of wildlife.

The project area is located within the Pacific Flyway, and it is possible that birds could nest In or adjacent to the study area. Nesting birds, if present, could be directly or indirectly affected by construction activities. Direct effects could include mortality resulting from tree removal and/or construction equipment operating in an area with an active nest with eggs or chicks. Indirect effects could include nest abandonment by adults in response to loud noise levels or human encroachment, or a reduction in the amount of food available to young birds due to changes in feeding behavior by adults.

Construction activities that occur in surfaced roadways and graveled road shoulders would not directly affect nesting birds because no nesting habitat would be affected; indirect effects to nearby nesting habitats, such as nest abandonment by adults in response to loud noise levels, are likewise not expected because birds that may nest adjacent to roadways would be accustomed to periodic loud noises and other human-induced disturbances.

Construction activities involving vegetation removal have the potential to directly impact nesting birds, if present. In the local area, most birds nest between February 1 and August 31. As required by **MM 4.4.7**, the potential for adversely affecting nesting birds can be greatly minimized by removing vegetation and conducting construction activities either before February 1 or after August 31. If this is not possible, a nesting survey would be conducted within one week prior to removal of vegetation and/or the start of construction.

If active nests are found in the project site, BVWD would implement measures to comply with the Migratory Bird Treaty Act and California Fish and Game Code. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

Therefore, construction-related activities that may impede the movement of wildlife would be temporary and would cease at completion of the project, permanent fencing would not significantly impede the movement of wildlife, **MM 4.4.6** would prevent the inadvertent entrapment of wildlife, and **MM 4.4.7** would decrease the potential to adversely affect nesting birds. Therefore, impacts on wildlife movement and wildlife nursery sites would be ***less than significant.***

Question E

As identified under Regulatory Context, the County's General Plan includes goals, objectives, policies, and programs related to the conservation of natural resources. Implementation of **MM 4.4.1 through MM 4.4.7** and compliance with resource agency permit conditions ensures consistency with local policies that protect biological resources. Therefore, impacts would be ***less than significant***.

Question F

A Habitat Conservation Plan (HCP) is a federal planning document that is prepared pursuant to Section 10 of FESA when a project results in the "take" of threatened or endangered wildlife. Regional HCPs address the "take" of listed species at a broader scale to avoid the need for project-by-project permitting. A Natural Community Conservation Plan (NCCP) is a state planning document administered by CDFW. There are no HCPs, NCCPs or other habitat conservation plans that apply to the proposed project (CDFW, 2022a and 2022b). Therefore, there would be ***no impact***.

CUMULATIVE IMPACTS

Cumulative projects in the site vicinity, including growth resulting from build-out of the County's General Plan, are anticipated to permanently remove plant and wildlife resources. Continued conversion of existing open space to urban development may result in the loss of sensitive plant and wildlife species native to the region, habitats for such species, wetlands, wildlife migration corridors, and nursery sites.

The conversion of plant and wildlife habitat on a regional level as a result of cumulative development would potentially result in a regionally significant cumulative impact on special-status species and their habitats. Implementation of **MM 4.4.1 through MM 4.4.7**, implementation of BMPs for erosion and sediment control, and compliance with resource agency permits ensures that the project's contribution to cumulative regional impacts is less than significant.

MITIGATION

MM 4.4.1 Trees greater than 12 inches in diameter at breast height (DBH) shall be removed using a two-step process to allow bats the opportunity to abandon the roost prior to removal.

Day 1: Remove small-diameter trees, brush, and non-habitat features of large trees (branches without cavities, crevices, or exfoliating bark), using chainsaws for cutting, and chippers wherever possible to cause a level of noise and vibration disturbance sufficient to cause bats to choose not to return to the tree for a few days after they emerge to forage.

Day 2: Remove the remainder of the trimmed tree.

To avoid impacts to active maternity colonies, tree removal shall occur only during the following time frames and subject to the following weather conditions, or as otherwise approved/recommended by a qualified bat biologist:

- Between March 1 (or after evening temperatures rise above 45ºF, and/or no more than ½" of rainfall within 24 hours occurs), and April 15; and/or
- Between September 1 and October 15 (or before evening temperatures fall below 45ºF, and/or more than ½" of rainfall within 24 hours occurs).

MM 4.4.2 To mitigate the loss of oak woodland, BVWD shall implement one of the following measures:

a. The Bella Vista Water District shall establish a conservation easement to offset impacts to oak woodlands in Shasta County at a 2:1 ratio (acres protected to acres affected). In support of the conservation easement, a detailed management plan shall be developed and implemented to provide for the long-term maintenance of the oak woodland.

   The management plan shall address allowable land uses and intensities of such use, provide for periodic inspection of the protected lands, address the establishment and maintenance of protective measures such as fencing, identify maintenance and management tasks such as weed removal and trash pick-up, provide for remediation of the effects of unauthorized activities, and name a conservation-oriented third party to hold the easement and be responsible for ensuring the long-term maintenance of the protected lands. Establishment of an endowment to fund the management and maintenance activities undertaken by the easement holder may be appropriate.

   The conservation easement may be established directly by the District, or the District may fund the purchase of a conservation easement by a third-party conservation-oriented entity. If the latter option is selected, the management plan for the oak woodland would be provided by the conservation entity.

b. The Bella Vista Water District shall contribute an appropriate compensation fee to the Oak Woodlands Conservation Fund managed by the California Wildlife Conservation Board. The fee shall be sufficient to offset impacts to oak woodlands at a 2:1 ratio (acres protected to acres affected).

MM 4.4.3 The following measures shall be implemented to ensure retention of the oak trees that are designated for preservation. BVWD shall ensure compliance through the enforcement of contractual obligations:

a. High-visibility markers shall be provided at least 6 feet outside of the dripline of all trees to be preserved. The markers shall be installed prior to the start of construction, be maintained throughout the construction period, and be removed upon completion of construction.

b. No vehicle parking, materials stockpiling, or similar activities shall occur inside the marked tree protection zone. If construction work (including fill, grading, and trenching) must be conducted within the tree protection zones, the work shall be completed under the supervision of a certified arborist.

MM 4.4.4 High-visibility indicators such as marking whiskers, pin flags, stakes with flagging tape, or other markers shall be installed along the outer edges of the construction zone adjacent to wetlands and other waters designated for avoidance. The marker/flag locations shall be determined by a qualified biologist in consultation with the project engineer and the Bella Vista Water District. No construction activities (e.g., clearing, grading, trenching, etc.), including vehicle parking and materials stockpiling, shall occur within the marked/flagged area. The exclusionary markers/flags shall be periodically inspected during construction activities to ensure that the markers/flags are properly maintained. The markers/flags shall be removed upon completion of work.

MM 4.4.5 The potential for introduction and spread of noxious weeds shall be avoided/minimized by:

a. Using only certified weed-free erosion control materials, mulch, and seed;

b. Limiting any import or export of fill material to material that is known to be weed free; and

c. Requiring the construction contractor to thoroughly wash all equipment at a commercial wash facility prior to entering the job site and upon leaving the job site.

MM 4.4.6 To prevent the inadvertent entrapment of wildlife, the construction contractor shall ensure that at the end of each workday trenches and other excavations that are over one-foot deep have been backfilled or covered with plywood or other hard material. If backfilling or covering is not feasible, one or more wildlife escape ramps constructed of earth fill or wooden planks shall be installed in the open trench. Pipes shall be inspected for wildlife prior to capping, moving, or placing backfill over the pipes to ensure that animals have not been trapped. If animals have been trapped, they shall be allowed to leave the area unharmed.

MM 4.4.7 In order to avoid impacts to nesting birds and raptors protected under the federal Migratory Bird Treaty Act and California Fish and Game Code §3503 and §3503.5, including their nests and eggs, one of the following shall be implemented:

a. Vegetation removal and other ground-disturbance activities associated with construction shall occur between September 1 and January 31 when birds are not nesting; or

b. If vegetation removal or ground disturbance activities occur during the nesting season, a pre-construction nesting survey shall be conducted by a qualified biologist to identify active nests in and adjacent to the work area.

   Surveys shall begin prior to sunrise and continue until vegetation and nests have been sufficiently observed. The survey shall take into account acoustic impacts and line-of-sight disturbances occurring as a result of the project in order to determine a sufficient survey radius to avoid nesting birds. At a minimum, the survey report shall include a description of the area surveyed, date and time of the survey, ambient conditions, bird species observed in the area, a description of any active nests observed, any evidence of breeding behaviors (e.g., courtship, carrying nest materials or food, etc.), and a description of any outstanding conditions that may have impacted the survey results (e.g., weather conditions, excess noise, the presence of predators, etc.).

   The results of the survey shall be submitted electronically to the California Department of Fish and Wildlife upon completion at: **R1CEQARedding@wildlife.ca.gov**. The survey shall be conducted no more than one week prior to the initiation of construction. If construction activities are delayed or suspended for more than one week after the pre-construction survey, the site shall be resurveyed.

   If active nests are found, appropriate actions shall be implemented to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code. Compliance measures may include, but are not limited to, exclusion buffers, sound-attenuation measures, seasonal work closures based on the known biology and life history of the species identified in the survey, as well as ongoing monitoring by biologists.

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4.5 CULTURAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

REGULATORY CONTEXT

FEDERAL

Section 106 of the National Historic Preservation Act (NHPA)

Section 106 of the NHPA and its implementing regulations require federal agencies to take into account the effects of their activities and programs on historic properties. Section 106 applies to projects that receive federal funds and/or require federal permits.

A historic property is any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the National Register of Historic Places (NRHP), including artifacts, records, and material remains related to such a property (NHPA Sec. 301[5]). A resource is considered eligible for listing in the NRHP if it meets the following criteria as defined in CFR Title 36, §60.4:

> *The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:*
>
> - *The property is associated with events that have made a significant contribution to the broad patterns of our history;*
> - *The property is associated with the lives of persons significant in our past;*
> - *The property embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or*
> - *The property has yielded, or is likely to yield, information important to prehistory or history.*

In addition to meeting at least one of the criteria outlined above, the property must also retain enough integrity to enable it to convey its historic significance. To retain integrity, a property will always possess several, and usually most, of the seven aspects of integrity:

- Location: the place where the historic property was constructed or the place where the historic event occurred.
- Design: the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting: the physical environment of a historic property.
- Materials: the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

- Feeling: a property's expression of the aesthetic or historic sense of a particular period of time.
- Association: the direct link between an important historic event or person and a historic property.

Sites younger than 50 years, unless of exceptional importance, are not eligible for listing in the NRHP. If a site is determined to be an eligible or historic property, impacts are assessed in terms of "effects." An undertaking is considered to have an adverse effect if it results in any of the following:

- Physical destruction or damage to all or part of the property;
- Alteration of a property;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; and
- Neglect of a property that causes its deterioration; and the transfer, lease, or sale of the property.

If a project will adversely affect a historic property, feasible mitigation measures must be incorporated. The State Historic Preservation Officer (SHPO) must be provided an opportunity to review and comment on these measures prior to commencement of the proposed project.

STATE

California Environmental Quality Act (CEQA)

CEQA requires that projects financed by or requiring the discretionary approval of public agencies in California be evaluated to determine potential adverse effects on historical and archaeological resources (CCR §15064.5). Historical resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, or scientific importance. Pursuant to §15064.5 of the CCR, a property may qualify as a historical resource if it meets any of the following criteria:

1. The resource is listed in or determined eligible for listing in the California Register of Historical Resources (CRHR).
2. The resource is included in a local register of historic resources, as defined in §5020.1(k) of the PRC, or is identified as significant in a historical resources survey that meets the requirements of §5024.1(g) of the PRC (unless the preponderance of evidence demonstrates that the resource is not historically or culturally significant).
3. The lead agency determines that the resource may be a historical resource as defined in PRC §5020.1(j), or §5024.1, or may be significant as supported by substantial evidence in light of the whole record. Pursuant to PRC §5024.1, a resource may be eligible for inclusion in the CRHR if it:
    - Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    - Is associated with the lives of persons important in our past;
    - Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
    - Has yielded, or may be likely to yield, information important in prehistory or history.

Resources must retain integrity to be eligible for listing on the CRHR. Resources that are listed in or formally determined eligible for listing in the NRHP are included in the CRHR, and thus are significant historical resources for the purposes of CEQA (PRC §5024.1(d)(1)). A unique archaeological resource means an artifact, object, or site that meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

LOCAL

Shasta County

The County's General Plan includes the following Objective and Policy that apply to the proposed project:

Chapter 6.10, Heritage Resources		
Objective	HER-1	Protection of significant prehistoric and historic cultural resources.
Policy	HER-a	Development projects in areas of known heritage value shall be designed to minimize degradation of these resources. Where conflicts are unavoidable, mitigation measures which reduce such impacts shall be implemented. Possible mitigation measures may include clustering, buffer or non-disturbance zones, and building siting requirements.

DISCUSSION OF IMPACTS

Questions A and B

A Cultural Resources Inventory (CRI) was completed for the proposed project by ENPLAN in June 2023. The study included a records search, Native American consultation, and field evaluation.

Area of Potential Effects (APE)

The APE boundaries were devised in consultation with the project engineer, based on the project design. The APE includes areas for staging and construction access, as well as sufficient area for construction.

The vertical APE (i.e., associated with the potential for buried cultural resources) is based on the engineering design of the project and reflects the planned depths of the excavations associated with the project. The maximum vertical APE is approximately 6 feet.

Records Search

A records search was conducted to identify previously conducted cultural resources surveys and recorded sites in the project area. The records search included review of records at the Northeast Information Center of the California Historical Resources Information System at California State University, Chico (NEIC/CHRIS); National Register of Historic Places (NRHP); California Register of Historical Resources (CRHR); California Inventory of Historic Resources; California Historical Landmarks; California Points of Historical Interest; Native American Heritage Commission (NAHC); and historical maps and aerial photographs.

Research was conducted at the NEIC/CHRIS on July 14, 2022; an updated records search was conducted on May 17, 2023. The records search covered an approximate half-mile radius around the APE for previously recorded archaeological sites and for previously conducted surveys. The size and scope of the search area was determined to be sufficient based on the results.

The records search indicated that 15 cultural resource surveys have been conducted within a half-mile radius of the project APE, four of which encompassed portions of the APE. There are four previously recorded sites in the half-mile search radius, one of which is located adjacent to the APE. No resources have been previously recorded within the APE.

Review of the NRHP, the CRHR, California Historical Landmarks, and California Points of Historical Interest did not identify any additional resources within the APE.

Native American Consultation

A Request for a Sacred Lands Search was e-mailed to the Native American Heritage Commission (NAHC) on August 16, 2022 requesting information on the project area. The NAHC responded by e-mail on October 19, 2022, indicating that their files did not identify the presence of Native American sacred sites or cultural resources in the immediate area.

Comment solicitation letters were sent by ENPLAN on January 11, 2023, to Kyle Self, Chairperson, Greenville Rancheria of Maidu Indians; John Hayward, Chairperson, Nor-Rel-Muk Wintu Nation; Tracy Foster-Olstad, Cultural Resources Officer, Nor-Rel-Muk Wintu Nation; Harold Bennett, Chairperson, Quartz Valley Indian Community; Jack Potter, Chairperson, Redding Rancheria; Roy Hall, Chairperson, Shasta Nation; Mark Miyoshi, Tribal Historic Preservation Officer, Winnemem Wintu Tribe; Caleen Sisk, Chief, Winnemem Wintu Tribe; and Wade McMaster, Chairperson, Wintu Tribe of Northern California, requesting information on known or potential tribal cultural resources in the project area and surrounding areas.

Follow-up correspondence was conducted on February 9 and 15, 2023. A response was received from Wiyaka Bennett with the Quartz Valley Indian Reservation on February 2, 2023, stating that the tribe has no knowledge of any cultural sites within or adjacent to the project area, but the project site is in the tribe's ancestral territory, and they are interested in any archaeological findings.

Caleen Sisk with the Winnemem Wintu Tribe replied by email on February 16, 2023, stating that there is a potential for tribal cultural resources to be present within the Bella Vista Water District boundaries. Maps and details on the project were provided to Ms. Sisk; no further response was received.

No other comments were received from any of the other tribes that were contacted.

Fieldwork Evaluation

Archaeological fieldwork was completed by an ENPLAN archaeologist on January 30, March 21, and June 3, 2023, to identify cultural resources that would be potentially affected by the proposed project. The entire APE was surveyed with transects spaced no larger than 10 meters apart. Areas with exposed subsurface soil, including rodent burrows and ditches, were thoroughly inspected for evidence of any possible buried cultural deposits and/or soil differentiation. Ground visibility was generally poor and hampered by grass throughout the APE. Visibility was primarily constrained due to the presence of low-level vegetation, concrete coverage, graded roads, and gravel fill.

Conclusions

The cultural resources evaluation identified one historical-era resource, a concrete water tank located at the Well Site that was built in the mid-1960s. The tank is a generic concrete structure and does not appear to meet any of the criteria for listing in the NRHP or CRHR. There are no known cultural resources in the APE. However, there is always some potential for previously unknown cultural resources to be encountered during project excavation.

Based on the geomorphological and topographic characteristics of the project area, the results of the records and literature search, Native American consultation, and the age of the soils mapped in the area, the project area has a low to moderate potential for intact surface and buried historical and prehistoric cultural resources. **Mitigation Measure MM 4.5.1** addresses the inadvertent discovery of cultural resources and ensures that impacts are ***less than significant***.

Question C

The project area does not include any known cemeteries, burial sites, or human remains. However, it is possible human remains may be unearthed during construction activities. **Mitigation Measure 4.5.2** ensures if human remains are discovered, there shall be no further excavation or disturbance of the site until the County coroner has been contacted and has made the necessary findings as to origin and disposition in accordance with §15064.l) of the CEQA Guidelines. Therefore, impacts are ***less than significant***.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the project area have the potential to impact cultural resources. Archaeological and historic resources are afforded special legal protections designed to reduce the cumulative effects of development. Cumulative projects and the proposed project are subject to the protection of cultural resources afforded by the CEQA Guidelines §15064.5 and related provisions of the PRC. In addition, projects with federal involvement would be subject to Section 106 of the NHPA.

Given the non-renewable nature of cultural resources, any impact to protected sites could be considered cumulatively considerable. As discussed above, **Mitigation Measures MM 4.5.1 and MM 4.5.2** address the inadvertent discovery of cultural resources and/or human remains during construction. Because all development projects in the State are subject to the same measures pursuant to PRC §21083.2 and CEQA Guidelines §15064.5., the proposed project's cumulative impact to cultural resources is less than significant.

MITIGATION

MM 4.5.1 In the event of any inadvertent discovery of cultural resources (i.e., burnt animal bone, midden soils, projectile points or other humanly modified lithics, historic artifacts, etc.), all work within 50 feet of the find shall be halted until a professional archaeologist can evaluate the significance of the find in accordance with PRC §21083.2(g) and §21084.1, and CEQA Guidelines §15064.5(a). If any find is determined to be significant by the archaeologist, the Bella Vista Water District shall meet with the archaeologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by an archeologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by the Bella Vista Water District prior to resuming construction.

MM 4.5.2 In the event that human remains are encountered during construction activities, the Bella Vista Water District shall comply with §15064.5 (e) (1) of the CEQA Guidelines and PRC §7050.5. All project-related ground disturbance within 100 feet of the find shall be halted until the County coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) has been completed.

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4.6 ENERGY

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impac
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?	☐	☐	☒	☐

REGULATORY CONTEXT

There are no federal or local regulations pertaining to energy that apply to the proposed project.

STATE

California Environmental Quality Act (CEQA)

Section 15126.2(b) of the CEQA Guidelines states that if analysis of a project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary use of energy, or wasteful use of energy resources, the effects must be mitigated. The Guidelines provide suggestions of topics that may be included in the energy analysis, including identification of energy supplies that would serve the project and energy use for all project phases and components. In addition to building code compliance, other relevant considerations may include the project's size, location, orientation, equipment use and any renewable energy features that could be incorporated into the project.

Renewables Portfolio Standard

In 2002, SB 1078 was passed to establish the State's Renewables Portfolio Standard (RPS) Program, with the goal of increasing the amount of electricity generated and sold to retail customers from eligible renewable energy resources. The initial goal was to increase the percentage of renewable energy in the State's electricity mix to 20 percent of retail sales by 2017. SB 350 (2015) codified a target of 50 percent renewable energy by 2030, and requires California utilities with an average load greater than 700 GWh to develop integrated resource plans that incorporate a GHG emission reduction planning component beginning January 1, 2019.

Senate Bill 100 (2018), The 100 Percent Clean Energy Act

SB 100 (2018) was signed by the Governor on September 10, 2018 and established new standards for the RPS goals established by SB 350 (2015). The new standards established by SB 100 increased previously established RPS goals to now require 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045 for both investor-owned utilities and publicly owned utilities. Interim targets require that energy providers have a renewable energy supply of 44 percent by 2024 and 52 percent by 2027.

In-Use Off Road Diesel-Fueled Fleets Regulation

CARB adopted the In-Use Off-Road Diesel-Fueled Fleets Regulation to reduce NO_X, diesel particulate matter, and other criteria pollutant emissions from off-road heavy-duty diesel vehicles in California. The regulation covers a wide range of vehicle types, including, but not limited to, vehicles used in construction, mining, industrial operations, and other industries. The Regulation requires that fleets meet an increasingly stringent set of fleet average targets, culminating in 2023 for large and medium fleets, and in 2028 for small fleets. The most stringent fleet average target generally corresponds to a 2012 model year, or a Tier 3 average standard (CARB, 2022a).

All self-propelled off-road diesel vehicles 25 horsepower (HP) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the regulation, including rented and

leased vehicles. The regulation imposes limits on idling, restricts adding older vehicles into fleets, and requires that fleet owners reduce their emissions by retiring, replacing, repowering, or retrofitting older engines. In addition, the Portable Equipment Registration Program (PERP) requires all portable engines 50 HP or greater to be registered in PERP or be permitted by a local air district.

The regulations were most recently updated on November 17, 2022, and require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles in California earlier or beyond what is required of fleets in the Off-Road Regulation. The updated regulations also prohibit the addition of high-emitting vehicles to a fleet and require the use of renewable diesel (99 or 100 percent renewable) in off-road diesel vehicles, subject to certain exemptions. The amended regulations will be phased in starting in 2024 through the end of 2036 (CARB, 2022b).

The amended regulations require that beginning January 1, 2024, public agencies that award or enter into contracts for public works projects obtain fleet Certificates of Reported Compliance from fleets prior to awarding public works contracts. These requirements will ensure that only compliant fleets are being used on public works projects. CARB estimates that from 2024 through 2038, the amendments will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NO_X and 2,717 tons of $PM_{2.5}$. About half of those additional reductions are expected to be realized within the first five years of implementation.

Warren-Alquist Act (1974)

The Warren-Alquist Act established the California Energy Resources Conservation and Development Commission (California Energy Commission) in 1974 to respond to the energy crisis of the early 1970s and the State's unsustainable growing demand for energy resources. The Act established State policy focused on reducing the wasteful, unnecessary, and uneconomical uses of energy by employing a range of measures. The Act is regularly updated, and the Energy Commission publishes an updated version of the Act annually (CEC, 2023).

DISCUSSION OF IMPACTS

Questions A and B

Construction-Related Energy Use

Energy consumption during construction would occur primarily from the use of diesel and gasoline in construction equipment and haul trucks, as well as in vehicles used by construction workers travelling to and from the work site.

As stated under Regulatory Context, construction equipment must comply with the State's In-Use Off-Road Diesel-Fueled Fleets Regulation, which imposes limits on idling, restricts adding older vehicles into fleets, and requires that fleet owners reduce their emissions by retiring, replacing, repowering, or retrofitting older engines. The requirement to use renewable diesel fuel in off-road diesel vehicles will be phased in starting in 2024 through the end of 2036 (CARB, 2023; 2022a, 2022b). In addition, as discussed in Section 4.3 (Air Quality), MM 4.3.2 is included to minimize NO_X emissions and would reduce energy use during construction. Therefore, impacts during construction would be ***less than significant***.

Operational Energy Use

The proposed project would result in an increase in energy use due to operation of the new water storage tank and pump station. The District's energy needs are currently met by a combination of PG&E and Redding Electrical Utility. Although the proposed project does not include installation of renewable energy facilities (e.g., solar panels), the project will offset a portion of the increased power demand with energy generated from the District's existing 693-kilowatt solar power facility that is located west of the Water Tank Site.

The installation of SCADA systems at three of the District's wells will allow the wells to be monitored and operated remotely, resulting in a reduction in trips by the District's water treatment operators to the wells. It is anticipated that two trips per week will be eliminated, which will reduce the number of

miles driven by approximately 50 miles per week or 1,300 miles per year. This would reduce the amount of CO_2 emitted by District vehicles by approximately 820 kilograms of CO_2. This is based on an average fuel economy of 14.1 miles per gallon for the District's vehicles and CO_2 emissions of 8,887 grams of CO_2 per gallon of gasoline (USEPA, 2023)

In addition, as stated under Regulatory Context, the new standards established by SB 100 (2018) require 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045 for both investor-owned and publicly owned utilities.

Therefore, energy used for operation of the proposed project would not be considered wasteful, inefficient, or unnecessary; impacts would be ***less than significant***.

CUMULATIVE IMPACTS

Completion of the proposed project and other potential cumulative projects in the region, including growth resulting from build-out of the County's General Plan, could result in potentially significant impacts due to the wasteful, inefficient, or unnecessary consumption of energy resources. As documented above, the project will utilize energy generated from the District's existing solar facility that is located west of the proposed water tank. In addition, the installation of SCADA systems at three of the District's wells will allow the wells to be monitored remotely, resulting in a reduction in trips by the District's water treatment operators to the wells.

Further, all new development projects in the State are required to comply with State regulations that require the use of fuel-efficient equipment during construction. New projects are also subject to compliance with applicable building and energy codes that were enacted to reduce energy consumption for residential and non-residential buildings. Compliance with existing State regulations, use of solar energy to off-set energy demands, and the reduction in vehicle trips that would occur with installation of SCADA equipment at the District's wells ensures that the project's cumulative impacts on energy resources would be less than significant.

MITIGATION

None necessary.

DOCUMENTATION

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4.7 GEOLOGY AND SOILS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death, involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

REGULATORY CONTEXT

FEDERAL

National Earthquake Hazards Reduction Act

The National Earthquake Hazards Reduction (NEHR) Act was passed in 1977 to reduce the risks to life and property from future earthquakes in the United States. The Act established the National Earthquake Hazards Reduction Program, which was most recently amended in 2004. The Federal Emergency Management Agency (FEMA) is designated as the lead agency of the program. Other NEHR Act agencies include the National Institute of Standards and Technology, National Science Foundation, and the U.S. Geological Survey (USGS).

Paleontological Resources Preservation Act

The federal Paleontological Resources Preservation Act of 2002 limits the collection of vertebrate fossils and other rare and scientifically significant fossils to qualified researchers who have obtained federal and/or state agency permits and agree to donate any recovered materials to recognized public institutions, where they will remain accessible to the public and to other researchers. The Act incorporates key findings of a report, *Fossils on Federal Land and Indian Lands*, issued by the Secretary of the Interior in 2000, that established that most vertebrate fossils and some invertebrate and plant fossils are considered rare resources.

STATE

California Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC §2621 *et seq.*) was passed in 1972 to reduce the risk to life and property from surface faulting in California. The Act prohibits the siting of most structures intended for human occupancy on the surface trace of active faults. Before a project can be permitted in a designated Alquist-Priolo Fault Study Zone, a geologic investigation must be prepared to demonstrate that proposed buildings would not be constructed across active faults.

California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act (SHMA) of 1990 (PRC §2690–2699.6) addresses non-surface fault rupture earthquake hazards, including strong ground shaking, liquefaction and seismically induced landslides. The SHMA also addresses expansive soils, settlement, and slope stability. Under the SHMA, cities and counties may withhold development permits for sites within seismic hazard areas until geologic/geotechnical investigations have been completed and measures to reduce potential damage have been incorporated into development plans.

California Building Standards Code (CBSC)

Title 24 of the CCR, also known as the CBSC, provides minimum standards for building design and construction, including excavation, seismic design, drainage, and erosion control. The CBSC is based on the International Building Code (IBC) used widely throughout the country. The CBSC has been modified for California conditions to include more detailed and/or more stringent regulations.

Protection of Paleontological Resources

Under CEQA, a project is considered to have a significant impact on paleontological resources if it would disturb or destroy a unique paleontological resource or site or unique geologic feature. In addition, Public Resources Code (PRC) Section 5097.5 provides for the protection of paleontological resources. Local agencies are required to comply with PRC 5097.5 when the agency has discretionary authority over a project undertaken by others (e.g., issuance of use permits, grading permits, etc.).

LOCAL

Shasta County

The County's General Plan includes the following Objectives and Policy that apply to the proposed project:

Chapter 5.1, Seismic and Geologic Hazards		
Objectives	SG-1	Protection of all development from seismic hazards by developing standards for the location of development relative to these hazards; and protection of essential or critical structures, such as schools, public meeting facilities, emergency services, high-rise and high-density structures, by developing standards appropriate for such protection.
	SG-2	Protection of development on unstable slopes by developing standards for the location of development relative to these hazards.
	SG-3	Protection of development from other geologic hazards, such as volcanoes, erosion, and expansive soils.
	SG-4	Protection of waterways from adverse water quality impacts caused by development on highly erodible soils.
Policy	SG-e	When soil tests reveal the presence of expansive soils, engineering design measures designed to eliminate or mitigate their impacts shall be employed.

DISCUSSION OF IMPACTS

Question A

i, ii, and iii)

As stated in the Geotechnical Exploration Report, significant earthquake-related ground shaking should be expected during the design life of the new water tank. The Alquist-Priolo Earthquake Fault Zoning Maps show that the closest Special Study Zone is the Rocky Ledge Fault Zone, ±35 miles northeast of the project area (California Department of Conservation [DOC], 2022a). The DOC fault activity map of California (DOC, 2022b) shows that the potentially active Battle Creek fault zone, which consists of closely parallel faults that parallel Cottonwood Creek, is ±18 miles south of the project area; however, no known active or inactive faults cross or project toward the tank site, and it is the opinion of KC Engineering that there is no potential for fault-related surface rupture at the tank site.

The Geotechnical Report also addresses the potential for seismic-related ground failure, including liquefaction. Liquefaction results from an applied stress on the soil, such as earthquake shaking or other sudden change in stress condition, and is primarily associated with saturated, cohesionless soil layers located close to the ground surface. During liquefaction, soils lose strength and ground failure may occur. Building foundations can sink, break apart, or tilt. This is most likely to occur in alluvial (geologically recent, unconsolidated sediments) and stream channel deposits, especially when the groundwater table is high.

According to the Geotechnical Report, exploratory soil borings encountered hard sandy clay, dense clayey sand, and gravel. Groundwater was encountered 18 feet below the surface. Fluctuations in groundwater conditions can occur with variations in seasonal rainfall, irrigation in the vicinity, and variations in subsurface stratification. Based on the type of soil encountered, the Geotechnical Report concluded that the potential for liquefaction-related hazards is low.

The KC Engineering Geotechnical Report (KC Engineering, 2022) included a Seismicity and Ground Motion Analysis to ensure that structures on the Water Tank Site are designed to withstand anticipated ground accelerations. The analysis was prepared in accordance with California Building Code earthquake design values and American Society of Civil Engineers (ASCE) standards. The ASCE 7 Hazard Tool, a web-based seismic design tool, was utilized to identify specific design parameters for the proposed improvements.

The Geotechnical Report states that grading and foundation plans should be reviewed by the Soil Engineer to ensure that the geotechnical recommendations are incorporated into the project design. Recommendations for field observation and monitoring are also included.

To ensure that recommendations included in the KC Engineering Geotechnical Report are incorporated into the project design, **MM 4.7.1** requires that grading and foundation plans must be reviewed by a qualified professional to ensure that the recommendations are implemented. **MM 4.7.2** requires that work activities are monitored and inspected as recommended in the Geotechnical Report. Implementation of **MM 4.7.1 and MM 4.7.2** ensures that impacts associated with seismic activity and seismic-related ground failure, including liquefaction, would be ***less than significant.***

iv)

According to the 2017 Shasta County Multi-Jurisdictional Hazard Mitigation Plan, landslides occur throughout Shasta County but are more prevalent in the eastern and northern portions of the County and are commonly related to the sedimentary and volcanic rocks in these vicinities. Landslides are more likely to occur in steep areas with weak rocks where the soil is saturated from heavy rains or snowmelt. The tank site is relatively level with the general downward trend to the northeast. According to the KC Engineering Geotechnical Report, obvious signs of slope instability were not observed on the project site, and the possibility of seismically-induced landslide hazards is considered low. Therefore, there would be ***no impact***.

Question B

Construction of the proposed project would involve excavation, grading activities, and installation of project components, which would result in the temporary disturbance of soil and would expose disturbed areas to potential storm events. This could generate accelerated runoff, localized erosion, and sedimentation. In addition, construction activities could expose soil to wind erosion that could adversely affect on-site soils and the revegetation potential of the area.

As noted in Section 1.8 (Regulatory Requirements), the BVWD is required to obtain coverage under the National Pollutant Discharge Elimination System (NPDES) permit for *Discharges of Storm Water Runoff Associated with Construction Activity* (also known as the Construction General Permit) by submitting a Notice of Intent (NOI) to the State Water Resources Control Board (SWRCB). The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP) that includes Best Management Practices (BMPs) to reduce pollutants as well as any additional controls necessary to meet water quality standards. Measures that may be implemented to minimize erosion include, but are not limited to, limiting construction to the dry season; and use of straw wattles, silt fences, and/or gravel berms to prevent sediment from discharging off-site.

As further discussed in Section 4.10 (Hydrology and Water Quality), the District is not covered by a Standard Urban Storm Water Management Plan (SUSWMP) or a Phase I or Phase II Municipal Separate Storm Sewer System (MS4) Permit; thus, the District is subject to post-construction requirements included in the SWRCB Construction General Permit. These requirements are intended to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect water quality impacts. Post-construction BMPs must ensure that stormwater runoff rates match pre-construction project site hydrology. Permanent erosion control BMPs are also required (e.g., revegetating temporarily disturbed areas upon completion of construction and implementing slope stabilization measures).

Because BMPs for erosion and sediment control would be implemented in accordance with existing requirements, the potential for soil erosion and loss of top soil would be ***less than significant***.

Questions C and D

See discussion under Question A(iii) and (iv) and Question B above. Unstable soils consist of loose or soft deposits of sands, silts, and clays. When soils are unstable, they can shift or expand and damage structures and/or underground utilities. Expansive soils generally contain clays that swell when they absorb water and shrink when they dry out. When expansive soils swell, the change in volume can exert pressure on loads that are upon them.

According to the KC Engineering Geotechnical Report, the primary geotechnical considerations for the Water Tank Site are the presence of variable compressive soil layers, variable and relatively shallow groundwater, and potentially corrosive soils. Varying soil layers have different strength characteristics and are expected to result in differential settlement across the proposed water tank footprint, which has a potential to lead to cracking and angular distortion of the footing foundation.

To minimize potential impacts associated with differential settlement, the Geotechnical Report recommends that the water tank be supported by either a structural mat slab foundation or a deepened and interconnected spread footing and well-reinforced thickened slab foundation system, along with an underlying geogrid reinforced structural fill pad or Controlled Low Strength Material (CLSM) and backfill with select import material. Although some of the soils in the project area may be considered expansive, the Geotechnical Report includes recommendations to minimize risks associated with expansive soils, including specific requirements for fill materials.

Implementation of **MM 4.7.1 and MM 4.7.2** ensures that recommendations from the Geotechnical Report are implemented. Therefore, potential impacts associated with unstable or expansive soils would be ***less than significant*.**

Question E

The proposed project does not include the installation or use of alternative wastewater disposal systems. Therefore, there would be ***no impact***.

Question F

Paleontological resources include fossils and the deposits that contain fossils. Fossils are evidence of ancient life preserved in sediments and rock, such as the remains of animals, animal tracks, plants, and other organisms. Fossils are found primarily embedded in sedimentary rocks, mostly shale, limestone, and sandstone. With rare exceptions, metamorphic and igneous rocks have undergone too much heat and pressure to preserve fossils; however, when ash from volcanic eruptions buries the surrounding area, the ash sometimes encapsulates organisms.

A review of U.C. Berkeley Museum of Paleontology (UCMP) records showed that there are 827 sites in Shasta County in which paleontological resources have been discovered (UCMP, 2023a); within these sites, 11,056 fossils have been recorded in the County (UCMP, 2023b); however, specific locations of these specimens are not disclosed. According to the CGS (CGS, 2022c), the Water Tank Site consists of Pliocene-Pleistocene age nonmarine (continental) sedimentary rocks. Because paleontological resources and fossils are found primarily within sedimentary rock deposits, fossilized paleontological resources may be present in the project area. Mitigation Measure **MM 4.7.3** addresses the inadvertent discovery of paleontological resources during ground-disturbing activities and ensures that impacts would be ***less than significant.***

CUMULATIVE IMPACTS

Completion of the proposed project and other potential cumulative projects in the region could result in increased erosion and soil hazards and could expose additional structures and people to seismic hazards. In addition, ground disturbance has the potential to destroy paleontological resources and unique geological features.

As discussed above, all development projects in the State that result in earth disturbance over one acre are required to obtain coverage under the NPDES permit for *Discharges of Storm Water Runoff Associated with Construction Activity* by submitting a Notice of Intent to the SWRCB along with an effective SWPPP that includes BMPs to minimize erosion. In addition, pursuant to existing State regulations, incorporation of standard seismic safety and engineering design measures as recommended in a geotechnical study is required. Incorporation of recommendations identified in the geotechnical report, implementation of BMPs in accordance with the SWPPP, and implementation of **MM 4.7.1** ensures that the project's impacts associated with geology and soils are not cumulatively considerable.

MITIGATION

MM 4.7.1 All grading plans and foundation plans shall be reviewed by a qualified professional to ensure that all recommendations included in the KC Engineering Geotechnical Report are implemented. Applicable notes shall be placed on the attachment sheet to the improvements plans and in applicable project plans and specifications.

If significant engineering design changes occur during construction, Bella Vista Water District (BVWD) shall consult with a qualified geotechnical engineer to identify any geotechnical constraints related to the design changes. Recommendations of the geotechnical engineer shall be implemented as warranted.

MM 4.7.2 BVWD shall ensure through contractual obligations that earthwork activities are monitored by a qualified professional to ensure that recommendations included in the KC Engineering Geotechnical Report are implemented.

MM 4.7.3 If paleontological resources (fossils) are discovered during construction, all work within a 50-foot radius of the find shall be halted until a professional paleontologist can evaluate

the significance of the find. If any find is determined to be significant by the paleontologist, BVWD representatives shall meet with the paleontologist to determine the appropriate course of action. If necessary, a Treatment Plan prepared by a paleontologist outlining recovery of the resource, analysis, and reporting of the find shall be prepared. The Treatment Plan shall be reviewed and approved by BVWD prior to resuming construction.

DOCUMENTATION

California Department of Conservation. 2022a. Alquist-Priolo Earthquake Fault Zoning Act. http://www.conservation.ca.gov/CGS/rghm/ap/. Accessed January 2023.

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4.8 GREENHOUSE GAS EMISSIONS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

REGULATORY CONTEXT

FEDERAL

U.S. Environmental Protection Agency

On April 2, 2007, in *Massachusetts v. EPA,* 549 U.S. 497 (2007), the Supreme Court found that greenhouse gas emissions (GHGs) are air pollutants covered by the federal Clean Air Act (CAA). In reaching its decision, the Court also acknowledged that climate change is caused, in part, by human activities. The Supreme Court's ruling paved the way for the regulation of GHG emissions by the USEPA under the CAA. The USEPA has enacted regulations that address GHG emissions, including, but not limited to, mandatory GHG reporting requirements, carbon pollution standards for power plants, and air pollution standards for oil and natural gas production.

STATE

California Executive Order (EO) S-3-05

EO S-03-05 was signed by the Governor on June 1, 2005, and established the goal of reducing statewide GHG emissions to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32 (Global Warming Solutions Act of 2006)

As required by Assembly Bill 32 (AB 32) (2006), CARB adopted the initial Climate Change Scoping Plan in 2008 that identified the State's strategy to achieve the 2020 GHG emissions limit via regulations, market-based mechanisms, and other actions (CARB, 2022a). AB 32 requires that the Scoping Plan be updated every five years. CARB's first update to the Climate Change Scoping Plan (2014) addressed post-2020 goals and identified the need for a 2030 mid-term target to establish a continuum of actions to maintain and continue reductions. Executive Order B-30-15 (2015) extended the goal of AB 32 and set a GHG reduction goal of 40 percent below 1990 levels by 2030. In December 2017, CARB adopted the second update to the Scoping Plan that includes strategies to achieve the 2030 mid-term target and advance toward the 2050 climate goal to reduce GHG emissions by 80 percent below 1990 levels.

The 2017 Scoping Plan Update recommends that local governments aim to achieve a community-wide goal of no more than 6 metric tons (MT) CO_2 equivalent (CO_2e) units per capita by 2030 and no more than 2 MT CO_2e per capita by 2050, which is consistent with the State's long-term goals.

California Executive Order B-55-18

EO B-55-18 was issued by the Governor on September 10, 2018. It sets a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets.

2022 Scoping Plan for Achieving Carbon Neutrality

On November 16, 2022, the 2022 Scoping Plan for Achieving Carbon Neutrality was published by CARB (CARB, 2022a). The Plan lays out the sector-by-sector plan that outlines a technologically feasible, cost-effective, and equity-focused path to achieve the State's climate target. The 2022 Plan extends and expands upon earlier plans with a target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045, and also outlines how carbon neutrality can be achieved by meeting the anthropogenic emissions target and by expanding actions to capture and store carbon through the State's natural and working lands and implementing mechanical approaches (e.g., capture at point sources and direct removal from the atmosphere through direct air capture).

Senate Bill 32/Assembly Bill 197 (2016)

As set forth in EO B-30-15, SB 32 requires CARB to reduce GHG emissions to 40 percent below the 1990 levels by 2030. AB 197 requires CARB to prioritize direct GHG emission reductions in a manner that benefits the state's most disadvantaged communities and to consider social costs when adopting regulations to reduce GHG emissions.

Renewables Portfolio Standard

In 2002, SB 1078 was passed to establish the State's Renewables Portfolio Standard (RPS) Program, with the goal of increasing the amount of electricity generated and sold to retail customers from eligible renewable energy resources. The initial goal was to increase the percentage of renewable energy in the State's electricity mix to 20 percent of retail sales by 2017. SB 350 (2015) codified a target of 50 percent renewable energy by 2030, and requires California utilities with an average load greater than 700 GWh to develop integrated resource plans that incorporate a GHG emission reduction planning component beginning January 1, 2019.

Senate Bill 100 (2018), The 100 Percent Clean Energy Act

SB 100 (2018) was signed by the Governor on September 10, 2018, and established new standards for the RPS goals established by SB 350 (2015). The new standards established by SB 100 increased previously established RPS goals to now require 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045 for both investor-owned utilities and publicly owned utilities. Interim targets require that energy providers have a renewable energy supply of 44 percent by 2024 and 52 percent by 2027.

Senate Bill 375 (Sustainable Communities and Climate Protection Act of 2008)

Under SB 375, the CARB sets regional targets for the reduction of GHG emissions from passenger vehicles and light duty trucks. Each Metropolitan Planning Organization (MPO) in the State, or Regional Transportation Planning Agency for regions without a MPO, must include a Sustainable Communities Strategy (SCS) in the applicable Regional Transportation Plan (RTP) that demonstrates how the region will meet the GHG emissions reduction targets.

Mobile Source Strategy

CARB's 2020 Mobile Source Strategy (Strategy), describes the State's strategy for containing air pollutant emissions from vehicles, and quantifies growth in vehicle miles traveled that is compatible with achieving state climate targets (CARB, 2021a). The Strategy demonstrates how the State can simultaneously meet air quality standards, achieve GHG emission reduction targets, decrease health risks from transportation emissions, and reduce petroleum consumption over the next fifteen years.

In-Use Off-Road Diesel-Fueled Fleets Regulation

CARB adopted the In-Use Off-Road Diesel-Fueled Fleets Regulation to reduce NO_X, diesel particulate matter, and other criteria pollutant emissions from off-road heavy-duty diesel vehicles in California. The regulation covers a wide range of vehicle types, including, but not limited to, vehicles used in construction, mining, industrial operations, and other industries. The Regulation requires that fleets meet an increasingly stringent set of fleet average targets, culminating in 2023 for large and medium fleets, and in 2028 for small fleets. The most stringent fleet average target generally corresponds to a 2012 model year, or a Tier 3 average standard (CARB, 2022b).

All self-propelled off-road diesel vehicles 25 horsepower (HP) or greater used in California and most two-engine vehicles (except on-road two-engine sweepers) are subject to the regulation, including rented and leased vehicles. The regulation imposes limits on idling, restricts adding older vehicles into fleets, and requires fleet owners to reduce their emissions by retiring, replacing, repowering, or retrofitting older engines. In addition, the Portable Equipment Registration Program (PERP) requires all portable engines 50 HP or greater to be registered in PERP or be permitted by a local air district.

The regulations were most recently updated on November 17, 2022, and require fleets to phase-out use of the oldest and highest polluting off-road diesel vehicles in California earlier or beyond what is required of fleets in the Off-Road Regulation. The updated regulations also prohibit the addition of high-emitting vehicles to a fleet and require the use of renewable diesel (99 or 100 percent renewable) in off-road diesel vehicles. The amended regulations will be phased in starting in 2024 through the end of 2036 (CARB, 2023, 2022c).

The amended regulations require that beginning January 1, 2024, public agencies that award or enter into contracts for public works projects obtain fleet Certificates of Reported Compliance from fleets prior to awarding public works contracts. These requirements will ensure that only compliant fleets are being used on public works projects.

CARB estimates that from 2024 through 2038, the amendments will generate an additional reduction above and beyond the current regulation of approximately 31,087 tons of NO_X and 2,717 tons of $PM_{2.5}$. About half of those additional reductions are expected to be realized within the first five years of implementation.

CEQA Guidelines

§15064.4 of the California Environmental Quality Act (CEQA) Guidelines states that the lead agency should focus its GHG emissions analysis on the reasonably foreseeable incremental contribution of the project's emissions to the effects of climate change. A lead agency has the discretion to determine whether to use a model or methodology to quantify GHG emissions or to rely on a qualitative or performance-based standard.

The GHG analysis should consider: 1) the extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting, 2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project, and 3) the extent to which the project complies with any regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an Environmental Impact Report (EIR) must be prepared for the project. To determine transportation-generated greenhouse gas emissions in particular, lead agencies may determine that it is appropriate to use the same method used to determine the transportation impacts associated with a project's vehicle miles travelled (VMT).

In *Center for Biological Diversity v. California Department of Fish and Wildlife* (2015) 62 Cal.4th 204, which involved the Newhall Ranch project, the California Supreme Court concluded that a legally appropriate approach to assessing the significance of GHG emissions was to determine whether a project was consistent with "*'performance based standards' adopted to fulfill 'a statewide . . . plan for the reduction or mitigation of greenhouse gas emissions' (CEQA Guidelines §15064.4(a)(2), (b)(3)… §15064(h)(3) [determination that impact is not cumulatively considerable may rest on compliance with previously adopted plans or regulations, including 'plans or regulations for the reduction of greenhouse gas emissions'].)"* (62 Cal.4th app. 229.)

Greenhouse Gases Defined

Table 4.8-1 provides descriptions of the GHGs identified in California Health and Safety Code §38505(g).

TABLE 4.8-1
Greenhouse Gases

Greenhouse Gas	Description
Carbon dioxide (CO_2)	Carbon dioxide (CO_2) is the primary greenhouse gas emitted through human activities. In 2014, CO_2 accounted for about 80.9 percent of all U.S. greenhouse gas emissions from human activities. The main human activity that emits CO_2 is the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation, although certain industrial processes and land-use changes also emit CO_2.
Methane (CH_4)	Methane (CH_4) is the second most prevalent greenhouse gas emitted in the United States from human activities. Methane is emitted by natural sources such as wetlands, as well as human activities such as the raising of livestock; the production, refinement, transportation, and storage of natural gas; methane in landfills as waste decomposes; and in the treatment of wastewater.
Nitrous oxide (N_2O)	In 2014, nitrous oxide (N_2O) accounted for about 6 percent of all U.S. greenhouse gas emissions from human activities. Nitrous oxide is naturally present in the atmosphere as part of the Earth's nitrogen cycle. Human activities such as agricultural soil management (adding nitrogen to soil through use of synthetic fertilizers), fossil fuel combustion, wastewater management, and industrial processes are also increasing the amount of N_2O in the atmosphere.
Hydrofluorocarbons (HFCs)	Hydrofluorocarbons (HFCs) are man-made chemicals, many of which have been developed as alternatives to ozone-depleting substances for industrial, commercial, and consumer products such as refrigerants, aerosol propellants, solvents, and fire retardants. They are released into the atmosphere through leaks, servicing, and disposal of equipment in which they are used.
Perfluorocarbons (PFCs)	Perfluorocarbons (PFCs) are colorless, highly dense, chemically inert, and nontoxic. There are seven PFC gases: perfluoromethane (CF_4), perfluoroethane (C_2F_6), perfluoropropane (C_3F_8), perfluorobutane (C_4F_{10}), perfluorocyclobutane (C_4F_8), perfluoropentane (C_5F_{12}), and perfluorohexane (C_6F_4). Perfluorocarbons are produced as a byproduct of various industrial processes associated with aluminum production and the manufacturing of semiconductors.
Sulfur hexafluoride (SF_6)	Sulfur hexafluoride (SF_6) is an inorganic compound that is colorless, odorless, nontoxic, and generally nonflammable. SF_6 is primarily used in magnesium processing and as an electrical insulator in high voltage equipment. The electric power industry uses roughly 80 percent of all SF_6 produced worldwide.
Nitrogen trifluoride (NF_3)	Nitrogen trifluoride is a colorless, odorless, nonflammable gas that is highly toxic by inhalation. It is one of several gases used in the manufacture of liquid crystal flat-panel displays, thin-film photovoltaic cells and microcircuits.

LOCAL

Shasta County

Shasta County developed a draft Shasta Regional Climate Action Plan in August 2012 (RCAP). The RCAP includes GHG inventories and projections for each jurisdiction in Shasta County for 2008, 2020, 2035, and 2050. The plan also shows that the County would achieve a reduction in GHG emissions in the year 2020 below 2008 business as usual emissions with the implementation of state and federal reduction measures. However, the County has not adopted thresholds of significance for GHGs.

DISCUSSION OF IMPACTS

Question A

Gases that trap heat in the atmosphere create a greenhouse effect that results in global warming and climate change. These gases are referred to as greenhouse gases (GHGs). As described in **Table 4.8-1**, some GHGs occur both naturally and as a result of human activities, and some GHGs are exclusively the result of human activities. The atmospheric lifetime of each GHG reflects how long the gas stays in the atmosphere before natural processes (e.g., chemical reactions) remove it. A gas with a long lifetime can exert more warming influence than a gas with a short lifetime. In addition, different GHGs have different effects on the atmosphere. For this reason, each GHG is assigned a global warming potential (GWP) which is a measure of the heat-trapping potential of each gas over a specified period of time. GWPs are updated periodically with improvements to the underlying science.

Gases with a higher GWP absorb more heat than gases with a lower GWP, and thus have a greater effect on global warming and climate change. The GWP metric is used to convert all GHGs into CO_2e units, which allows policy makers to compare impacts of GHG emissions on an equal basis. The GWPs and atmospheric lifetimes for each GHG are shown in **Table 4.8-2**.

TABLE 4.8-2
Greenhouse Gases: Global Warming Potential and Atmospheric Lifetime

GHG	GWP (100-year time horizon)	Atmospheric Lifetime (years)
CO_2	1	100*
CH_4	25	12
N_2O	298	114
HFCs	Up to 14,800	Up to 270
PFCs:	Up to 12,200	2,600 – 50,000
SF_6	22,800	3,200
NF_3	17,200	740

Source: Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (CARB, 2021b).

** No single lifetime can be given for CO_2 because it moves throughout the earth system at differing rates. Some CO_2 will be absorbed very quickly, while some will remain in the atmosphere for thousands of years.*

Thresholds of Significance

As stated under Regulatory Context, §15064.4 of the CEQA Guidelines gives lead agencies the discretion to determine whether to use a model or other method to quantify GHG emissions and/or to rely on a qualitative or performance-based standard. For a quantitative analysis, a lead agency could determine a less-than-significant impact if a project did not exceed an established numerical threshold. For a qualitative/performance-based threshold, a lead agency could determine a less-than-significant impact if a project complies with State, regional, and/or local programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

If a qualitative approach is used, lead agencies should still quantify a project's construction and operational GHG emissions to determine the amount, types, and sources of GHG emissions resulting from the project. Quantification may be useful in indicating to the lead agency and the public whether emissions reductions are possible, and if so, from which sources. For example, if quantification reveals that a substantial portion of a project's emissions result from mobile sources (automobiles), a lead agency may consider whether design changes could reduce the project's vehicle miles traveled (OPR, 2018).

Neither the District nor SCAQMD have adopted numerical thresholds of significance or performance-based standards for GHG emissions. Numerical thresholds that have been referenced for other projects in the region range from 900 MT/year CO_2e (Tehama County) to 1,100 MT/year CO_2e for both construction and operational emissions and 10,000 MT/year CO_2e for stationary sources (various communities in the Sacramento Valley and Northeast Plateau air basins). For this project, BVWD has determined that a conservative threshold of 900 MT/year CO_2e is appropriate.

Project GHG Emissions

GHG emissions for the proposed project were estimated using the CalEEMod.2022.1.1.12 software. CalEEMod is a statewide model designed to quantify GHG emissions from land use projects. The model quantifies direct GHG emissions from construction and operation (including vehicle use), as well as indirect GHG emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use.

CalEEMod also includes the intensity factors for CO_2, CH_4, and N_2O for the utility company that will serve the proposed project. Therefore, CalEEMod uses PG&E's mix of renewable and non-renewable energy sources to estimate indirect GHG emissions associated with electricity use.

Output files, as well as site-specific inputs and assumptions, are provided in **Appendix A**.

- Emissions from construction are based on all construction-related activities, including but not limited to grading, site preparation, application of architectural coatings, use of construction equipment, material hauling, trenching, and paving.
- For purposes of the CalEEMod Analysis, it was assumed that construction would start in the fall of 2023 and occur over a period of approximately 18 months.
- Total land disturbance would be approximately 4 acres. To represent a worst-case scenario, it was estimated that 2,200 cubic yards (CY) of fill material would be imported and 2,200 CY would be exported; however, it is anticipated that earthwork volumes of cut and fill will balance and that there will be no net export of fill material.
- The total area for architectural coatings would be ±15,000 square feet.
- The total weight of demolition debris to be removed from the project area would be approximately 10 tons.
- It was conservatively estimated that 1.22 acres of Hidden Acres Road would be repaired/ restored to pre-existing conditions following completion of the project.
- The project would implement SCAQMD rules, regulations,and standard mitigation measures.
- Approximately 59 trees with a diameter of 6-inch DBH and larger would be removed to facilitate construction.

Construction Emissions

Emissions from construction are based on all construction-related activities associated with the proposed project, including but not limited to site preparation, grading, trenching, use of construction equipment, and material hauling. Construction of the proposed project would emit GHG emissions as shown in **Table 4.8-3**, primarily from the combustion of diesel fuel in heavy equipment.

TABLE 4.8-3
Estimated Construction-Related Greenhouse Gas Emissions

Total Construction Emissions (Metric Tons)					
Year	**Carbon Dioxide (CO_2)**	**Methane (CH_4)**	**Nitrous Oxide (N_2O)**	**Refrigerants**	**Carbon Dioxide Equivalent (CO_2e)**
2023	77	Trace	Trace	0.01	77.7
2024	308	0.01	Trace	0.03	310
2025	62.9	Trace	Trace	Trace	63.1
Total	**447.9**	**0.01**	**Trace**	**0.04**	**450.8**

Source: CalEEMod, 2023

Note: Totals may not add due to CalEEMod calculation factors and/or rounding.

Operational Emissions

The project's increase in operational emissions over existing levels would be attributed to indirect emissions associated with vehicle traffic, use of architectural coatings, and use of electricity to operate the new pump station, controls, water tank, and lighting. The generation of electricity through combustion of fossil fuels (e.g., coal, natural gas, and petroleum) produces GHG emissions.

Table 4.8-4 shows the estimated highest daily levels of operational emissions by source. For the proposed project, mobile sources include on-road motor vehicles and off-road engines and equipment used for maintenance activities. Area sources include consumer products and architectural coatings. Energy sources include electricity generated from fossil fuels (indirect emissions) that is used to operate pumps, motors, etc.

The project would not increase GHGs over existing levels due to water use or solid waste generation associated with the project. Refrigerants include those used in building cooling systems. Reporting under Vegetation reflects changes in sequestration from land use changes and tree removal. Construction emissions are amortized over a 30-year period, which is considered the minimum service life of the project, and added to the operational emissions.

TABLE 4.8-4
Estimated Annual Operational Greenhouse Gas Emissions

Total Emissions (Metric Tons)					
Source	**Carbon Dioxide (CO_2)**	**Methane (CH_4)**	**Nitrous Oxide (N_2O)**	**Refrigerants**	**Carbon Dioxide Equivalent (CO_2e)**
Mobile	79.6	< 0.005	< 0.005	0.14	81.2
Area	0	0	0	0	0
Energy	106	0.01	< 0.005	0	107
Water	0	0	0	0	0
Solid Waste	0	0	0	0	0
Refrigerants	0	0	0	0.60	0.60

Total Emissions (Metric Tons)					
Source	**Carbon Dioxide (CO_2)**	**Methane (CH_4)**	**Nitrous Oxide (N_2O)**	**Refrigerants**	**Carbon Dioxide Equivalent (CO_2e)**
Stationary	13.7	< 0.005	< 0.005	0	13.8
Vegetation	2.97	0	0	0	2.97
Amortized Construction Emissions	14.9	< 0.005	< 0.005	< 0.005	15.03
Total	**217.17**	**0.02**	**0.01**	**0.74**	**220.6**

Source: CalEEMod, 2023.

Note: Totals may not add due to CalEEMod calculation factors and/or rounding.

Table 4.8-4 shows that the highest levels of CO_2 emissions are anticipated to be indirect emissions associated with the generation of electricity from fossil fuels. However, the project will offset a portion of the increased power demand with energy generated from the District's existing 693-kilowatt solar power facility that is located west of the Water Tank Site. Further, as stated under Regulatory Context, the new standards established by SB 100 (2018) require 60 percent renewable energy by 2030 and 100 percent renewable energy by 2045 for both investor-owned and publicly owned utilities.

In addition, as stated in Section 4.6 (Energy), the installation of SCADA systems at three of the District's wells will allow the wells to be monitored remotely, resulting in a reduction in trips by the District's water treatment operators of about 1,300 miles per year, and a corresponding decrease in mobile source emissions. Further, the project's operational GHG emissions would not exceed the referenced numerical threshold of 900 MT/year CO_2e.

Therefore, the project's impacts associated with increased GHG emissions would be ***less than significant.***

Question B

See discussion under Regulatory Context and Question A above. A project is considered consistent with plans, policies, or regulations adopted to reduce GHG emissions if it implements the requirements of such plans, policies, or regulations and does not impede attainment of established GHG goals. BVWD would ensure compliance with applicable regulations adopted for the purpose of reducing GHG emissions through contractual obligations. Therefore, there would be ***no impact***.

CUMULATIVE IMPACTS

GHG emissions and global climate change are, by nature, cumulative impacts. Unlike criteria pollutants, which are pollutants of regional and local concern, GHGs are global pollutants and are not limited to the area in which they are generated. As discussed under Regulatory Context above, the State legislature has adopted numerous programs and regulations to reduce Statewide GHG emissions, and these programs and regulations apply to all development projects in the State. Because the project will comply with regulations adopted to reduce GHG emissions, the project's contribution to cumulative GHG emissions would be ***less than significant.***

MITIGATION

None necessary.

DOCUMENTATION

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University of California, Berkeley Law. 2021. California Climate Policy Dashboard. https://www.law.berkeley.edu/research/clee/research/climate/climate-policy-dashboard/. Accessed May 2023.

4.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §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 area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

REGULATORY CONTEXT

FEDERAL

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) is the primary federal law for the regulation of solid waste and hazardous waste in the United States and provides for the “cradle-to-grave” regulation that requires businesses, institutions, and other entities that generate hazardous waste to track such waste from the point of generation until it is recycled, reused, or properly disposed of. The U.S. Environmental Protection Agency (USEPA) has primary responsibility for implementing the RCRA.

USEPA’s Risk Management Plan

Sectiol12(r) of the federal CAA (referred to as the USEPA’s Risk Management Plan) specifically covers “extremely hazardous materials” which include acutely toxic, extremely flammable, and highly explosive substances. Facilities involved in the use or storage of extremely hazardous materials must implement a Risk Management Plan (RMP), which requires a detailed analysis of potential accident factors and implementation of applicable mitigation measures.

Federal Occupational Safety and Health Administration (OSHA)

The Occupational Safety and Health Act (OSHA) prepares and enforces occupational health and safety regulations with the goal of providing employees a safe working environment. OSHA regulations apply to the work place and cover activities ranging from confined space entry to toxic chemical exposure.

U.S. Department of Transportation

The United States Department of Transportation regulates the interstate transport of hazardous materials and wastes through implementation of the Hazardous Materials Transportation Act. This act specifies driver-training requirements, load labeling procedures, and container design and safety specifications. Transporters of hazardous wastes must also meet the requirements of additional statutes such as RCRA, discussed previously.

STATE

California Code of Regulations (CCR), Title 22, Definition of Hazardous Material

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, State, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined in Title 22, §66260.10, of the CCR as: *"A substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed."*

Department of Toxic Substances Control

The California Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the RCRA and the State Hazardous Waste Control Law. Both laws impose "cradle-to-grave" regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

California Occupational Safety and Health Administration (Cal/OSHA)

Cal/OSHA has primary responsibility for developing and enforcing state workplace safety regulations, including requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.

Regional Water Quality Control Board

The SWRCB and RWQCBs regulate hazardous substances, materials, and wastes through a variety of state statutes, including the Porter-Cologne Water Quality Control Act and underground storage tank cleanup laws. The Regional Boards regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. Any person proposing to discharge waste within the State must file a report of waste discharge with the appropriate regional board. The proposed project is located within the jurisdiction of the CVRWQCB.

Hazardous Materials Emergency Response/Contingency Plan

Chapter 6.95, §25503, of the California Health and Safety Code requires businesses that handle/store a hazardous material or a mixture containing a hazardous material to establish and implement a Business Plan for Emergency Response (Business Plan). A Business Plan is required when the amount of hazardous materials exceeds 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases. A Business Plan is also required if federal thresholds for extremely hazardous substances are exceeded. The Business Plan includes procedures to deal with emergencies following a fire, explosion, or release of hazardous materials that could threaten human health and/or the environment.

California Accidental Release Prevention Program (CalARP)

The goal of CalARP is to prevent accidental releases of substances that pose the greatest risk of immediate harm to the public and the environment. Facilities are required to prepare a Risk Management Plan in compliance with CCR Title 19, Division 2, Chapter 4.5, if they handle, manufacture, use, or store a federally regulated substance in amounts above established federal thresholds; or if they handle a state regulated substance in amounts greater than state thresholds and have been determined to have a high potential for accident risk.

LOCAL

Shasta County

The Shasta County General Plan includes the following Objectives that apply to the proposed project:

Chapter 5.6, Hazardous Materials; Chapter 5.4, Fire Safety and Sheriff Protection		
Objectives:	HM-1	Protection of life and property from contact with hazardous materials through site design and land use regulations and storage and transportation standards.
	HM-2	Protection of life and property in the event of the accidental release of hazardous materials through emergency preparedness planning.
	FS-1	Protect development from wildland and non-wildland fires by requiring new development projects to incorporate effective site and building design measures commensurate with level of potential risk presented by such a hazard and by discouraging and/or preventing development from locating in high-risk fire hazard areas.

Shasta County Hazardous Materials Area Plan, 2018

The Shasta County Hazardous Materials Area Plan establishes policies, responsibilities, and procedures required to protect the health and safety of Shasta County's citizens, the environment, and public and private property from the effects of hazardous materials emergency incidents.

The Area Plan establishes the emergency response organization for hazardous materials incidents occurring within Shasta County including the cities of Redding, Anderson, and Shasta Lake. This Plan documents the operational and general response procedures for the Shasta-Cascade Hazardous Materials Response Team (SCHMRT), which is the primary hazardous materials response group for Shasta County.

DISCUSSION OF IMPACTS

Questions A and B

The project would not result in any long-term impacts related to the transport of hazardous materials. During construction, limited quantities of hazardous substances, such as gasoline, diesel fuel, hydraulic fluid, solvents, oils, etc., may temporarily be brought into areas where improvements are proposed. There is a possibility of accidental release of hazardous substances into the environment, such as spilling petroleum-based fuels used for construction equipment. Construction contractors would be required to comply with applicable federal and state environmental and workplace safety laws. Additionally, construction contractors are required to implement Best Management Practices (BMPs) for the storage, use, and transportation of hazardous materials. Therefore, impacts would be ***less than significant***.

Question C

According to the Shasta County Office of Education, there are no schools within 0.25 miles of the Water Tank Site (Shasta County, 2019). The nearest school is Bella Vista Elementary School (grades K-8) on Old Alturas Road, approximately 0.5 miles northeast of the Water Tank site. Therefore, there would be ***no impact.***

Question D

The following databases were reviewed to locate hazardous waste facilities, land designated as hazardous waste property, and hazardous waste disposal sites in accordance with CGC §65962.5 (California Environmental Protection Agency, n.d.):

- List of Hazardous Waste and Substances sites from the DTSC EnviroStor Database.
- SWRCB GeoTracker Database
- List of solid waste disposal sites identified by SWRCB with waste constituents above hazardous waste levels outside the waste management unit.
- List of active Cease and Desist Orders and Clean-Up and Abatement Orders from the SWRCB.

Review of the above records show that there are no active clean-up sites within a one-mile radius of the Water Tank Site or any of the well sites, therefore, there would be ***no impact***.

Question E

According to Shasta County GIS data (Shasta County, 2022), the project area is not within an airport land use plan area. According to the Federal Aviation Administration (FAA, 2022), the nearest public airport is Redding Municipal Airport on Airport Road, approximately 8 miles southwest of the Water Tank Site. A private airstrip, Tews Field on Moody Creek Drive, is located approximately 5.9 miles northwest of the Water Tank Site. Therefore, the project would have ***no impact*** associated with an airport.

Question F

The proposed project does not involve a use or activity that could interfere with long-term emergency response or emergency evacuation plans for the area.

Although a temporary increase in traffic could occur during construction and could interfere with emergency response times, construction-related traffic would be minor due to the overall scale of the construction activities. Further, construction-related traffic would be spread over the duration of the construction schedule and would be minimal on a daily basis. Therefore, impacts during construction would be ***less than significant.***

Question G

As documented in Section 4.20 (Wildfires), proposed project does not include any development or improvements that would increase the long-term risk of wildland fires or expose people or structures to wildland fires. The Water Tank Site is located within a State Responsibility Area (SRA) High Fire Hazard Severity Zone. Well 3 and Well 6 are located within a SRA High FHSZ and Very High FHSZ respectively. Well 4 is located within the City of Redding Local Responsibility Area (LRA).

Equipment used during construction activities may create sparks that could ignite dry grass. Also, the use of power tools may increase the risk of wildland fire hazard. In accordance with Cal/OSHA regulations (Division 1, Chapter 4, Subchapter 4, Article 36 (Fire Protection and Prevention), a fire protection program must be followed throughout all phases of construction. The contractor is responsible for providing firefighting equipment and maintaining unobstructed access to all available firefighting equipment at all times. Implementation of the fire protection program ensures that impacts would be ***less than significant.***

CUMULATIVE IMPACTS

As documented above, the proposed project does not include any components that would result in long-term risks associated with hazards or hazardous materials. The storage and use of hazardous materials during construction must be conducted in accordance with State and local regulations, and steps must be taken during construction to reduce potential impacts associated with wildland fires. These regulations ensure that impacts are less than significant and that activities do not result in impacts that would be cumulatively considerable.

MITIGATION

None necessary.

DOCUMENTATION

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4.10 HYDROLOGY AND WATER QUALITY

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such 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 erosion or siltation on- or off-site;	☐	☐	☒	☐
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
(iv) impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

REGULATORY CONTEXT

FEDERAL

Clean Water Act (CWA)

The CWA (33 USC §1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality and was established to *"restore and maintain the chemical, physical, and biological integrity of the Nation's waters."* Pertinent sections of the Act are as follows:

1. Sections 303 and 304 provide for water quality standards, criteria, and guidelines.
2. Section 401 (Water Quality Certification (WQC)) requires an applicant for any federal permit that would authorize a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the Act.
3. Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the U.S. This permit program is administered by the State Water Resources Control Board (SWRCB) and is discussed in detail below.
4. Section 404, jointly administered by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA), establishes a permit program for the discharge of dredged or fill material into waters of the U.S.

Federal Anti-Degradation Policy

The federal Anti-Degradation Policy is part of the CWA (Section 303(d)) and is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that protects designated uses of water bodies (e.g., fish and wildlife, recreation, water supply, etc.). The water quality necessary to support the designated use(s) must be maintained and protected.

Safe Drinking Water Act

Under the 1974 Safe Drinking Water Act, most recently amended in 1996, USEPA regulates contaminants of concern to domestic water supply, which are those that pose a public health threat or that alter the aesthetic acceptability of the water. These types of contaminants are classified as either primary or secondary Maximum Contaminant Levels (MCLs). MCLs and the process for setting these standards are reviewed triennially.

Federal Emergency Management Agency (FEMA)

FEMA is responsible for mapping flood-prone areas under the National Flood Insurance Program (NFIP). Communities that participate in the NFIP are required to adopt and enforce a floodplain management ordinance to reduce future flood risks related to new construction in a flood hazard area. In return, property owners have access to affordable federally-funded flood insurance policies.

National Pollutant Discharge Elimination System (NPDES)

Under Section 402(p) of the CWA, the USEPA established the NPDES to enforce discharge standards for both point-source and non-point-source pollution. Dischargers can apply for individual discharge permits, or apply for coverage under the General Permits that cover certain qualified dischargers. Point-source discharges include municipal and industrial wastewater, stormwater runoff, combined sewer overflows, sanitary sewer overflows, and municipal separate storm sewer systems. NPDES permits impose limits on discharges based on minimum performance standards or the quality of the receiving water, whichever type is more stringent in a given situation.

STATE

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (California Water Code §13000 *et seq.*) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of waters of the State. The Porter-Cologne Act applies to surface waters, wetlands, and groundwater, and to both point and non-point sources of pollution. The Act requires a Report of Waste Discharge for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. The Regional Water Quality Control Boards (RWQCBs) enforce waste discharge requirements identified in the Report.

State Anti-Degradation Policy

In 1968, as required under the Federal Anti-Degradation Policy, the SWRCB adopted an Anti-Degradation Policy, formally known as the *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Water Board Resolution No. 68-16). Under the Anti-Degradation Policy, any actions that can adversely affect water quality in surface or ground waters must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial use of the water, and not result in water quality less than that prescribed in water quality plans and policies.

National Pollution Discharge Elimination System (NPDES)

Pursuant to the federal CWA, the responsibility for issuing NPDES permits and enforcing the NPDES program was delegated to the SWRCB and the nine RWQCBs. NPDES permits are also referred to as waste discharge requirements (WDRs) that regulate discharges to waters of the United States. Below is a description of relevant NPDES general permits.

Construction Activity and Post-Construction Requirements

Discharges from construction sites that disturb one acre or more of total land area are subject to the NPDES permit for *Discharges of Storm Water Runoff associated with Construction Activity* (currently Order No. 2022-0057-DWQ), also known as the Construction General Permit. The permitting process requires the development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP). Coverage under the Construction General Permit is obtained by submitting a Notice of Intent (NOI) to the SWRCB and preparing the SWPPP prior to the beginning of construction. The SWPPP must include Best Management Practices (BMPs) to reduce pollutants and any more stringent controls necessary to meet water quality standards. Dischargers must also comply with water quality objectives as defined in the applicable Basin Plan.

The Construction General Permit includes post-construction requirements for areas in the State not covered by a Standard Urban Storm Water Management Plan (SUSWMP) or a Phase I or Phase II Municipal Separate Storm Sewer System (MS4) Permit. These requirements are intended to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect water quality impacts (i.e., pollution and/or hydromodification) upstream or downstream.

Where applicable, the SWPPP submitted to the SWRCB with the NOI must include a description of all post-construction stormwater management measures. The SWRCB Stormwater Multiple Application and Report Tracking System (SMARTS) post-construction calculator or similar method would be used to quantify the runoff reduction resulting from implementation of the measures. The applicant must also submit a plan for long-term maintenance with the NOI. The maintenance plan must be designed for a minimum of five years and must describe the procedures to ensure that the post-construction stormwater management measures are adequately maintained.

Dewatering Activities (Discharges to Surface Waters and Storm Drains)

Construction dewatering activities that involve the direct discharge of relatively pollutant-free wastewater that poses little or no threat to the water quality of waters of the U.S. are subject to the provisions of Central Valley Water Quality Control Board (CVRWQCB) Order R5-2022-0006 (NPDES No. CAG995002), *Waste Discharge Requirements, Limited Threat Discharges to Surface Water*, as amended. WDRs for this order include discharge prohibitions, receiving water limitations, monitoring, and reporting, etc. Coverage is obtained by submitting a NOI to the applicable RWQCB.

Dewatering Activities (Discharges to Land)

Construction dewatering activities that are contained on land and do not discharge to waters of the U.S. are authorized under SWRCB Water Quality Order No. 2003-003-DWQ if the discharge is of a quality as good as or better than the underlying groundwater, and there is a low risk of nuisance. Note: The CVRWQCB may determine that construction dewatering discharges to land should be regulated under other WDRs or a conditional waiver, such as Resolution R5-2018-085, *Waiver of Reports of Waste Discharge and WDRs for Specific Types of Discharge within the Central Valley Region.*

Water Quality Control Plans (Basin Plans)

Each of the State's RWQCBs is responsible for developing and adopting a basin plan for all areas within its region. The Plans identify beneficial uses to be protected for both surface water and groundwater. Water quality objectives for all waters addressed through the plans are included, along with implementation programs and policies to achieve those objectives. Waste discharge requirements (WDRs) were adopted in order to attain the beneficial uses listed for the Basin Plan areas.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA), enacted in September 2014, establishes a framework for groundwater resources to be managed by local agencies in areas designated by the Department of Water Resources (DWR) as "medium" or "high" priority basins and basins identified as critically over drafted. Basins are prioritized based, in part, on groundwater elevation monitoring conducted under the California Statewide Groundwater Elevation Monitoring (CASGEM) program.

The SGMA requires local agencies in medium- and high-priority basins to form Groundwater Sustainability Agencies (GSAs) and be managed in accordance with locally developed Groundwater Sustainability Plans (GSPs). Medium- and high-priority basins must be managed under a GSP by January 31, 2022. Under SGMA, these basins should reach sustainability within 20 years of implementing their sustainability plans.

LOCAL

Shasta County

The Shasta County General Plan includes the following Objective and Policies that apply to the proposed project:

Chapter 5.2, Flood Protection; Chapter 6.6, Water Resources and Water Quality		
Objective:	FL-1	Protection of public health and safety, both on-site and downstream, from flooding through floodplain management which regulates the types of land uses which may locate in the floodplain, prescribes construction designs for floodplain development, and requires mitigation measures for development which would impact the floodplain by increasing runoff quantities.
Policies:	FL-c	Whenever possible, flood control measures should consist of channel diversions or limited floodplain designs which avoid alteration of creeks and their immediate environs.
	FL-h	The impacts of new development on the floodplain or other downstream areas due to increased runoff from that development shall be mitigated. In the case of the urban or suburban areas, and in the urban and town centers, the County may require urban or suburban development to pay fees which would be used to make improvements on downstream drainage facilities in order to mitigate the impacts of upstream development.
	W-a	Sedimentation and erosion from proposed developments shall be minimized through grading and hillside development ordinances and other similar safeguards as adopted and implemented by the County.

DISCUSSION OF IMPACTS

Question A

The proposed project has the potential to temporarily degrade water quality due to increased erosion during project construction; however, as discussed under Regulatory Context above, and in Section 4.7 under Question B, the SWRCB Construction General Permit requires implementation of an effective SWPPP that includes BMPs to control construction-related erosion and sedimentation and prevent damage to streams, watercourses, and aquatic habitat. The proposed project is subject to post-construction requirements included in the SWRCB Construction General Permit to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect impacts from stormwater runoff (i.e., pollution and/or hydromodification) upstream or downstream.

In addition, if dewatering is required during construction, the project is subject to a CVRWQCB General Order that includes specific requirements for monitoring, reporting, and implementing BMPs for construction dewatering activities. The District must also obtain a State Water Quality Certification (or waiver) from the CVRWQCB to ensure that the project will not violate established State water quality standards. The District also must file a Report of Waste Discharge for any discharge of waste to land or surface waters that may impair a beneficial use of surface or groundwater of the state.

Because construction and post-construction BMPs for erosion and sediment control would be implemented in accordance with the SWRCB Construction General Permit, the project would not violate any water quality standards or WDRs or significantly degrade surface or groundwater quality. Impacts would be ***less than significant.***

Question B

The District is located in the northern area of the Redding Area Groundwater Basin (Enterprise Subbasin and Millville Subbasin), which contains the main water-bearing geologic units in the northern Sacramento Valley.

According to the District's 2020 update to its Urban Water Management Plan (Bella Vista Water District, 2021), the District extracts groundwater from the Enterprise Subbasin, which is bounded on the west and southwest by the Sacramento River, on the north by the Klamath Mountains, and on the east by Little Cow Creek and Cow Creek.

The proposed project does not include the construction of new groundwater wells; however, construction of the new 3 MG water storage tank would triple the District's operational storage, enabling the District to maximize groundwater production of its existing wells.

As discussed under Regulatory Context above, the SGMA established a framework for groundwater resources to be managed by local agencies in areas designated by the DWR as medium or high priority basins. The Water Tank Site and well sites are located within the Redding Groundwater Basin – Enterprise Subbasin, which is currently designated as a medium priority basin (DWR, 2023). As required by the California SGMA, the Enterprise Anderson Groundwater Sustainability Agency (EAGSA) prepared and adopted the Enterprise Subbasin Groundwater Sustainability Plan (GSP) in January 2022 (Jacobs, 2022).

The GSP describes the current groundwater conditions in the Enterprise Subbasin, describes the hydrogeologic conceptual model, establishes a water budget, outlines local sustainable management criteria (SMC), and describes projects and programs for maintaining sustainability through the GSP planning and implementation period.

The GSP identifies sustainable management criteria (SMC) to demonstrate avoidance of undesirable results for five sustainability indicators: chronic lowering of groundwater levels; reduction of groundwater storage; depletions of interconnected surface water; degraded groundwater quality; and land subsidence. Undesirable results occur when significant and unreasonable effects for any of the sustainability indicators are caused by groundwater conditions occurring throughout the Subbasin.

The GSP addresses the sustainable yield of the subbasin, which is an estimate of the maximum quantity of groundwater that can be pumped on a long-term basis without causing undesirable results. The GSP analyzed an "extreme pumping" projection that incorporates future water demands beyond those that are anticipated as a result of population growth and climate change. Under the extreme pumping scenario, the average projected groundwater pumping in the Enterprise Subbasin would be 75,000 acre-feet per year (AFY), as compared to an estimated 30,000 AFY needed to accommodate anticipated population growth and current climate change models (Jacobs, 2022). The GSP concludes that based on the locally defined SMC, undesirable results are not currently present in the Subbasin and are not anticipated to occur under the extreme pumping scenario.

Therefore, although the proposed project would allow the District to maximize groundwater production of its existing wells, any increased pumping would not result in undesirable results. Further, the District will continue local actions to manage local water resources, including implementing the District's Drought Contingency Plan and promoting water conservation in dry and multiple-dry years as necessary. In addition, installing SCADA systems at the wells would improve system efficiency and allow the District to more effectively manage its groundwater supplies by allowing the wells to be operated remotely.

Implementation of the GSP includes ongoing monitoring to ensure that necessary data are collected for each of the sustainability indicators identified in the GSP. The EAGSA is required to submit annual reports to the Department of Water Resources (DWR), as well as five-year GSP Assessment Reports, and GSP Periodic Evaluations and Assessments.

Construction of the new water tank, pump station building, and appurtenant improvements would result in an increase in impervious surface of ±0.37 acres. The increase in impervious surface would

decrease the area available for groundwater recharge. Natural groundwater recharge within the subbasin occurs through recharge from precipitation, irrigation, streams and irrigation channels, and subsurface inflow from adjacent subbasins (Jacobs, 2022). Recharge to the principal aquifer formation is mostly by infiltration of stream flows and direct infiltration of precipitation in the Subbasin. The project's increase in impervious surface represents a small percentage of the entire surface area of the hydrologic region. Runoff would be directed to areas with pervious surfaces, and undeveloped land surrounding the project site would remain available for groundwater recharge.

Therefore, as documented above, the project would not decrease groundwater supplies or interfere with groundwater recharge in a manner that would impede sustainable groundwater management of the basin. Impacts would be ***less than significant.***

Question C

As stated under Question B, the project would add ±0.37 acres of impervious surface at the Water Tank Site. The project also includes filling ±90 linear feet of the existing overflow drainage channel and replacing the drainage channel with a new underground 36-inch diameter overflow drainpipe; a new headwall would be constructed at the end of the drainpipe. The addition of impervious surface and modifications to the existing drainage channel would change the existing drainage pattern in the project area.

Improvement plans for the project would be prepared by a licensed engineer to ensure that the improvements do not alter drainage patterns in the area in a manner that would result in substantial erosion or siltation on- or off-site, increase the rate or amount of runoff, or provide additional sources of polluted runoff. The proposed project is also subject to post-construction requirements included in the SWRCB Construction General Permit to ensure that the post-construction conditions at the project site do not cause or contribute to direct or indirect impacts from stormwater runoff (i.e., pollution and/or hydromodification) upstream or downstream.

Implementation of post-construction measures and completion of drainage improvements as recommended by a licensed engineer ensures that impacts would be ***less than significant***.

Question D

A tsunami is a wave generated in a large body of water (typically the ocean) by fault displacement or major ground movement. The project area is located approximately 100 miles east of the Pacific Ocean, and there is no risk of tsunami. A seiche is a large wave generated in an enclosed body of water in response to ground shaking. There are no large enclosed bodies of water in proximity to the project and no risk of project inundation by a seiche.

According to the FEMA Flood Insurance Rate Maps (Panels 06089C1265H and 06089C1590H effective December 16, 2021, and 06089C560G and 06089C1554G, effective March 17, 2011), work at the Water Tank Site, Hidden Acres Road, and Well sites 3 and 4 would not occur in or adjacent to a designated flood hazard zone. The Well 6 site is located in the 100-year flood hazard zone of Salmon Creek/Stillwater Creek (see **Figure 4.10-1**); however, work at this location is limited to installing a radio antenna on the existing well building for the SCADA system, and there would be no increased risk of the release of pollutants due to a flood. Therefore, there is no potential for release of pollutants due to inundation by seiche, tsunami, or flood. There would be ***no impact***.

Question E

As documented under Question A, implementation of BMPs during construction as well as post-construction measures in accordance with the Construction General Permit ensures that the project does not conflict with or obstruct implementation of a water quality control plan. As stated under Question B, the project would not decrease groundwater supplies or interfere with groundwater recharge in a manner that would impede sustainable groundwater management or conflict with the GSP for the Enterprise Subbasin. Impacts would be ***less than significant.***

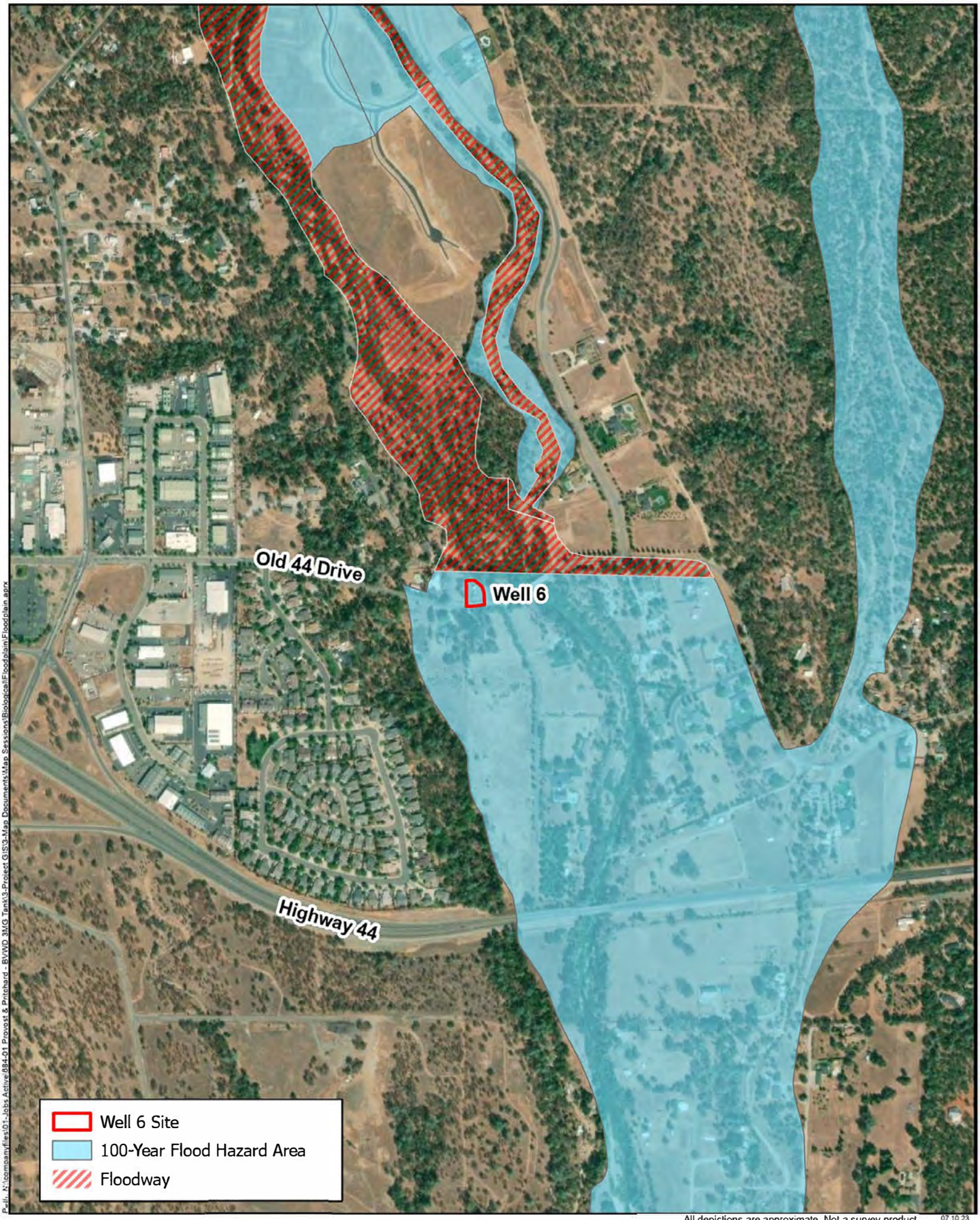


Figure 4.10-1

FEMA-Designated Flood Hazard Areas

ENPLAN

CUMULATIVE IMPACTS

The proposed project and other potential cumulative projects in the region, including growth resulting from build-out of the Shasta County General Plan, could result in degradation of water quality, adverse impacts to groundwater supplies and groundwater recharge, and an increased risk of flooding due to additional surface runoff generated by the projects.

All projects in the State that result in land disturbance of one acre or more are required to comply with the SWRCB General Construction NPDES permit which requires implementation of BMPs to reduce pollutants and any additional controls necessary to meet water quality standards, as well as to avoid the creation of unstable slopes or filled areas that could adversely influence stormwater runoff. All projects must also implement post-construction measures in accordance with the Construction General Permit, MS4 permit, or a SUSWMP to ensure that the post-construction conditions do not cause or contribute to direct or indirect water quality impacts (i.e., pollution and/or hydromodification) upstream or downstream. Compliance with existing resource agency requirements ensures that the proposed project's cumulative impacts to hydrology and water quality are less than significant.

MITIGATION

None necessary.

DOCUMENTATION

Bella Vista Water District. 2021. Urban Water Management Plan, 2020 Update. https://www.bvwd.org/documents/503/BVWD_2020_UWMP_Final_2021-06-17.pdf. Accessed May 2023.

California Department of Water Resources. 2023. Basin Prioritization Dashboard, Sustainable Groundwater Management Act. https://gis.water.ca.gov/app/bp-dashboard/final/. Accessed March 2023.

Central Valley Regional Water Quality Control Board. 2019. Water Quality Control Plan for the Sacramento and San Joaquin River Basins. https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201902.pdf. Accessed October 2022.

Jacobs. 2022. Enterprise Subbasin Groundwater Sustainability Plan. https://eagsa-redding.hub.arcgis.com/documents/571b6f24eccb478c878f06aa430e30ae/explore. Accessed May 2023.

Federal Emergency Management Agency. 2021, 2011. National Flood Hazard Map (Panels 06089C1265H and 06089C1590H, effective December 16, 2021, and 06089C560G and 06089C1554G, effective March 17, 2011). https://www.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd. Accessed May 2023.

4.11 LAND USE AND PLANNING

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any applicable land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☒	☐	☐

REGULATORY CONTEXT

There are no federal regulations pertaining to land use and planning that apply to the proposed project.

STATE

California Government Code (CGC)

CGC §65300 *et seq.* contains many of the State laws pertaining to the regulation of land uses by cities and counties. These regulations include requirements for general plans, specific plans, subdivisions, and zoning. State law requires that all cities and counties adopt General Plans that include seven mandatory elements: land use, circulation, conservation, housing, noise, open space, and safety. A General Plan is defined as a comprehensive long-term plan for the physical development of the county or city, and any land outside its boundaries that is determined to bear relation to its planning. A development project must be found to be consistent with the General Plan prior to project approval.

CGC §65302(a) describes the required content of a land use element and states that the land use element must designate the proposed general distribution, general location, and extent of land uses for housing, businesses, industry, open space, recreational facilities, public facilities, areas subject to flooding, and other categories of public and private uses. The land use element assists in guiding decision-making related to zoning, subdivisions, and public works.

LOCAL

Shasta County

The County's General Plan includes objectives and policies designed for the purpose of avoiding or minimizing impacts to the natural environment. The General Plan recognizes that major factors of the natural environment are landforms, water, climate, minerals, soils, vegetation, and wildlife. The Shasta County Code (SCC) implements the County's General Plan as well as related State regulations.

DISCUSSION OF IMPACTS

Question A

Land use impacts are considered significant if a proposed project would physically divide an existing community (a physical change that interrupts the cohesiveness of the neighborhood). The proposed project does not include any components that would create a barrier for existing or planned development; therefore, there would be ***no impact***.

Question B

As discussed in each resource section of this Initial Study, the proposed project is consistent with applicable policies and objectives of the Shasta County General Plan and regulations of the regulatory agencies identified in Section 1.8 of this Initial Study. Where necessary, mitigation measures are included to reduce impacts to less than significant levels. Therefore, with implementation of the mitigation measures identified in Section 1.10, the proposed project would not conflict with any plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect; impacts would be ***less than significant.***

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the project area, including population growth resulting from build-out of the County's General Plan, would be developed in accordance with local and regional planning documents. Thus, cumulative impacts associated with land use compatibility are expected be less than significant. In addition, with implementation of the recommended mitigation measures, the proposed project is consistent with the General Plan land use designations, goals, and policies, and would not contribute to the potential for adverse cumulative land use effects.

MITIGATION

No additional mitigation necessary.

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan. https://www.shastacounty.gov/planning/page/general-plan. Accessed October 2022.

_____. 2023. Shasta County Code of Ordinances. https://library.municode.com/ca/shasta_county/codes/code?nodeId=SHCOCA. Accessed May 2023.

4.12 MINERAL RESOURCES

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

REGULATORY CONTEXT

There are no federal or local regulations pertaining to mineral resources that apply to the project.

STATE

Surface Mining and Reclamation Act of 1975 (SMARA)

The SMARA, Chapter 9, Division 2 of the PRC, provides a comprehensive surface mining and reclamation policy to ensure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. Mineral Resource Zones (MRZs) are applied to sites determined by the California Geological Survey (CGS) as being a resource of regional significance, and are intended to help maintain mining operations and protect them from encroachment of incompatible uses. The MRZs indicate the potential for an area to contain significant mineral resources.

DISCUSSION OF IMPACTS

Questions A and B

According to the CGS (California Department of Conservation, 2015), a SMARA mineral land classification study was conducted for Shasta County in 1997 (Dupras, 1997). The study covers five important industrial mineral resources that were being mined in Shasta County at that time; lands containing these industrial minerals have been classified and designated as MRZs in the County. According to the study, there are no designated MRZs in or near the project area. In addition, there are no active mines near the project area. Therefore, there would be ***no impact***.

CUMULATIVE IMPACTS

As stated above, the proposed project would not result in impacts to mineral resources; therefore, the proposed project would not contribute to adverse cumulative impacts to mineral resources.

MITIGATION

None necessary.

DOCUMENTATION

California Department of Conservation, California Geological Survey. 2015. Mineral Land Classification. https://maps.conservation.ca.gov/cgs/informationwarehouse/. Accessed October 2022.

California Department of Conservation, Division of Mine Reclamation. 2016. Mines Online Maps. https://maps.conservation.ca.gov/mol/index.html. Accessed October 2022.

Dupras, D. 1997. Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite within Shasta County, California. https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc. Accessed April 2023.

4.13 NOISE

Would the project result in:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or of applicable standards of other agencies?	☐	☒	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

NOISE FUNDAMENTALS

Commonly used technical acoustical terms are defined as follows:

Acoustics The science of sound.

Ambient Noise The distinctive pre-project acoustical characteristics of a given area consisting of all noise sources audible at that location.

A-Weighting The sound level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear and gives good correlation with subjective reactions to noise.

Decibel dB The fundamental unit of measurement that indicates the intensity of a sound, defined as ten times the logarithm of the ratio of the sound pressure squared over the reference pressure squared.

L_{eq} L_{eq} (Equivalent Continuous Sound Pressure Level) is the average sound pressure level during a period of time that takes into account the cumulative effect of multiple noise events.

REGULATORY CONTEXT

There are no federal or state regulations pertaining to noise that apply to the proposed project.

LOCAL

Shasta County

The Shasta County General Plan includes the following Objectives and Policies that apply to the proposed project:

Chapter 5.5, Noise		
Objectives:	N-1	To protect County residents from the harmful and annoying effects of exposure to excessive noise.

	N-2	To protect the economic base of the County by preventing incompatible land uses from encroaching upon existing or programmed land uses likely to create significant noise impacts.
	N-3	To encourage the application of state-of-the-art land use planning methodologies in the area of managing and minimizing potential noise conflicts.
Policies:	N-b	Noise likely to be created by a proposed non-transportation land use shall be mitigated so as not to exceed the noise level standards of Table N-IV as measured immediately within the property line of adjacent lands designated as noise-sensitive. Noise generated from existing or proposed agricultural operations conducted in accordance with generally accepted agricultural industry standards and practices is not required to be mitigated.
	N-i	Where noise mitigation measures are required to achieve the standards of Tables N-IV and N-VI, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving compliance with the noise standards only after all other practical design-related noise mitigation measures have been integrated into the project.
	N-l	The use of site planning and building materials/design as primary methods of noise attenuation is encouraged. Recommended techniques include, but are not limited to, such items as: <u>Site Planning</u> • Use of building setbacks and dedication of noise easements to increase the distance between the noise source and the receiver. • Locating uses and orienting buildings that are compatible with higher noise levels adjacent to noise-generators or in clusters as means to shield more noise-sensitive areas and uses. • Using noise-tolerant structures, such as garages or carports, to shield noise-sensitive areas. • Clustering office, commercial, or multiple-family residential structures to reduce interior open-space noise levels. • Locate automobile and truck access to commercial or industrial land uses abutting residential parcels at a maximum practical distance from the residential parcels. • Avoid the siting of commercial and industrial loading and shipping facilities adjacent to residential parcels whenever practicable. • Parking areas for commercial and industrial uses should be set back from adjacent residential uses to the maximum extent feasible, or buffered and shielded by walls, fences, berms, and/or landscaping techniques.

Shasta County General Plan Table N-IV
Noise Level Performance Standards for New Projects Affected By or Including Non-Transportation Sources

Noise Level Descriptor	Daytime (7:00 AM – 10:00 PM)	Nighttime (10:00 PM – 7:00 AM)
Hourly L_{eq}, dB	55 decibels	50 decibels

In rural areas where large lots exist, the exterior noise level standard shall be applied at a point 100 feet away from the residence.

DISCUSSION OF IMPACTS

Question A

Some individuals and groups of people are considered more sensitive to noise than others and are more likely to be affected by the existence of noise. A sensitive receptor is defined as any living entity or aggregate of entities whose comfort, health, or well-being could be impaired or endangered by the existence of noise. The Shasta County General Plan identifies noise-sensitive areas and uses as residential areas, parks, schools, churches, hospitals, and long-term care facilities.

Sensitive receptors near Hidden Acres Road, the Water Tank Site, and well sites include single-family residences. The effects of noise on people can include annoyance, nuisance, and dissatisfaction; interference with activities such as speech, sleep, and learning; and physiological effects such as hearing loss or sudden startling.

A common method to predict human reaction to a new noise source is to compare a project's predicted noise level to the existing environment (ambient noise level). A change of 1 dBA (A-weighted decibels) generally cannot be perceived by humans; a 3-dBA change is considered to be a barely noticeable difference; a 5-dBA change is typically noticeable; and a 10-dBA increase is considered to be a doubling in loudness and can cause an adverse response (Caltrans, 2013).

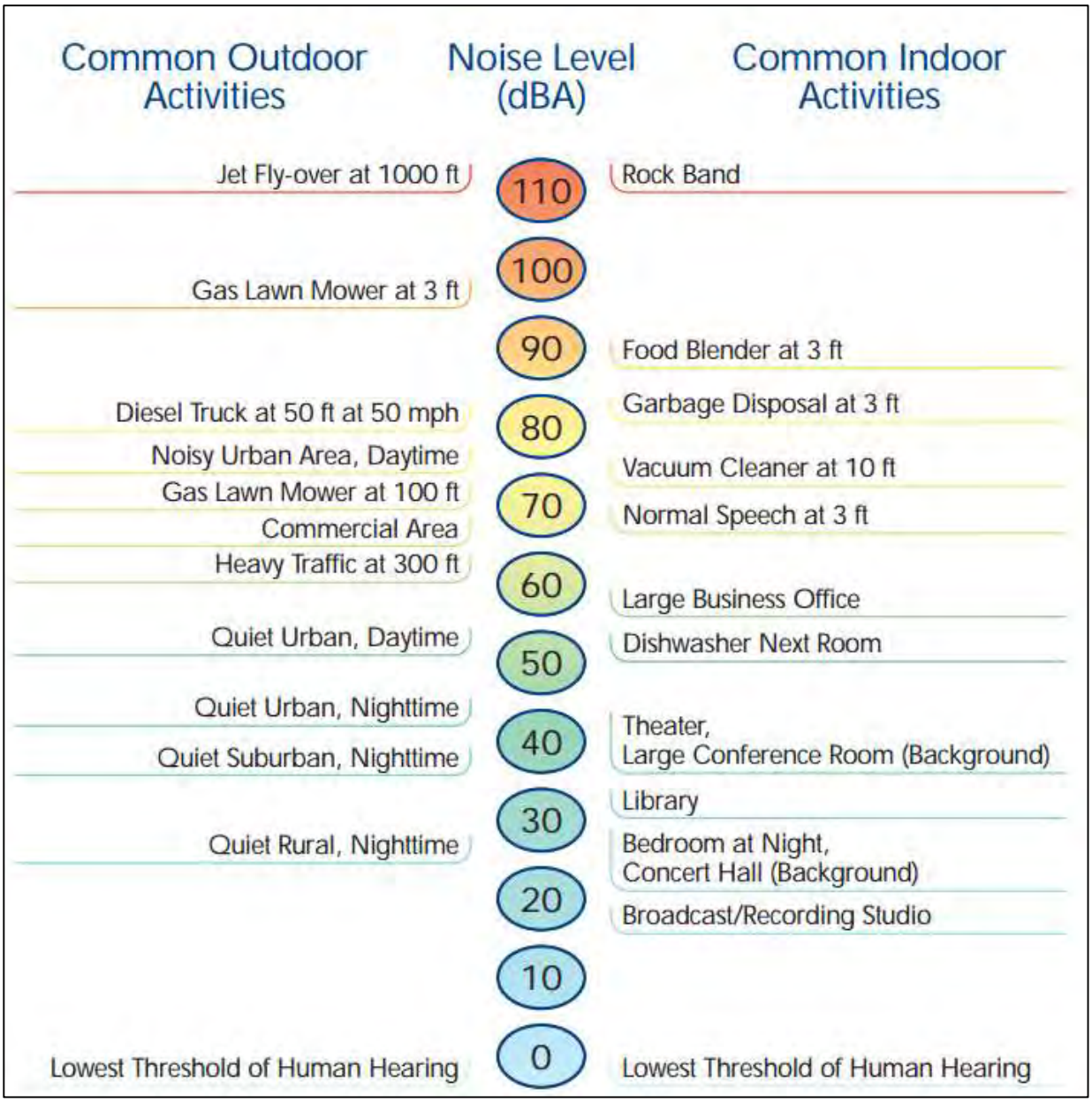
Construction Noise

Construction activities associated with the project would temporarily increase noise levels at nearby sensitive land uses. Repairs to Hidden Acres Road would occur as close as ±60 feet from some of the dwelling units. Improvements at the Water Tank Site would occur as close as ±225 feet from surrounding dwelling units. The nearest sensitive receptors to the existing wells are a residence ±100 feet south of Well 6 and a residence ±300 feet south of Well 3; there are no sensitive receptors in close proximity to Well 4.

Temporary traffic noise impacts along local streets would occur due to an increase in traffic from construction workers commuting to the site; however, it is not anticipated that worker commutes would significantly increase daily traffic volumes. Noise also would be generated during delivery of construction equipment and materials to the project site.

Noise impacts resulting from construction activities would depend on: 1) the noise generated by various pieces of construction equipment; 2) the timing and duration of noise-generating activities; 3) the distance between construction noise sources and noise-sensitive receptors; and 4) existing ambient noise levels. **Figure 4.13-1** shows noise levels of common activities to enable the reader to compare construction-noise with common activities. Noise levels from construction-related activities would fluctuate, depending on the number and type of construction equipment operating at any given time.

Figure 4.13-1
Noise Levels of Common Activities



Source: Caltrans, 2016.

TABLE 4.13-1
Examples of Construction Equipment
Noise Emission Levels

Equipment	Typical Noise Level (dBA) 50 feet from Source
Roller	74
Concrete Vibrator	76
Pump	76
Saw	76
Backhoe	80
Air Compressor	81
Generator	81
Compactor	82
Concrete Pump	82
Compactor (ground)	83
Crane, Mobile	83
Concrete Mixer	85
Dozer	85
Excavator	85
Grader	85
Loader	85
Jack Hammer	88
Truck	88
Paver	89
Scraper	89

Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. Federal Highway Administration, 2019.

As shown in **Table 4.13-1**, construction equipment anticipated to be used for project construction typically generates maximum noise levels ranging from 74 to 89 dBA at a distance of 50 feet. Based on project characteristics, the average noise level from construction activities would be 85 dBA.

Noise from construction activities generally attenuates at a rate of 6 decibels (dBA) (on hard and flat surfaces) to 7.5 dBA (on soft surfaces, such as uneven and/or vegetated terrain) per doubling of distance. If the receptor is far from the noise source, other factors come into play. For example, barriers such as fences or buildings that break the line of sight between the source and the receiver typically reduce sound levels by at least 5 dBA. Likewise, wind can reduce noise levels by 20 to 30 dBA over long distances.

In the project area, most of the improvements would occur on soft, semi-vegetated terrain, and it is anticipated that noise would attenuate a 7.5 dBA per doubling of distance. At a distance of 60 feet, 85 dBA noise levels would drop to 83 dBA.

Because it is a logarithmic unit of measurement, a decibel cannot be added or subtracted arithmetically. The combination of two or more identical sound pressure levels at a single location involves the addition of logarithmic quantities as shown in **Table 4.13.2.** A doubling of identical sound sources results in a sound level increase of approximately 3 dB. Three identical sound sources would result in a sound level increase of approximately 4.8 dB.

For example, if the sound from one backhoe resulted in a sound pressure level of 80 dB, the sound level from two backhoes would be 83 dB, and the sound level from three backhoes would be 84.8 dB.

TABLE 4.13.2
Cumulative Noise: Identical Sources

Number of Sources	Increase in Sound Pressure Level (dB)
2	3
3	4.8
4	6
5	7
10	10
15	11.8
20	13

Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. The Engineering Toolbox, 2019.

In addition, as shown in **Table 4.13.3**, the sum of two sounds of a different level is only slightly higher than the louder level. For example, if the sound level from one source is 80 dB, and the sound level from the second source is 85 dB, the level from both sources together would be 86 dB; if the sound level from one source is 80, and the sound level from the second source is 89 dB, the level from both sources together would be 89.5.

TABLE 4.13.3
Cumulative Noise: Different Sources

Sound Level Difference between two sources (dB)	Decibels to Add to the Highest Sound Pressure Level
0	3
1	2.5
2	2
3	2
4	1.5
5	1
6	1
7	1
8	0.5
9	0.5
10	0.5
Over 10	0

Sources: U.S. Department of Transportation, Federal Transit Administration, 2018. The Engineering Toolbox, 2019.

With two pieces of equipment with a noise level of 89 dBA operating simultaneously noise levels could reach approximately 87 dBA at the exterior of single-family residences within 60 feet of the work area. Assuming typical California construction methods, interior noise levels are about 10 to 15 dBA lower than exterior levels within residential units with the windows partially open, and approximately 20 to 25 decibels lower than exterior noise levels with the windows closed. Interior noise levels could reach 62 to 67 dBA when equipment operates within 60 feet of a residence.

In addition, Occupational Safety and Health Administration (OSHA) regulations (Title 29 CFR, §1926.601(b)(4)(i) and (ii) and §1926.602(a)(9)(ii)) state that no employer shall use any motor vehicle, earthmoving, or compacting equipment that has an obstructed view to the rear unless the vehicle has a reverse signal alarm audible above the surrounding noise level or the vehicle is backed up only when an observer signals that it is safe to do so.

Although these regulations require an alarm to be only at a level that is distinguishable from the surrounding noise level (±5 dB), some construction vehicles are pre-equipped with non-adjustable alarms that range from 97 to 112 dBA at four feet. At a distance of 60 feet, 97 to 112 dBA noise levels would decrease to 73 to 88 dBA; depending on the decibel level of the alarm, interior noise levels from a reverse signal alarm could sporadically reach 63 to 68 dBA, provided that the windows were closed.

In the worst-case scenario, with operation of two pieces of equipment with a cumulative noise level of 87 dBA, noise levels at the exterior of the nearest residence could sporadically reach ±90 dBA. Interior noise levels could reach ±70 dBA, provided the windows were closed.

The exposure to loud noises (above 85 dB) over a long period of time may lead to hearing loss. The longer the exposure, the greater the risk for hearing loss, especially when there is not enough time for the ears to rest between exposures. Hearing loss can also result from a single extremely loud sound at very close range, such as sirens and firecrackers (Centers for Disease Control, 2018). Even when noise is not at a level that could result in hearing loss, excessive noise can affect quality of life, especially during nighttime hours.

Shasta County does not have specific standards or thresholds for construction noise. The California Division of Safety and Health and OSHA have established thresholds for exposure to noise in order to prevent hearing damage. The maximum allowable daily noise exposure is 90 dBA for 8 hours, 95 dBA for 4 hours, 100 dBA for 2 hours, 105 dBA for 1 hour, 110 dBA for 30 minutes, and 115 dBA for 15 minutes (Caltrans, 2013).

Disregarding the noise attenuation due to intervening topography, barriers, wind, and other factors, in the worst-case scenario, interior noise levels from construction equipment operation would be ±70 dBA provided the windows were closed. However, construction equipment does not operate continuously throughout the entire work day. In addition, reverse signal alarms are needed only intermittently, and each occurrence involves only seconds of elevated noise levels. Therefore, while construction noise may reach considerable levels for short instances, much of the time the construction noise levels at nearby sensitive receptors would be moderate.

In order to minimize impacts from construction noise, **Mitigation Measure MM 4.13.1** restricts construction noise to the daytime hours of 7:00 AM to 7:00 PM, Monday through Saturday, **MM 4.13.2** requires that construction equipment be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds. Further, **MM 4.13.3** mandates that stationary equipment, such as generators and compressors, shall be located at the furthest practical distance from nearby noise-sensitive land uses. Implementation of **MM 4.13.1, 4.13.2, and 4.13.3** ensures that impacts during construction are less than significant.

Operational Noise

Project components with the potential for operational noise impacts include new pumps, motors, and mechanical equipment at the Water Tank Site. Ambient noise levels in the vicinity of the Water Tank Site are typical of rural residential areas. Primary noise sources in rural environments are household pets, landscape equipment (e.g., lawnmowers, hedge trimmers, leaf blowers, etc.), natural noise (wind, birds, etc.), and vehicular traffic, including cars, trucks, and emergency vehicles. Noise levels from these activities typically range from 65 to 90 dBA at 50 feet.

The nearest sensitive receptor to the proposed pump station is a single-family residence located ±500 feet to the southeast on the south side of Hidden Acres Road.

As described under Regulatory Context above, the County's General Plan identifies daytime and nighttime exterior noise level standards for new projects affected by or including non-transportation sources. For rural areas where large lots exist, such as areas surrounding the Water Tank Site, the exterior noise level standards shall be applied 100 feet from the residence.

Detailed specifications for the pump station have not yet been identified; however, based on review of pump stations with similar components, operational noise associated with the proposed pump station is estimated at ±77 dBA at 50 feet from the structure, depending on the specific equipment installed.

Noise levels could reach ±59 dBA at 100 feet from the nearest residence (located ±500 feet to the southeast) if no noise barrier was present. Exterior noise levels at the nearest residence could reach ±57 dBA if no noise barrier was present, and interior noise levels at the residence could reach ±37 dBA, provided that the windows were closed.

A concrete masonry wall would be installed on the southwest side of the pumps and motors, which is anticipated to provide noise attenuation of at least 30 dBA, depending on final design, which would reduce noise levels at 100 feet from the nearest residence to 29 dBA and ensure consistency with the County's noise standards.

However, because specifications for noise-generating equipment are not known at this time, there is a potential for the proposed project to exceed the County's noise level standards. Therefore, **MM 4.13.4** is included to ensure compliance with the established noise standards.

As documented above, implementation of **MM 4.13.1** through **MM 4.13.4** ensures that impacts associated with temporary construction noise and operational noise would be ***less than significant.***

Question B

Excessive vibration during construction occurs only when high vibration equipment (e.g., compactors, large dozers, etc.) are operated. The proposed project may require limited use of equipment with high vibration levels during construction. Potential effects of ground-borne vibration include perceptible movement of building floors, rattling windows, shaking of items on shelves or hangings on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Both human and structural responses to ground-borne vibration are influenced by various factors, including ground surface, distance between the source and the receptor, and duration.

The most common measure used to quantify vibration amplitude is the peak particle velocity (PPV). PPV is a measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. Although there are no federal, state, or local regulations for ground-borne vibration, the California Department of Transportation (Caltrans) has developed criteria for evaluating vibration impacts, both for potential structural damage and for human annoyance. The Caltrans Transportation and Construction Vibration Guidance Manual (2020) was referenced in the analysis of construction-related vibration impacts.

Table 4.13-4 includes the potential for damage to various building types as a result of ground-borne vibration. Transient sources include activities that create a single isolated vibration event, such as blasting. Continuous, frequent, or intermittent sources include jack hammers, bulldozers, and vibratory rollers.

TABLE 4.13-4
Structural Damage Thresholds from Ground-Borne Vibration

Structure Type	Vibration Level (Inches per Second PPV)	
	Transient Sources	Continuous/ Frequent/ Intermittent Sources
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Historic and some old buildings	0.5	0.25
Newer industrial/commercial buildings	2.0	0.5

Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2020.

Table 4.13-5 indicates the potential for annoyance to humans as a result of ground-borne vibration.

TABLE 4.13-5
Human Response to Ground-Borne Vibration

Human Response	Vibration Level (Inches per Second PPV)	
	Transient Sources	Continuous/ Frequent/ Intermittent Sources
Barely Perceptible	0.04	0.01
Distinctly Perceptible	0.25	0.04
Strongly Perceptible	0.9	0.10
Disturbing	2.0	0.4

Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2020.

Table 4.13-6 indicates vibration levels for various types of construction equipment that may be used for the proposed project.

TABLE 4.13-6
Examples of Construction Equipment Ground-Borne Vibration

Equipment Type	Inches per Second PPV at 25 feet
Bulldozer (small)	0.003
Bulldozer (large)	0.089
Jackhammer	0.035
Loaded trucks	0.076
Vibratory roller	0.210

Source: Caltrans Transportation and Construction Vibration Guidance Manual, 2020.

Vibration levels from construction equipment use at varying distances from the source can be calculated using the following formula:

$PPV_{Equipment} = PPV_{Ref} \times (25/D)^n$, where:

$PPV_{Equipment}$ is the peak particle velocity in inches/second of the equipment, adjusted for distance

PPV_{Ref} is the reference vibration level in inches per second at 25 feet.

D is the distance from the equipment to the receptor

n is the value related to the attenuation rate through ground, based on soil class (1.5 for competent soils including most sands, sandy clays, silty clays, gravel, silts, weathered rock; 1.1 for hard soils, including dense compacted sand, dry consolidated clay, consolidated glacial till, and some exposed rock).

In this equation, PPV_{Ref} = reference PPV at 25 feet, D = distance from equipment to the receiver in feet, and n = 1.1 (based on information contained in the KC Engineering Geotechnical Report prepared for the project). Based on this equation, in the worst-case scenario, a vibratory roller compacting asphalt on Hidden Acres Road at a distance of 60 feet from a residence would generate a PPV of 0.080 inches per second. As shown in **Table 4.13-4**, vibration levels are not anticipated to be at a level that would cause structural damage. In addition, as shown in **Table 4.13-5**, these vibration levels would be barely perceptible but would not rise to a level that would be considered disturbing.

New equipment at the Water Tank Site has a potential to result in a permanent increase in groundborne vibration or groundborne noise due to the operation of mechanical equipment (e.g., pumps, motors, etc.). Due to the distance between the pump station and the nearest residence (±500 feet), it is not expected that equipment at the Water Tank Site would generate vibration that would be detectable at the residence. Therefore, impacts associated with vibration would be ***less than significant***.

Question C

See discussion in Section 4.9 under Question E. The nearest public airport is Redding Regional Airport, approximately 8 miles southwest of the Water Tank Site. There is also a private airstrip, Tews Field on Moody Creek Drive, approximately 5.9 miles northwest of the Water Tank Site. The proposed project does not have any components that would increase use of the airstrip or airports, nor would it expose people residing or working in the project area to excessive noise levels associated with an airport or private airstrip; there would be ***no impact***.

CUMULATIVE IMPACTS

As documented above, a temporary increase in daytime noise levels would occur during construction activities; however, **MM 4.13.1** through **MM 4.13.3** would minimize temporary noise impacts. **MM 4.13.4** ensures that operational noise levels comply with Shasta County noise standards. Other cumulative projects also must comply with the County's noise standards. With implementation of **MM 4.13.1** through **MM 4.13.4**, the proposed project's contribution to cumulative noise impacts would be less than significant.

MITIGATION

MM 4.13.1 Construction activities (excluding activities that would result in a safety concern to the public or construction workers) shall be limited to between the daytime hours of 7:00 A.M. and 7:00 P.M., Monday through Saturday. Construction activities shall be prohibited on Sundays and federal/state recognized holidays. Exceptions to these limitations may be approved by the Bella Vista Water District General Manager or his/her designee for activities that require interruption of utility services to allow work during low demand periods, or to alleviate traffic congestion and safety hazards.

MM 4.13.2 Construction equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

MM 4.13.3 Stationary construction equipment (generators, compressors, etc.) shall be located at the furthest practical distance from nearby noise-sensitive land uses.

MM 4.13.4 Building mechanical equipment and other noise-generating stationary sources shall be designed to ensure that operational noise levels at nearby sensitive receptors do not exceed applicable Shasta County noise standards.

Noise attenuation shall be implemented if determined necessary by the project engineer. Noise attenuation may include, but not be limited to, installing equipment in an enclosure that provides adequate noise attenuation, selecting low noise-generating equipment, and use of sound-rated doors, windows, and vents.

DOCUMENTATION

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U.S. Department of Transportation Federal Transit Administration. 2018. Transit Noise and Vibration Impact Assessment Manual. 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. Accessed April 2023.

4.14 POPULATION AND HOUSING

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

REGULATORY CONTEXT

There are no federal, State, or local regulations pertaining to population or housing that apply to the proposed project.

DISCUSSION OF IMPACTS

Question A

A project would induce unplanned population growth if it conflicted with a local land use plan (e.g., a General Plan) and induced growth in areas that aren't addressed in a General Plan or other land use plan. As stated in Section 3.1 (Project Background, Need, and Objectives), the purpose of the proposed project is to provide additional water storage to enable the District to avoid running its WTP to meet existing peak daily flows during November through April, to provide emergency water during power outages, equipment malfunction, and maintenance operations, and to improve system efficiency by allowing all of the wells to be operated remotely. Any future development in the area would be in accordance with the Shasta County General Plan. Therefore, the project would not induce unplanned population growth in the area. There would be ***no impact***.

Question B

No structures would be demolished to accommodate the proposed improvements, and no people would be displaced; therefore, there would be ***no impact.***

CUMULATIVE IMPACTS

As documented above, the proposed project would not induce unplanned population growth in the area. Therefore, the proposed project would not contribute to cumulative impacts associated with population and housing.

MITIGATION

None necessary.

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan. https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/updated-for-online-community-organization-and-development-pattern-2018-he-text-amendments.pdf. Accessed October 2022.

4.15 PUBLIC SERVICES

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

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Fire protection?	☐	☐	☐	☒
b. Police protection?	☐	☐	☐	☒
c. Schools?	☐	☐	☐	☒
d. Parks?	☐	☐	☐	☒
e. Other public facilities?	☐	☐	☐	☒

REGULATORY CONTEXT

There are no federal, State, or local regulations pertaining to public services that apply to the proposed project.

DISCUSSION OF IMPACTS

Questions A through E

The proposed project does not include the construction of houses or businesses that would increase the number of residents in the area. In addition, as stated in Section 4.14 under Question A, the proposed project would not induce unplanned population growth in the area. Therefore, the proposed project would not result in the need for new or physically altered governmental facilities; there would be ***no impact.***

CUMULATIVE IMPACTS

As described above, the proposed project would not increase the demand for long-term public services; therefore, no cumulatively considerable impacts would occur.

MITIGATION

None necessary.

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan. https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/updated-for-online-community-organization-and-development-pattern-2018-he-text-amendments.pdf. Accessed October 2022.

4.16 RECREATION

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

REGULATORY CONTEXT

There are no federal, State, or local regulations pertaining to recreation that apply to the proposed project.

DISCUSSION OF IMPACTS

Questions A and B

The proposed project does not include the construction of houses or businesses that would increase the number of residents in the area. In addition, as discussed in Section 4.14 under Question A, the proposed project would not induce unplanned population growth in the area, either directly or indirectly. Therefore, the proposed project would not result in an increased use of existing recreational facilities or require the construction or expansion of recreational facilities. There would be ***no impact***.

CUMULATIVE IMPACTS

As stated above, the proposed project would not impact recreational facilities or require the construction or expansion of recreational facilities; therefore, no cumulatively considerable impacts would occur.

MITIGATION

None necessary.

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan. https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/updated-for-online-community-organization-and-development-pattern-2018-he-text-amendments.pdf. Accessed October 2022.

4.17 TRANSPORTATION

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒
b. Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b) (criteria for analyzing transportation impacts – vehicle miles traveled)?	☐	☐	☐	☒
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?	☐	☐	☒	☐

REGULATORY CONTEXT

There are no federal or local regulations pertaining to transportation/traffic that apply to the proposed project.

STATE

CEQA Guidelines

SB 743 of 2013 (CEQA Guidelines §15064.3 *et seq.*) was enacted as a means to balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHGs. Pursuant to SB 743, traffic congestion is no longer considered a significant impact on the environment under CEQA. The new metric bases the traffic impact analysis on vehicle miles traveled (VMT). VMT refers to the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's VMT, including whether to express the change in absolute terms, per capita, per household, or in any other measure.

DISCUSSION OF IMPACTS

Questions A, C, and D

The project does not include any components that would conflict with a program, plan, ordinance, or policy addressing the transportation system; however, construction activities could temporarily impede use of roadways.

The project does not involve a use or activity that could increase the potential for traffic hazards or result in inadequate emergency access in the long term. Work within Hidden Acres Road could increase traffic hazards and could result in access issues to properties adjacent to the roadway. However, as stated in Section 4.9 (Hazards and Hazardous Materials) under Question F, construction-related traffic would be minor due to the overall scale of the construction activities. Further, construction-related traffic would be spread over the duration of the construction schedule and would be minimal on a daily basis.

Because no permanent impacts to the circulation system would occur, and safety measures would be employed to safeguard travel by the general public and emergency response vehicles during construction, impacts would be ***less than significant.***

Question B

The proposed project does not include the construction of housing or commercial/industrial development that would cause a permanent increase in traffic or VMT in the area. Rather, the project would result in a reduction in VMT. As stated in Section 4.8 (Greenhouse Gas Emissions), the installation of SCADA systems at three of the District's wells will allow the wells to be monitored remotely, resulting in a reduction in VMT by the District's water treatment operators. It is anticipated that two trips per week will be eliminated, which will reduce the number of miles driven by approximately 50 miles per week or 1,300 miles per year.

There would be an increase in VMT due to construction workers traveling to and from the project site; however, this is a temporary impact and would cease at completion of the project. Therefore, impacts related to VMT would be ***less than significant.***

CUMULATIVE IMPACTS

As documented above, the proposed project would result in a reduction in VMT and would not conflict with programs, plans, ordinances, or policies addressing the circulation system. Further, the project would not permanently increase hazards due to design features or incompatible uses.

There would be a temporary increase in traffic associated with construction workers and equipment; however, no concurrent construction activities in the project area are anticipated, and construction traffic is a temporary impact that would cease at completion of the project. Therefore, the project's transportation-related impacts would not be cumulatively considerable.

MITIGATION

None necessary.

DOCUMENTATION

Shasta County. 2004. Shasta County General Plan. https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/updated-for-online-community-organization-and-development-pattern-2018-he-text-amendments.pdf. Accessed October 2022.

4.18 TRIBAL CULTURAL RESOURCES

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code (PRC) 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:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. A resource listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in PRC §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 PRC §5024.1? In applying the criteria set forth in subdivision (c) of PRC §5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

REGULATORY CONTEXT

There are no federal regulations pertaining to tribal cultural resources that apply to the proposed project.

STATE

CEQA

AB 52 of 2014 (PRC §21084.2) establishes that *"a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment."* In order to determine whether a project may have such an effect, a lead agency is required to consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project if:

1. The tribe requested to the lead agency, in writing, to be informed through formal notification of proposed projects in the geographical area; and
2. The tribe responds, in writing, within 30 days of receipt of the formal notification and requests the consultation.

The consultation must take place prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report. Pursuant to PRC §21084.3, lead agencies must, when feasible, avoid damaging effects to a tribal cultural resource and must consider measures to mitigate any identified impact.

PRC §21074 defines "tribal cultural resources" as either of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR); or are included in a local register of historical resources as defined in PRC §5020.1(k).

   A historical resource described in §21084.1, a unique archaeological resource as defined in §21083.2(g), or a "nonunique archaeological resource" as defined in §21083.2(h) may also be a tribal cultural resource if it meets this criterion.
2. A resource determined by the lead agency, taking into consideration the significance of the resource to a California Native American tribe, to be significant pursuant to criteria set forth in PRC §5024.1(c).

LOCAL

Shasta County

The County's General Plan contains the following Objective and Policy that pertain to this project:

Chapter 6.10, Heritage Resources		
Objective	HER-1	Protection of significant prehistoric and historic cultural resources.
Policy	HER-a	Development projects in areas of known heritage value shall be designed to minimize degradation of these resources. Where conflicts are unavoidable, mitigation measures which reduce such impacts shall be implemented. Possible mitigation measures may include clustering, buffer or nondisturbance zones, and building siting requirements.

DISCUSSION OF IMPACTS

Questions A and B

See discussion in Section 1.7 (Tribal Cultural Resources Consultation) and Section 4.5 under Questions A and B.

On January 11, 2023, ENPLAN contacted Native American tribes that were identified by the Native American Heritage Commission (NAHC) with a request to provide comments on the proposed project. Follow-up correspondence was conducted on February 9 and 15, 2023. A response was received from Wiyaka Bennett with the Quartz Valley Indian Reservation on February 2, 2023, stating that the tribe has no knowledge of any cultural sites within or adjacent to the project area, but the project site is in the tribe's ancestral territory, and they are interested in any archaeological findings.

Caleen Sisk with the Winnemem Wintu Tribe replied by email on February 16, 2023, stating that there is a potential for tribal cultural resources to be present within the Bella Vista Water District boundaries. Maps and details on the proposed project were provided to Ms. Sisk; no further response was received. No other comments were received from any of the other tribes that were contacted.

MM 4.5.1 and 4.5.2 address the inadvertent discovery of cultural resources and human remains. As required by **MM 4.5.2**, in the event that human remains are encountered during construction activities, all project-related ground disturbance within 100 feet of the find shall be halted until the County coroner has been notified. If the coroner determines that the remains are Native American, the coroner will notify the NAHC to identify the most likely descendants of the deceased Native Americans. Project-related ground disturbance in the vicinity of the find shall not resume until the process detailed in §15064.5 (e) of the CEQA Guidelines has been completed. Implementation of **MM 4.5.1 and 4.5.2** ensures that impacts are ***less than significant***.

CUMULATIVE IMPACTS

Cumulative projects in the vicinity of the project area have the potential to impact tribal cultural resources. Tribal cultural resources are afforded special legal protections designed to reduce the cumulative effects of development. Potential cumulative projects and the proposed project would be subject to the protection of tribal cultural resources afforded by PRC §21084.3. Given the non-renewable nature of tribal cultural resources, any impact to tribal cultural sites, features, places, landscapes, or objects could be considered cumulatively considerable. As discussed above, no cultural resources of significance to a California Native American tribe were identified within the project area. In addition, **Mitigation Measures MM 4.5.1 and 4.5.2** address the inadvertent discovery of cultural resources and human remains; therefore, the proposed project would have less-than-significant cumulative impacts to tribal cultural resources.

MITIGATION

Implementation of **Mitigation Measures MM 4.5.1 and 4.5.2.**

DOCUMENTATION

ENPLAN. 2023. Cultural Resources Inventory: Bella Vista Water District Three-Million-Gallon Regulating Station Tank. Confidential document on file at NEIC/CHRIS.

4.19 UTILITIES AND SERVICE SYSTEMS

Would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction 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?	☐	☐	☒	☐

REGULATORY CONTEXT

There are no federal or local regulations pertaining to utilities and service systems that apply to the proposed project.

STATE

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act (CIWMA) of 1989 is designed to increase landfill life and conserve other resources through increased source reduction and recycling. Goals of the CIWMA include diverting approximately 50 percent of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products. The CIWMA requires cities and counties to prepare Solid Waste Management Plans and Source Reduction and Recycling Elements to implement CIWMA goals.

DISCUSSION OF IMPACTS

Question A

As discussed in Section 4.14 under Question A, the proposed project would not induce population growth in the area in a manner that would require expansion of utility facilities. Other than the improvements analyzed in this Initial Study (i.e., installation of a power pole, relocation of a PG&E powerline, and completion of drainage improvements on the Water Tank Site), the proposed project would not result in the need for any other new or expanded utility infrastructure. Impacts would be ***less than significant.***

Question B

Relatively small amounts of water would be used during project construction, but this is a temporary impact. The project would have a beneficial effect related to water supplies in that the new water tank would enable the District to maximize the water production of its existing wells and reduce the amount of water that the District needs to secure through short-term water transfers. The additional storage would also enable the District to avoid running its WTP to meet peak daily flows during November through April; this would reduce the loss of surface water associated with water discharged to the backwash ponds when the plant is brought back online (more than five MG [15 AF] must be produced by the WTP before the water discharged to the ponds will be recovered). Therefore, there would be ***no impact***.

Question C

The project would not result in a demand for wastewater collection or treatment services. Therefore, there would be ***no impact*** related to capacity in a wastewater treatment plant.

Questions D and E

The proposed project would not result in a long-term demand for additional solid waste services. Solid waste would be generated during construction, mainly from removal of pavement in public road ROWs to accommodate the pipeline improvements.

Construction debris would be disposed of at a solid waste facility that is licensed to accept construction and demolition waste, such as the Anderson Landfill in Anderson, California. According to CalRecycle, the design capacity of the Anderson Landfill is 16,353,000 cubic yards. As of July 31, 2017, the remaining capacity was 11,014,860 cubic yards, and the landfill's estimated closure year was 2093. The construction contractor would be responsible for disposing of all construction waste. The District would ensure through contractual obligations that the contractor complies with all federal, State, and local statutes related to solid waste disposal. Therefore, impacts would be ***less than significant.***

CUMULATIVE IMPACTS

Utility and service systems in the area would not experience a permanent increase in demand for services over existing conditions. Although solid waste would be generated during construction, no permanent increase in solid waste generation would occur. Therefore, the proposed project would have less-than-significant cumulative impacts to utility and service systems.

MITIGATION

None necessary.

DOCUMENTATION

CalRecycle. 2018. Five-Year Permit Review Report, Anderson Landfill, Inc. (SWIS 45-AA-0020). https://secure.calrecycle.ca.gov/SWISDocument/Document/Details/342197. Accessed December 2022.

4.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire, or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

REGULATORY CONTEXT

FEDERAL

There are no federal regulations pertaining to wildfire that apply to the proposed project.

STATE

California Department of Forestry and Fire Protection (CAL FIRE)

The Bates Bill (AB 337), enacted in 1992, required CAL FIRE to work with local governments to identify high fire hazard severity zones throughout each county in the State. CAL FIRE adopted Fire Hazard Severity Zone (FHSZ) Maps for State Responsibility Areas (SRA) in November 2007. Pursuant to California Government Code §51175-51189, CAL FIRE also recommended FHSZs for Local Responsibility Areas (LRA). Over the years, CAL FIRE has updated the maps and provided new recommendations to local governments based on fire hazard modeling.

The fire hazard model considers wildland fuels (natural vegetation that burns during the wildfire); topography (fires burn faster as they burn up-slope); weather (fire burns faster and with more intensity when air temperature is high, relative humidity is low, and winds are strong); and ember production and movement (how far embers move and how receptive the landing site is to new fires). The model recognizes that some areas of California have more frequent and severe wildfires than other areas.

California Fire Code

California Fire Code, Part 9, Chapter 49 (Wildland-Urban Interface Fire Areas), and California Building Code Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) include standards for new construction in Wildland-Urban Interface Fire Areas (fire hazard severity zones). The purpose of the standards is to prevent a building from being ignited by flying embers that can travel as much as a mile away from a wildfire and to contribute to a systematic reduction in fire-related losses through the use of performance and prescriptive requirements.

LOCAL

Shasta County

The Shasta County General Plan includes the following Objective and Policy that apply to the proposed project:

Chapter 5.6, Hazardous Materials; Chapter 5.4, Fire Safety and Sheriff Protection		
Objective:	FS-1	Protect development from wildland and non-wildland fires by requiring new development projects to incorporate effective site and building design measures commensurate with level of potential risk presented by such a hazard and by discouraging and/or preventing development from locating in high-risk fire hazard areas.
Policy	FS-a	All new land use projects shall conform to the County Fire Safe Standards.

DISCUSSION OF IMPACTS

According to FHSZ maps prepared by CAL FIRE, The Water Tank Site is located within a State Responsibility Area (SRA) High Fire Hazard Severity Zone. Well 3 and Well 6 are located within a SRA High FHSZ and Very High FHSZ, respectively. Well 4 is located within the City of Redding Local Responsibility Area (LRA).

Question A

See discussion in Section 4.9 under Question F. The proposed project does not involve a use or activity that could interfere with long-term emergency response or emergency evacuation plans for the area.

Work within Hidden Acres Road could increase traffic hazards and could result in access issues to properties adjacent to the roadway. However, as stated in Section 4.9 (Hazards and Hazardous Materials) under Question F, construction-related traffic would be minor due to the overall scale of the construction activities. Further, construction-related traffic would be spread over the duration of the construction schedule and would be minimal on a daily basis. Therefore, impacts would be ***less than significant.***

Questions B and C

In the long-term, the proposed improvements would improve the ability to provide fire suppression in the area. The proposed project would not involve construction of public roads or otherwise intrude into natural spaces in a manner that would increase wildfire hazards in the long term, and would not require construction of fuel breaks, installation of emergency water sources, or other fire prevention/suppression infrastructure. The project includes relocation of an existing overhead powerline on the Water Tank Site; however, this would not exacerbate the risk of wildfires in the area.

There are no features in the study area, such as slope, prevailing winds, or other factors that would exacerbate wildfire risks in a manner that would expose people living and working in the area to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire. As stated in Section 4.9 (Hazards and Hazardous Materials), contractors would be required to implement safeguards during construction to maintain required levels of fire protection, limit fire spread, establish the appropriate operation of equipment, and promote prompt response to fire emergencies. Therefore, impacts would be ***less than significant.***

Question D

The severity of post-fire risks is based on several factors, including the intensity of the fire, the slope and stability of the burned area, physical properties of the soils, and the intensity of post-fire precipitation. Improvements at the well sites include the installation of antennas on existing

structures. Improvements at the Water Tank Site would be installed in relatively level areas with little potential for impacts associated with downslope or downstream flooding or landslides that could result from runoff, post-fire slope instability, or drainage changes. Therefore, there would be ***no impact*** associated with post-fire impacts.

CUMULATIVE IMPACTS

The proposed project and cumulative projects must implement temporary traffic control measures (i.e., signs, cones, flaggers, etc.) to ensure that emergency response vehicles are not hindered by construction activities. Because all projects must provide adequate access during construction, there would be no cumulative impact even if more than one project were under construction at the same time.

In the long term, the proposed project would not contribute individually or cumulatively to increased risks of wildfire, effects of fire prevention/suppression infrastructure, or post-fire hazards. Although cumulative wildfire risks could occur during construction, compliance with existing regulations adequately minimizes such risks. Therefore, the project's contribution to cumulative impacts would be less than significant.

MITIGATION

None necessary.

DOCUMENTATION

California Department of Forestry and Fire Protection (CAL FIRE). 2022. Fire Hazard Severity Zone Map Viewer. https://egis.fire.ca.gov/FHSZ/. Accessed May 2023.

Shasta County. 2004. Shasta County General Plan, Chapter 5.4 (Fire Safety and Sheriff Protection). https://www.shastacounty.gov/sites/default/files/fileattachments/planning/page/3048/54firesafety.pdf. Accessed October 2022.

4.21 MANDATORY FINDINGS OF SIGNIFICANCE

Issues and Supporting Evidence	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less Than Significant Impact	No Impact
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 rare or endangered plants or animals, 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?	☐	☒	☐	☐

DISCUSSION OF IMPACTS

Question A

As discussed in the applicable environmental resource sections in this Initial Study, the proposed project would result in temporarily increased air emissions, possible impacts on special-status wildlife species, disturbance of nesting birds (if present), loss of trees, a potential for the introduction and spread of noxious weeds during construction, possible impacts on wetlands and/or other waters of the U.S./State, impacts on cultural resources and tribal cultural resources (if present), impacts on paleontological resources (if present), and temporarily increased noise and vibration levels. However, mitigation measures are included to ensure that impacts are ***less than significant***.

Question B

The potential cumulative impacts of the proposed project have been analyzed within the discussion of each environmental resource area above. Implementation of the mitigation measures identified in Section 1.10 ensures that the project's cumulative impacts are ***less than significant.***

Question C

As discussed in the applicable environmental resource sections in this Initial Study, the proposed project could result in adverse effects on human beings due to temporarily increased air emissions and temporarily increased noise and vibration levels. However, as identified in Section 4.3 (Air Quality) and Section 4.13 (Noise), mitigation measures are included to ensure that impacts are ***less than significant.***

SECTION 5.0 LIST OF PREPARERS

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SECTION 6.0 ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
AF	Acre-foot
AQAP	Air Quality Attainment Plan
APE	Area of Potential Effects
APN	Assessor's Parcel Number
BAMM	Best Available Mitigation Measure
BMP	Best Management Practice
BVWD	Bella Vista Water District
BUG	Backlight, Uplight, and Glare
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standard
CalARP	California Accidental Release Prevention Program
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Code
CalOES	California Office of Emergency Services
Cal/OSHA	California Occupational Safety and Health Administration
Caltrans	California Department of Transportation
CAP	Criteria Air Pollutant
CARB	California Air Resources Board
CASGEM	California Statewide Groundwater Elevation Monitoring
CBSC	California Building Standards Code
CCR	California Code of Regulations
CCV	California Central Valley
CDFW	California Department of Fish and Wildlife
CEC	California Energy Code
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGC	California Government Code
CGS	California Geological Survey
CH_4	Methane
CIWMA	California Integrated Waste Management Act
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide

CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
County	Shasta County
CRHR	California Register of Historical Resources
CRI	Cultural Resources Inventory and Evaluation Report
CVRWQCB	Central Valley Regional Water Quality Control Board
CVSR	Central Valley Spring Run
CWA	Clean Water Act
CY	Cubic Yards
dB	Decibels
dBA	Decibels with a level A-weighted
DBH	Diameter at Breast Height
DOC	Department of Conservation
DPS	Distinct Population Segment
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EO	Executive Order
ESU	Evolutionary Significant Unit
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Act
FESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FMMP	California Farmland Mapping and Monitoring Program
°F	Fahrenheit
GHG	Greenhouse Gas
GPD	Gallon Per Day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	Global Warming Potential
H_2S	Hydrogen Sulfide
HCP	Habitat Conservation Plan
HFC	Hydrofluorocarbon
IBC	International Building Code
IHRMP	University of California Integrated Hardwood Range Management Program

Ldn	Day-Night Average Sound Level
LRA	Local Responsibility Area
MACT	Maximum Achievable Control Technology
MBTA	Migratory Bird Treaty Act
MCL	Maximum Contaminant Level
MG	Million-Gallon
MGD	Million Gallons Per Day
mg/m^3	Milligrams per Cubic Meter
MMRP	Mitigation Monitoring and Reporting Program
MND	Mitigated Negative Declaration
MPO	Metropolitan Planning Organization
MRZ	Mineral Resource Zone
MSFCMA	Magnus-Stevens Fishery Conservation and Management Act
MS4	Municipal Separate Storm Sewer System
MSR	Municipal Service Review
MT	Metric Tons
MUTCD	California Manual on Uniform Traffic Control Devices
MWP	Master Water Plan
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEIC/CHRIS	Northeast Information Center of the California Historical Resources Information System
NEHR	National Earthquake Hazards Reduction (Act)
NF_3	Nitrogen Trifluoride
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
N_2	Nitrogen
N_2O	Nitrous Oxide
NO	Nitric Oxide
NOI	Notice of Intent
NO_2	Nitrogen Dioxide
NO_X	Oxides of Nitrogen
NPDES	National Pollutant Discharge Elimination System
NPPA	California Native Plant Protection Act
NRHP	National Register of Historic Places
NSVAB	Northern Sacramento Valley Air Basin
NSVPA	Northern Sacramento Valley Planning Area
NWP	Nationwide Permit

O_2	Oxygen
O_3	Ozone
OHWM	Ordinary High Water Mark
OS	Open Space
OSHA	Occupational Safety and Health Administration
Pb	Lead
PF	Public Facility
PF-I	Public Facilities or Institutional
PFC	Perfluorocarbon
$PM_{2.5}$	Particulate Matter, 2.5 microns in size
PM_{10}	Particulate Matter, 10 microns in size
PPB	Parts per Billion
PPM	Parts per Million
PPV	Peak Particle Velocity
PRC	Public Resources Code
Project	Bella Vista Water District Three-Million-Gallon Regulating Station Tank
PV	Photovoltaic
PVC	Polyvinyl Chloride
RCAP	Regional Climate Action Plan
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
ROG	Reactive Organic Gases
ROW	Right-of-Way
RPS	Renewables Portfolio Standards Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SCAQMD	Shasta County Air Quality Management District
SCC	Shasta County Code
SCHMRT	Shasta-Cascade Hazardous Materials Response Team
SCS	Sustainable Communities Strategy
SDWA	Safe Drinking Water Act
SF_6	Sulfur Hexafluoride
SGMA	Sustainable Groundwater Management Act
SHMA	California Seismic Hazards Mapping Act
SHPO	State Historic Preservation Officer
SMM	Standard Mitigation Measure
SIP	State Implementation Plan

SMARA	Surface Mining and Reclamation Act
SMARTS	SWRCB Stormwater Multiple Application and Report Tracking System
SOI	Sphere of Influence
SO_2	Sulfur Dioxide
SO_4	Sulfate
SO_X	Sulfur Oxides
SRA	State Responsibility Area
SRWR	Sacramento River Winter-Run
SSC	Species of Special Concern
SUSWMP	Standard Urban Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TP	Timberland Production
USACE	United States Army Corps of Engineers
USBR	United States Bureau of Reclamation
USC	United States Code
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle Miles Traveled
WDR	Waste Discharge Requirement
WQC	Water Quality Certification
$\mu g/m^3$	Micrograms per Cubic Meter