Public Draft

FASSLER TANK REPLACEMENT PROJECT

Initial Study/Proposed Mitigated Negative Declaration

Prepared for
North Coast County Water District

July 2026

ESA

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CHAPTER 1
Introduction

1.1 Purpose

The North Coast County Water District's (District) as the Lead Agency, has prepared this Initial Study / Mitigated Negative Declaration (IS/MND) for the Fassler Tank Replacement project (Project) in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq. and Title 14 of the California Code of Regulations Section 15000 et seq. (CEQA Guidelines). The purpose of this IS/MND is to: (1) determine whether Project implementation would result in potentially significant or significant effects to the environment; and (2) identify mitigation measures, as necessary, to eliminate the Project's potentially significant or significant project effects or reduce them to a less-than-significant level.

1.2 Document Organization

Chapter 1 – Introduction. This chapter provides an introduction to the Project, organization of this document, purpose of the IS, and summary of findings.

Chapter 2 – Project Description. This chapter describes the Project, including Project location, Project objectives, activities to be conducted under the Project, and potential permits and/or approvals that may be required prior to implementation of the Project.

Chapter 3 – Initial Study Environmental Checklist. This chapter presents an analysis of implementation of the Project for the resource topics included in the CEQA Environmental Checklist (Appendix G of the CEQA Guidelines). For each resource topic question, the following is provided: (1) environmental setting; (2) discussion of the potential effects of implementing the Project; (3) finding of significance; and (4) any mitigation measures to be recommended for incorporation into the Project to reduce identified significant impacts to a less-than-significant level. This chapter lists the references used in preparation of this IS for each resource topic.

Chapter 4 - Report Preparers. This chapter lists persons and affiliations of the persons who prepared this IS/MND.

1.3 Consideration of the Initial Study and Project

Following completion of the required 30-day public comment period, and before approving the Project, the District would consider the MND together with any comments provided during the public comment period and will adopt the MND if, based on the whole of the record: (1) there is no substantial evidence that the Project will have a significant effect on the environment; and (2) that it represents the District's

independent judgment and analysis. The District would also prepare and adopt a Mitigation Monitoring and Reporting Program as part of the approval process as required under Public Resources Code Section 21081.6(c) for mitigation measures identified in the MND.

1.4 Summary of Findings

Based on the analysis included in Chapter 3, implementation of the Project would result in no impact on the following resource topics:

- Agriculture and Forestry Resources
- Land Use and Planning
- Mineral Resources
- Population and Housing

Less-than-significant impacts on the following resource topics:

- Aesthetics
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Mineral Resources
- Noise
- Public Services
- Recreation
- Transportation
- Wildfire

Less-than-significant impacts following implementation of mitigation measures on the following resource topics:

- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Tribal Cultural Resources
- Utilities and Service Systems

CHAPTER 2
Project Description

2.1 Introduction and Background

The existing Fassler Tank is a 0.5 million gallon (MG) welded steel tank that is in the southern portion of the District service area in Pressure Zone 24. The District is an independent special district that provides water to the residents of the City of Pacifica that has been in operation since 1944.

The District has determined that the existing tank has reached the end of its useful life and needs to be upsized and replaced with a new 1.2 MG tank in the same parcel as the existing tank. A system-wide storage evaluation was performed to assess the District's storage capacity (EKI, 2021), which recommended replacing the existing tank with a new 1.2 MG tank to increase emergency and fire storage in Pressure Zone 24 and other zones in the southern portion of the District. An analysis of tank alternatives was performed in the Fassler Tank Siting Study (Brown and Caldwell, 2023), which recommended a 1.2 MG prestressed concrete tank.

2.2 Project Objectives

The purpose of this Project is to replace the storage capacity of the existing Fassler Tank with a new 1.2 MG concrete storage reservoir, or tank. The Project objectives include:

- Increase reliability of water supply in the District's service area;
- Cease use of the existing 0.5 MG Fassler Tank for storage; and,
- Increase emergency and fire water storage capacity in the District's southern service area.

2.3 Project Location and Setting

The less than 2-acre Project site is located at 1186 Fassler Avenue, Pacifica and includes APN 022-330-070 and portions of APNs 022-330-160 and 022-330-010, owned by the City of Pacifica (**Figure 2-1**). The existing Fassler Tank sits north of a residential neighborhood made up of primarily single-family housing at the easternmost point of Fassler Avenue with the closest residence located 600 feet to the southeast. The Project is approximately 600 feet from the beginning of the Ahni Trail which starts at the Eastern end of Fassler Avenue and runs into the Golden Gate National Recreation Area. The Project area is partially developed and surrounded by shrubbery and patches of trees.

It slopes downward from north to south, from approximately 700 feet above mean sea level (AMSL) at the tank location to 600 feet AMSL at the beginning of the trailhead 500 feet away. The Project area is accessed by a driveway with a vehicle gate that runs parallel to the trail.

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Figure 2-1
Regional Location

The Project is surrounded by APNs 022-330-160 and 022-330-010, zoned by the City of Pacifica as "Park." The Project is approximately 0.22 mile southwest of the Golden Gate National Recreation Area (GGNRA), an 82,116-acre National Recreation Area which is a collection of landscapes throughout the Bay Area managed by the National Park Service. The Project area is located next to the trailhead for the Ahni Trail, a 3.3 mile out and back trail utilized by hikers and mountain bikers that follows Sweeney Ridge and continues to the San Francisco Bay Discovery Site (**Figure 2-2**).

There are easements in the Project vicinity, with the existing tank sitting within the District's lands surrounding the tank parcel. There is a joint utility easement along the site access road which is shared between AT&T, PGE, and the District. There is also a 15 foot wide waterline easement along the northwest side of the tank site which contains an inactive 12-inch transmission main that previously delivered supply to the District from the City of San Bruno.

2.4 Project Components

The Project would be constructed and operated within the approximate limits shown in **Figure 2-3**, **Project Site**. The main Project components include:

- a 1.2 MG concrete water storage tank, including concrete floor and foundation, walls, and roof.
- site drainage facilities including stormwater treatment and stormwater best management practices (BMPs)
- a temporary trail safety barrier for along the Ahni Trail and partial trail expansion
- tank appurtenances including a Tideflex Mixing System
- groundwater level monitoring wells
- perimeter fencing including chain-link removal and replacement
- riprap, hydroseeding, and tree removal
- and improving the existing gravel driveway into a paved driveway

2.4.1 Proposed 1.2 MG Tank

The main component of the Project would consist of a 1.2 MG prestressed concrete water storage tank that has a 34.83 feet interior sidewall height (roof to floor at wall) and an 83.5 foot inside tank diameter.

The exterior of the tank would be coated with a modified waterborne acrylate in a dark green color that is utilized on porous surfaces. The tank's roof and floor would both be designed with the standard 1.5 percent slope from the tank center to the edges. The tank roof type would be a column supported flat slab that is 3.83 feet above the high-water level.

Downspouts would be installed on the edge of the tank roof. Each would have a galvanized steel drain box that collects stormwater on the sloped tank roof and a vertical galvanized steel pipe that feeds into rain leaders running to a stormwater biotreatment basin. The vertical steel pipes are supported on the tank sidewall.

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Figure 2-2
Project Location

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Figure 2-3
Project Site

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The tank floor would be constructed as a 6-inch thick structural membrane slab with one reinforcing mat with the top foot of soil to be replaced with an aggregate base for the tank foundation.

A common inlet/outlet pipe design is proposed that would be fully encased in concrete below the tank. The overflow pipe would be 10-inches with a 3 feet per second pipe velocity at the maximum overflow of 750 gallons per minute (GPM). During an overflow event, water would discharge into a catch basin west of the proposed tank and convey the water to the existing drain/overflow discharge outfall. The drainage flows downhill in a northwest direction through an unnamed drainage channel. A tank wall drain would surround the tank and convey water that collects in the ground near the tank walls away to the drainage outfall. The wall drain is perforated and encased in granular fill that is held together by filter fabric and positioned above the tank foundation.

New piping would be installed from the tank inlet/outlet, down the site access road, and to the existing tee located roughly 300 feet southwest of the tank on the right side of Fassler Ave. This tee would be used as the tie in point for the new tank and piping to the existing system under the assumption there is a functioning isolation that can be tied into and be used to bypass the tank during construction. The tank would have a new 10-inch ductile iron pipe (DIP) connecting to the distribution system which matches the size of the existing pipe.

2.4.2 Remote Telemetry Unit Equipment Shed

The existing Remote Telemetry Unit (RTU) equipment shed would be reused.

2.4.3 Trail Modifications

The Ahni Trail runs parallel to the driveway leading to the Project area and would be maintained and separated from the driveway with concrete jersey barriers. A portion of the trail would be regraded to provide a separate 3-foot lane for trail users and a temporary construction partition, separate from the access driveway that would provide construction access. The stormwater runoff from the modified trail would be directed into the neighboring vegetation per C.3[1] stormwater requirements. Only native materials would be used for the trail modification.

2.4.4 Landscaping / Irrigation / Stormwater Conveyance

Construction of the tank would require the removal of several trees with all other remaining trees being protected during the process. The existing trees would be used to provide mature landscaping to screen the new tank. Once the Project reaches final design, the quantity of replacement trees that need to be planted to provide additional screening would be determined.

Stormwater from the impervious areas around the tank would be treated in two biotreatment basins. There would be one treatment area by the tank site while stormwater from the driveway would be treated in a

[1] The San Francisco Bay RWQCB has issued a Municipal Regional Stormwater NPDES Permit (MRP) Order No. R2-2022-0018 to regulate stormwater discharges from permittees in Alameda, Contra Costa, San Mateo, and Santa Clara Counties. Provision C.3 of the MRP requires regulated projects to include Low Impact Development (LID) design measures. These include site design features to reduce the amount of runoff requiring treatment and maintain or restore the site's natural hydrologic functions, source control measures to prevent stormwater from pollution, and stormwater treatment features to pre-treat polluted stormwater runoff prior to discharge into the municipal storm drain system.

biotreatment basin adjacent to the existing parking lot near the Ahni trailhead and Fassler Avenue. Stormwater from pervious areas including stormwater running onto the Project site would be diverted and flow down the hill. The District intends to hand water the biotreatment basins, as the available pressure from the distribution system would not be enough to irrigate the plants after the pressure loss through a backflow preventer. Utilizing native plants in the bioretention areas should result in the plants needing minimal to no irrigation water after becoming established. The disturbed areas in the Project vicinity would be hydroseeded.

2.4.5 Groundwater Monitoring Wells

As the tank is partially buried, groundwater monitoring wells would be required even without the expectation of high groundwater at the site. Two 20-foot-deep ground monitoring wells would be constructed, one up gradient and one down gradient of the tank, per requirements from the state.

2.4.6 Site Fencing

The site fencing would be replaced with an 8-foot-tall chain-link fence with three strand barbed wire. The fencing would be provided with black PVC coating, and a manual double swing gate would be added for site access.

2.4.7 Driveway / Bioretention Basin

The Project includes construction of access driveway improvements. The driveway would be located on APN 022-330-070 and has been designed to provide reliable vehicular access across steep existing terrain. The proposed driveway improvements would establish permanent, all-weather access to the new tank site while incorporating compliant stormwater treatment measures consistent with regional C.3 requirements.

The driveway alignment would not be relocated and would continue to extend uphill from the lower site area to the proposed tank location and incorporates multiple horizontal curves and grade transitions to navigate the hillside topography. The driveway grades range from approximately 13 to 17 percent, with several discrete segments identified within this range. The driveway maintains a 12-foot paved width, with adjacent graded shoulders of 1–2 feet and varying cut/fill side slopes (mostly 2:1, with localized 1:1 and 3:1 slopes) to match the roadway to existing ground conditions.

Stormwater associated with the driveway has been evaluated consistent with the San Mateo Countywide Water Pollution Prevention Program's C.3 Technical Guidance. A dedicated Drainage Management Area (DMA) was defined for the driveway, encompassing 42,985 square feet of surface area, including 6,115 square feet of impervious area and an adjusted 3,687 square feet of effective pervious area. The resulting Effective Impervious Area (EIA) for stormwater treatment purposes is 9,802 square feet. The Project requires a stormwater capture volume of 806 cubic feet based on the site-specific precipitation adjustment factor and the applicable regional unit basin storage volume using the Combination Flow and Volume Method. To satisfy this requirement, the design includes a bioretention basin with a final surface area of approximately 294 square feet, which is sized to provide both treatment and storage. The design anticipates a stored runoff ponding depth of approximately 8.2 inches within the facility. The driveway would incorporate associated drainage infrastructure, including a 24-inch precast drainage inlet and a

12-inch outlet pipe conveying runoff downslope at a 0.50 percent gradient. The bottom elevation of the bioretention basin would be 611.50 feet.

2.5 Project Construction

Project construction is anticipated to take 326 workdays that would begin in April 2030 and be completed by July 2031. The general construction sequence would be as follows:

- Mobilization / submittals / demolition / earthwork – April 2030 through July 2030 (75 workdays)
- Tank construction – August 2030 – March 2031 (161 workdays)
- Disinfection / testing / startup / final earthwork and paving – March 2031 – April 2031 (45 workdays)
- Project substantial completion: May 2031
- Punch List / NOC – May 2031- July 7, 2031. Projected end date: July 30, 2031

This schedule takes the Northern California wet weather season into consideration to avoid construction delays. Permitting is assumed to take two months after the Project reaches 100 percent design.

While the City of Pacifica allows 7:00 AM to 7:00 PM working hours, the District would use 8:00 AM to 5:00 PM working hours for loud, noise-generating construction, to coincide with and adhere to the noise standards set forth in City noise ordinance. No work on weekends (Saturday/Sunday) and holidays (e.g., Thanksgiving, Christmas) is anticipated; however, some weekend work and extended workdays may occur to meet scheduling needs or other requirements. Extended workdays could require lighting during evening activities. Lighting required during nighttime construction periods would be directed toward work areas and consist of lights designed with low light spillover, utilizing shields or other light pollution reduction features to ensure that no fugitive light spills out into natural lands.

2.5.1 Staging/Materials Delivery and Laydown

The site would be accessed from a steep gravel driveway beginning from the Ahni Trail Head parking lot and leading to the tank site. There is a vehicle gate separating the parking lot from the driveway. The existing gravel access driveway at the trail parking lot would be maintained by the contractor during the construction duration. Following completion of the tank and other improvements, the gravel driveway would be improved into a paved driveway.

The temporary staging area would be located directly east of the proposed tank foundation (less than 10 feet) in front of the site access entrance. As discussed below, a portion of the excavated soils that would be used for backfill may be staged near the District's Royce Tank site.

2.5.2 Construction Equipment

A range of large equipment would be used during construction, such as:

- excavators (1)
- dumpers/tenders (2)
- cement/mortar mixers (12)
- Concrete pumping trucks

- graders (1)
- off-highway trucks (1)
- bore/drill rigs (1)
- cranes (1)
- prestressed wire wrapping/shotcrete machine (1)

2.5.3 Excavation and Fill Information

The tank would be backfilled with a combination of excavated native and imported soils and would have varying grades around the circumference. The tank footing would have at least 2 feet of fill on the lower filled side to provide passive soil resistance. Paving would be replaced in kind with minor grading revisions.

The staging area on site mentioned above could be used to store excavated soils; however, additional areas would be needed to store excavated soils during construction activities. Therefore, additional excavated soils would be off hauled and then brought back on site when needed. A nearby property owned by the District would possibly be utilized as a soil staging area. This would allow the Contractor to store 1,500 cubic yards (CY) of soil required for backfilling the site after completion of the tank construction, which would help minimize export and import costs. The tank excavation is anticipated to generate 6,400 CY of soil export. Overall, the Project would require approximately 7,900 CY of soil hauling.

2.5.4 Vehicle Trips and Haul Routes

The Project would require 1,050 truck trips assuming 7.5 CY per truck. Whenever possible, construction traffic trips to and from the Project site would occur during non-commuter peak hours of 8:00 AM to 5:00 PM weekdays. A possible exception would be concrete deliveries during “continuous pour” events during construction, when an entire component would be constructed and a constant pour of concrete would be needed to complete the task (e.g., for the foundation slab, tank walls, and tank roof).

2.6 Project Operations and Maintenance

Upon completion of Project construction, and after the tank is commissioned and operational, the Project would require minimal maintenance. The tank would reduce the need for maintenance as the existing tank currently requires more frequent maintenance due to age. Additionally, concrete tanks require less maintenance compared to steel tanks, such as the existing tank. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, additional truck trips resulting from maintenance of the tanks and appurtenances would be minimal. No waste or discharge would be generated at the Project site, unless resulting from an unanticipated major repair.

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CHAPTER 3
Environmental Checklist

3.1 Project Details

1. **Project Title:** Fassler Tank
2. **Lead Agency Name and Address:** North Coast County Water District
3. **Contact Person and Phone Number:** Adrianne Carr, 650-355-3462
4. **Project Location:** Pacifica, CA
5. **Project Sponsor's Name and Address:** North Coast County Water District, 2400 Francisco Boulevard, Pacifica, CA 94044
6. **General Plan Designation(s):** Parks and Open Space / Prominent Ridgeline
7. **Zoning:** Utilities and Park
8. **Description of Project:**

The District has determined that the existing tank needs to be upsized and replaced as it was built before the full buildout of the area being served and has reached the end of its useful life. Upsizing the existing tank would provide additional emergency and fire water supply. The District would replace the existing tank with a new 1.2 MG tank and associated infrastructure in the same parcel as the existing tank.

9. **Surrounding Land Uses and Setting.**

The existing Fassler Tank sits north of a residential neighborhood made up of primarily single-family housing at the easternmost point of Fassler Avenue. The Project's boundaries are surrounded by land owned by the City of Pacifica designated as "Parks and Open Space." The Project is south of the GGNRA and is located next to the trailhead for the Ahni Trail.

10. **Other public agencies whose approval is required:**

City of Pacifica – Project Approval, State Water Resources Control Board – Design / Operations Permitting

11. **Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?**

No tribes have requested consultation, see Tribal Resources section XVIII.

3.2 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study:

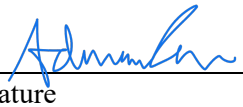
☐ I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

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

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

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

☐ I find that although the 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 Project, nothing further is required.



Signature

7/2/26

Date

3.3 Environmental Checklist

3.3.1 Aesthetics

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
AESTHETICS — Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect daytime or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

The Project site is located on a slope above a residential neighborhood in the City of Pacifica, California and slopes downward from north to south approximately 700 feet AMSL at the tank location to 600 feet AMSL at the Ahni Trail Head 500 feet away. Natural slopes generally slope down to the southwest. Slopes range from approximately 28 to 66 percent (Brown and Caldwell 2023).

The Project site includes portions of the Ahni Trail and Trail Head and is surrounded by open space owned by the City of Pacifica, just south of the GGNRA. Existing improvements include the 500,000-gallon Fassler Tank, a Remote Telemetry Unit (RTU) equipment shed, fencing, an associated access driveway, developed habitat including mature trees which screen the existing tank from the view of nearby neighborhoods (Water Works Engineers 2024) (see **Figure 3-1** and **3-2**), and interior site lighting and exterior tank lighting. Undeveloped portions of the site support scrub vegetation, annual grasslands, and sparsely vegetated areas (see Section IV. Biological Resources).

The Project site is located within the Hillside Preservation District (HPD), on land designated as “Parks and Open Space” and “Prominent Ridgeline” as designated in the City of Pacifica General Plan (City of Pacifica 2022). To protect important views from public areas and the sensitive terrain of hillside areas, the City has special development regulations for the HPD, which requires submission of development plans, grading plans, and other documentation. Hillside development also receives special consideration in the Design Guidelines, which are used to evaluate proposed projects.

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Figure 3-1
View of tank site from end of Fassler Avenue

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Figure 3-2
View of tank site from Estella Drive at Fassler Avenue

The key issues for hillside development are slope stability, grading, and visual impact. The Project site is not located within the City of Pacifica's Coastal Development Zone and there are no nearby "Coastal View Corridors," "Gateways," or "Prominent Landforms" as designated in the City's General Plan (City of Pacifica 2022) nor are there any historic buildings or resources (see Section V, *Cultural Resources* and Section XVIII, *Tribal Cultural Resources*).

The Project site is not located along a State Scenic Highway. State Route (SR) 1, otherwise known as California Highway 1, is designated as a State Scenic Highway by California Department of Transportation (Caltrans) and provides views of the Pacific Ocean and surrounding coastal areas (Caltrans 2018). The segment of SR 1 in the vicinity of the Project site is located approximately one mile west of the Project site at approximately 100 feet AMSL, which would be approximately 500 to 600 feet below the Project site in elevation (City of Pacifica 2022). A highway is officially designated as a State Scenic Highway when a local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from the Caltrans that the highway has been designated as an official State Scenic Highway.

Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern this analysis.

State

Caltrans State Scenic Highway Program

California's Scenic Highway Program was established by the state Legislature in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic quality of lands adjacent to highways. The State Scenic Highway System includes highways that are either eligible for designation as scenic highways or have been designated as such. The status of a state scenic highway shifts from eligible to officially designated when the local jurisdiction adopts a scenic corridor protection program, applies Caltrans for scenic highway approval, and receives the designation. Although local jurisdictions may propose adding routes with outstanding scenic elements to the list of eligible highways, state legislation is required for them to become officially designated.

Local

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to aesthetic resources, listed below (City of Pacifica 2022).

Community Design Element

Guiding Policies

CD-G-5: Hillsides and Prominent Ridgelines. Maintain development standards that ensure that new development does not detract from the visual qualities of Pacifica's hillsides and visually prominent ridgelines.

CD-G-7: Views from Scenic Routes. Ensure that viewsheds from Highway 1 and Sharp Park Road are preserved and enhanced. These views are an essential part of Pacifica's identity.

Implementing Policies

CD-I-11: Minimize Visual Impacts of Hillside Development. Require new development to employ innovative site planning, engineering and design techniques that:

- Seek first to avoid impacts to scenic resources through site planning and design;
- Minimize grading and conform with natural landforms to the greatest extent possible;
- Design structures so that they follow contours and limit their downslope exposure; and
- Use landscaping to screen and integrate buildings with the natural environment.

CD-I-12 Protection of Ridgelines. Protect visually prominent ridgelines from residential and commercial development. Local access roads and trails may be allowed on visually prominent ridgelines provided they follow contours, minimize grading, and are unobtrusive in their design.

CD-I-13 Hillside Preservation District Requirements. Continue to implement the requirements of the Hillside Preservation District (HPD), including submission of siting and grading plans. Update the HPD to ensure that all steep slopes are covered and that sites on other terrain are not included.

CD-I-14 Design Review. Continue to use Design Guidelines to evaluate proposed projects in Planned Development, Hillside Development, and Special districts.

Discussion

Except as provided in Public Resources Code Section 21099, would the Project:

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

Less than Significant. The Project site is located within the HPD on land designated as "Parks and Open Space" and "Prominent Ridgeline" as designated in the City of Pacifica General Plan (City of Pacifica 2022). However, the Project site is not located within the City of Pacifica's Coastal Development Zone and there are no nearby "Coastal View Corridors," "Gateways," or "Prominent Landforms" as designated in the City's General Plan (City of Pacifica 2022).

The City of Pacifica General Plan identifies Ridgeline and Hillside areas as sensitive and includes several design strategies within goal CD-G-5 to ensure that new development does not detract from the visual qualities of Pacifica's hillsides and visually prominent ridgelines. Specifically, Implementation Policies CD-I-11 through 14 outline several measures to ensure that new development does not impact the visual qualities of Pacifica's hillsides and visually prominent ridgelines including: requiring new development to minimize visual impacts to hillside areas, protection of ridgelines, HPD requirements, and design review.

However, the intent of the Project is to increase reliability of water supply and increase emergency and fire water storage capacity in the District's southern service area. The Project would not further develop the Project site and would not consist of new development, rather it would improve existing infrastructure already located on-site to ensure continued operation and meet service needs. Therefore, the Project

would not be considered hillside development and Implementation Policies CD-I-11 through 14 would not apply.

In regards to other potential impacts on scenic vistas, the Project site is located adjacent to the Ahni Trail Head, just south of the GGNRA and is along a "Prominent Ridgeline." The Project site contains several mature trees on the downhill side (i.e. the side facing developed neighborhoods) of the Fassler Tank which currently screens the tank from public view (Water Works Engineers 2024). Therefore, due to topography and existing screening, views of the existing Fassler Tank are generally limited to recreationalists.

Construction of the tank would require the removal of several trees; however, all other remaining trees would be protected during the process and the remaining trees would be utilized to provide mature landscaping to screen the new tank. Once the Project reaches final design, the quantity of planted replacement trees that need to be planted to provide additional screening would be determined. Further, the design of the tank would include a flat roof to limit the overall height and the tank would be coated with a modified waterborne acrylate in a dark green color that is utilized on porous surfaces which would assist in blending the proposed tank visually into the surrounding environment, thereby reducing any visual impacts to recreationalists or people living nearby. As such, any impacts to scenic vistas due to removal of vegetative screening at the Project site would be limited through retention of existing screening and design features incorporated to reduce visual impacts.

Therefore, the Project would not result in long-term substantial adverse effects on a scenic vista, and this impact would be less than significant

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

No Impact. In the City of Pacifica, Caltrans-designated State Scenic and Eligible State Scenic Highways include portions of SR 1 which run from north to south along the coast (Caltrans 2018). As discussed in the Environmental Setting section, SR 1 is located approximately one mile west of the Project site and the segment of SR 1 in the vicinity of the Project site is at approximately 100 feet AMSL, which would be approximately 500 to 600 feet below the Project site in elevation (City of Pacifica 2022). Construction activities associated with the Project would therefore not be visible to motorists traveling along the eligible portion of SR 1 due to the distance and intervening topography. The Project would not impact scenic resources, which include rock outcroppings, trees, or historic buildings within a designated State Scenic Highway corridor, and no impacts would occur.

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

Less than Significant. The Project site is located within the HPD, on land designated as "Parks and Open Space" and "Prominent Ridgeline" as designated in the City of Pacifica General Plan (City of Pacifica 2022).

Implementation Policies CD-I-11 through 14 of the City General Plan outline several measures to ensure that new development does not detract from the visual qualities of Pacifica's hillsides and visually prominent ridgelines including: requiring new development to minimize visual impacts to hillside areas, protection of ridgelines, HPD requirements, and design review. However, as mentioned above the Project would not further develop the Project site and would not consist of new development, rather it would improve existing infrastructure already located on-site to ensure continued operation and meet service needs. Additionally, as discussed in Section 2.4, Project Components, the Project would replace the existing Fassler Tank and make other site improvements on land designated as "Parks and Open Space"; as such, there would be no conflict with existing zoning and the Project would allow for a continued use similar to existing conditions.

In regards to other impacts to visual quality or character, construction of the tank would require the removal of several mature trees which provide site screening from surrounding areas; however, all other remaining trees would be protected during the process. The remaining existing trees would be utilized to continue provide landscaping to screen the new tank. Once the Project reaches final design, the quantity of planted replacement trees that need to be planted to provide additional screening would be determined. This would limit the severity of visual contrast attributable to the removal of existing tress. Additionally, the design of the proposed tank would include a flat roof to limit overall height and the exterior would be coated with a modified waterborne acrylate in a dark green color that is utilized on porous surfaces which would assist in blending the proposed tank visually into the surrounding environment to reduce any potential visual impacts to recreationalists using the Ahni Trail. Therefore, the visual contrast would be weak and not substantially impair the site's visual character and quality. Impacts would be less than significant.

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

Less than Significant. As discussed in the *Environmental Setting* section, the Project site is currently developed and includes the existing Fassler Tank and associated site improvements, among which include the use of exterior lighting. Other forms of light and glare in the Project area include lighting from nearby neighborhoods to the south located adjacent to the Ahni Trail Head, approximately 500 feet from the existing tank. The use of lighting at the Project site and the Project site itself is currently screened from surrounding areas by existing mature trees. The Project, similar to existing conditions, would continue the use of exterior lighting.

As discussed in Section 2.5, *Project Construction*, the daily construction schedule is anticipated to be generally from 8:00 AM to 5:00 PM Monday through Friday. A possible exception would be concrete deliveries during "continuous pour" events during construction when an entire component would be constructed and a constant pour of concrete would be needed to complete the task (e.g., for the foundation slab, walls, and roof). The Project extended workdays could require lighting during evening activities which could be visible to surrounding areas. Lighting required during nighttime construction periods would be directed toward work areas and consist of lights designed with low light spillover, utilizing shields or other light pollution reduction features to ensure that no fugitive light spills out into natural lands. Project site lighting used during operations such as exterior lighting could also be visible to surrounding areas.

Any use of lighting for construction activities would be temporary, and outside of continuous pour events, would generally be limited to daytime hours. Importantly, the Project would not introduce new sources of external light, rather it would continue to use external lighting sources similar to those already used on-site.

Therefore, Project elements would not create a substantial or permanent new source of light when compared with existing conditions and any increase in light or glare created by the Project would be temporary; this impact would be less than significant.

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Water Works Engineers, 2024. North Coast County Water District Fassler Tank. Preliminary Design Report. Draft. Prepared for the North Coast County Water District. September 2024.

3.3.2 Agriculture and Forestry Resources

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
AGRICULTURE AND FORESTRY RESOURCES — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The City of Pacifica General Plan 2040 designates land uses and zoning within the City; there are no agricultural or forestry lands within or adjacent to the Project site. The Project site has a land use designation of Parks and Open Space and is zoned for Utility and Park uses (City of Pacifica 2022). The Project site does not include prime farmland, unique farmland, or farmland of statewide or local importance as designated by the California Department of Conservation (DOC), the Project site is designated as other lands (DOC 2022). The Project site is not enrolled in a Williamson Act Contract nor are there any neighboring and adjacent parcels which are enrolled in a Contract (DOC 2024).

Regulatory Setting

Federal

Farmland Protection Policy Act (FPPA)

The U.S. Department of Agriculture administers the Farmland Protection Policy Act of 1981. The act discourages federal activities that would convert farmland to non-agricultural purposes and assures to the extent possible that federal programs are administered to be compatible with State, local government, and private programs and policies to protect farmland. For purposes of the act, farmland includes land defined as prime, unique, or farmlands of statewide or local importance as well as forest land, pastureland, or cropland; it does not include water or urban built-up land. Projects are subject to Farmland Protection Policy

Act requirements if they could irreversibly convert farmland (directly or indirectly) to non-agricultural use and are completed by a federal agency or with assistance from a federal agency (NRCS 2025). The NRCS is the Federal agency responsible for ensuring compliance with these laws and policies.

Federal agency representatives of projects that have the potential to convert farmland to non-farm use coordinate with their local office of the NRCS or U.S. Department of Agriculture Service Center. The NRCS uses a land evaluation and site assessment system to establish a farmland conversion impact rating score on proposed sites of federally funded and assisted projects. The resulting score is used as an indicator for the project sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the recommended allowable level.

State

California Farmland Mapping and Monitoring Program (FMMP)

The DOC maintains a statewide inventory of farmlands. This land is mapped by the Division of Land Resource Protection as part of the FMMP. The FMMP produces maps and statistical data used for analyzing impacts on California's agricultural resources. The maps are updated every two years with the use of aerial photographs, a computer mapping system, public review, and field reconnaissance.

The California Public Resources Code (Sections 21060.1 and 21095) defines “agricultural land” under the California Environmental Quality Act (CEQA) as those lands designated by the FMMP as either Prime Farmland, Farmland of Statewide Importance, and/or Unique Farmland. Appendix G of the CEQA Guidelines refers to these same three categories as Farmland. Definitions of these FMMP categories are as follows:

- **Prime Farmland** – Land that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years prior to mapping.
- **Farmland of Statewide Importance** – Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to mapping.
- **Unique Farmland** – Land of lesser quality soils used for the production of the State’s leading agricultural cash crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California.

California Land Conservation Act (Williamson Act)

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the “Williamson Act”, enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. The Williamson Act provides tax incentives to retain prime agricultural land and open space in agricultural use, thereby slowing its conversion to urban and suburban development. The program requires a 10-year contract between the county where the subject land is located and the landowner. While subject to contract, the land is taxed on the basis of its agricultural use rather than its market value. The land becomes subject to certain enforceable restrictions,

and certain conditions need to be met prior to approval of an agreement. The goal of the Williamson Act is to protect agriculture and open space.

Local

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to agricultural and forestry resources, listed below (City of Pacifica 2022).

Conservation Element

Guiding Policies

CO-G-12: Preserve Agricultural Open Space. Promote the preservation of agricultural open space in the Planning Area.

Implementing Policies

CO-I-45: Continuation of Agricultural and Related Uses. Where agricultural and related uses exist, allow compatible uses to continue.

Discussion

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?

No Impact. The Project site is not zoned for agricultural use and does not include prime farmland, unique farmland, or farmland of statewide or local importance; the Project site is designated as Other Lands (DOC 2022). The Project does not propose to convert Prime farmland, Unique farmland, or Farmland of Statewide Importance to non-agricultural use. The Project site would be constructed on lands designated by the City of Pacifica as Parks and Open Space which are zoned for Park and Utility uses (City of Pacifica 2022). No Project components or staging area would occur on Prime, Unique, or Farmland of Statewide Importance to non-agriculture use. Therefore, there would be no impact.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project site is not located on any land used for agriculture or zoned for agricultural use. The site and surrounding areas are zoned as Parks and Utilities (City of Pacifica 2022) and no agricultural lands conserved under the Williamson Act are present (DOC 2024). Project construction and staging also would not be located on or near existing zoning for agricultural use, therefore, the Project would not conflict with existing zoning for agricultural use or an active Williamson Contract and there would be no impact.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. As discussed in Chapter 2, *Project Description*, the Project site is steep and surrounded by existing shrubbery and trees. The Project would include some tree removal but because the Project design has not been finalized, the number of trees proposed for removal has not yet been identified. However, the

Project site is not zoned as forestland, timberland, or zoned for Timberland Production, nor would it require the rezoning of lands zoned as forestland, timberland, or zoned for Timberland Production; therefore, there would be no impact.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. Project construction would remove trees onsite. However, as discussed above, the project site is not zoned as forest land nor would it require the conversion of forest land to non-forest use. The Project site has a land use designation of Parks and Open Space and is zoned for Park and Utility uses (City of Pacifica 2022); therefore, the project would not convert forest land to non-forest use and there would be no impact.

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

No Impact. As discussed above, the Project site does not include agricultural lands; therefore, the Project would have no impact on land zoned as farmland. Furthermore, the Project is not located in or near land zoned as forest land. The Project would not permanently alter the environment in such a way that would result in the conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. Given that there would be no indirect conversion of land zoned as forestland or farmland to other land uses, no impact would occur.

References

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3.3.3 Air Quality

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
AIR QUALITY — Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

The Project is located in the City of Pacifica, within the San Francisco Bay Area Air Basin (SFBAAB or Bay Area). The proximity of the Pacific Ocean and the San Francisco Bay to the Project area has a moderating influence on the climate, resulting in cool, wet winters and warm, dry summers, with frequent ocean breezes that disperse pollutants. The Bay Area Air District (BAAD; previously known as the Bay Area Air Quality Management District) is the regional air quality agency for the SFBAAB.

The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of criteria air pollutants, called Ambient Air Quality Standards (AAQS). National AAQS (NAAQS) have been established for seven criteria air pollutants: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 microns and 2.5 microns (PM_{10} and $PM_{2.5}$), and lead. In addition, California has established state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The SFBAAB experiences occasional violations of ozone and particulate matter (PM_{10} and $PM_{2.5}$) standards. Therefore, the Project area currently is designated as a non-attainment area with respect to the state 1-hour and 8-hour ozone standards, the federal ozone 8-hour standard, the state 24-hour and annual average standards for PM_{10}, the state annual average standard for $PM_{2.5}$, and the federal $PM_{2.5}$ 24-hour standard. The Project area is designated as attainment for all other state and federal standards (BAAD 2017a).

In addition to criteria air pollutants, individual projects may emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that may cause chronic (i.e., of long duration) and acute (i.e., severe but short-term) adverse effects on human health, including birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Thus, individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs are not subject to ambient air quality standards but are regulated by air districts using a risk-based approach to determine which sources and which pollutants to control as

well as the degree of control. A health risk assessment (HRA) is an analysis that estimates human health exposure to toxic substances, and when considered together with information regarding the toxic potency of the substances, an HRA provides quantitative estimates of health risks.[2] The California Air Resources Board (CARB) identified diesel particulate matter (DPM) as a TAC in 1998, primarily based on evidence demonstrating cancer effects in humans.

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. As defined by the BAAD, sensitive receptors are typically defined as facilities where these population groups are likely to be located. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, retirement homes, convalescent homes, and hospitals.

The nearest residential receptors are approximately 47 feet away from the Ahni trail, where some of the construction activity would take place during grading for trail modifications. These receptors are approximately 650 feet south of the tank location. There is a school located approximately 1,400 feet (0.26 miles) from the Project site, where student and worker receptors are located.

Odors

Odors are generally regarded as an annoyance rather than a health hazard. The ability to detect odors varies considerably among the population and people may have different reactions to the same odor. The Project site is not in the vicinity of any odor-generating facilities such as a wastewater treatment plant, composting facility, food processing facility, or a metal smelting facility

Regulatory Setting

Federal

Federal Clean Air Act

The Clean Air Act authorized the establishment of federal air quality standards and set deadlines for their attainment. The Clean Air Act identifies specific emission reduction goals, requires both a demonstration of reasonable further progress towards attainment, and incorporates more stringent sanctions for failure to meet interim milestones. Violations of NAAQS for each pollutant are determined based on air pollutant monitoring data. Areas that do not violate ambient air quality standards are considered to have attained the standard. The SFBAAB is currently designated as a non-attainment area with respect to the federal 8-hour ozone standard and the federal $PM_{2.5}$ (24-hour) standard. The USEPA has deemed the area as attainment/unclassified for all other air pollutants, including CO and PM_{10} (BAAD 2017a).

[2] In general, an HRA is required if the BAAD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then subject to an HRA for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

State

California Clean Air Act

The California Clean Air Act (California Health and Safety Code Sections 39600 et seq.), like its federal counterpart, calls for the designation of areas as attainment or non-attainment, based on whether areas within the state have achieved the California ambient air quality standards. Similar to the federal requirements, the California Clean Air Act requires each air district in which state air quality standards, some of which are lower than the federal standards, are exceeded to prepare a plan that documents reasonable progress towards attainment. The SFBAAB is currently designated as a non-attainment area with respect to the state ozone, PM_{10} and $PM_{2.5}$ standards (BAAD 2017a).

Regional and Local

Bay Area Air District CEQA Guidelines

The *BAAD California Environmental Quality Act Air Quality Guidelines* (CEQA Guidelines) is an advisory document that provides lead agencies, consultants, and project proponents with procedures for assessing air quality impacts and preparing environmental review documents. The document describes the criteria that BAAD uses when reviewing and commenting on the adequacy of environmental documents. It recommends thresholds for use in determining whether projects and plans would have significant adverse environmental impacts, describes methods for predicting project emissions and impacts, and identifies measures that can be used to avoid or reduce air quality impacts.

BAAD's most recent update to its CEQA Guidelines (2022 CEQA Guidelines) was adopted in April 2023 (BAAD 2023). These guidelines provide recommended quantitative significance thresholds along with direction on recommended analysis methods. BAAD states that the quantitative significance thresholds are "advisory and should be followed by local governments at their own discretion," and that lead agencies are fully within their authority to develop their own thresholds of significance. However, BAAD offers these thresholds for lead agencies to use in order to inform environmental review for development projects in the Bay Area. Lead agencies may also reference the *CEQA Thresholds Options and Justification Report* developed by BAAD staff in 2009 and included as Appendix A to the 2022 CEQA Guidelines.

According to the CEQA Guidelines, a project would be considered to have a significant impact to existing air quality conditions within the SFBAAB if emissions from construction or operation of a project were to exceed the significance thresholds shown in **Table AIR-1a** and **Table AIR-1b**.

To determine the significance of fugitive dust emissions, the BAAD recommends taking a qualitative approach. According to the BAAD CEQA Guidelines, a project would have a less than significant impact with regards to emissions of fugitive dust if it were to implement the Basic Best Management Practices (BMPs) for Construction-Related Fugitive Dust Emissions recommended by the BAAD (BAAD 2023).

Bay Area Air District 2017 Clean Air Plan

The *2017 Clean Air Plan: Spare the Air, Cool the Climate* (2017 Clean Air Plan) was adopted on April 19, 2017, by the BAAD in cooperation with the Metropolitan Transportation Commission, the San Francisco Bay Conservation and Development Commission, and the Association of Bay Area Governments to provide a regional strategy to improve air quality within the SFBAAB and meet public health goals (BAAD 2017b).

TABLE AIR-1A
BAAD AIR QUALITY SIGNIFICANCE THRESHOLDS — CRITERIA AIR POLLUTANTS

	Construction Thresholds Average Daily Emissions (lbs./day)	Operational Thresholds Average Daily Emissions (lbs./day)	Operational Thresholds Annual Average Emissions (tons/year)
Criteria Air Pollutants			
ROG, NO_x, $PM_{2.5}$	54[a]	54	10
PM_{10}	82[a]	82	15
CO	Not Applicable	9.0 ppm (8-hour average) or 20.0 ppm (1-hour average)	
Fugitive Dust ($PM_{2.5}$, PM_{10})[b]	Construction Dust Ordinance or other Best Management Practices (BMPs)	Not Applicable	

NOTE: µg/m^3 = micrograms per cubic meter; CO = carbon monoxide; lbs/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$= fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases.

a. Construction emissions PM_{10} and $PM_{2.5}$ thresholds are for exhaust emissions only.

b. The BAAD strongly recommends implementing all feasible fugitive dust management practices especially when construction projects are located near sensitive communities, including schools, residential areas, or other sensitive land uses.

SOURCE: BAAD 2023

TABLE AIR-1B
BAAD AIR QUALITY SIGNIFICANCE THRESHOLDS — HEALTH RISKS AND HAZARDS

	Construction Thresholds	Operational Thresholds
Health Risks and Hazards		
Excess Cancer Risk	10 per one million	10 per one million
Chronic or Acute Hazard Index	1.0	1.0
Incremental Annual Average $PM_{2.5}$	0.3 µg/m^3	0.3 µg/m^3

NOTE: µg/m^3 = micrograms per cubic meter; CO = carbon monoxide; lbs/day = pounds per day; NOx = oxides of nitrogen; $PM_{2.5}$= fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; ppm = parts per million; ROG = reactive organic gases.

SOURCE: BAAD 2023

The control strategy described in the 2017 Clean Air Plan includes a wide range of control measures designed to reduce emissions and lower ambient concentrations of harmful pollutants, safeguard public health by reducing exposure to air pollutants that pose the greatest health risk, and reduce greenhouse gas emissions (GHGs) to protect the climate.

The 2017 Clean Air Plan addresses four categories of pollutants including ground-level ozone and its key precursors: ROG and NO_X; PM, primarily $PM_{2.5}$, and precursors to secondary $PM_{2.5}$; air toxics; and GHG emissions. The control measures are categorized based on the economic sector framework including stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, and water.

The BAAD has permit authority over most types of stationary emission sources and can require stationary sources to obtain permits, and can impose emission limits, set fuel or material specifications, or establish

operational limits to reduce air emissions. The air district also regulates new or expanding stationary sources of TACs and requires air toxic control measures for many sources emitting TACs.

Local

City of Pacifica General Plan 2040

The City of Pacifica 2040 General Plan adopted in July 2022, and outlines several policies intended for the improvement of air quality and reduction of air emissions within the City (City of Pacifica 2022). The following policies are applicable to the Project:

> ***CO-G-13: Improve Air Quality*:** Reduce emissions of ozone-producing pollutants and particulate matter to improve regional air quality and protect the health of Pacifica and Bay Area residents.
>
> ***CO-I-49: Impact Guidelines.*** Use BAAD's *Air Quality Guidelines*, to determine and mitigate project air quality impacts.
>
> ***CO-I-51: Construction Equipment.*** Require all construction equipment to be maintained and tuned to meet appropriate EPA and CARB emission requirements.
>
> ***CO-I-52: Dust Abatement.*** Require contractors to use best management practices to reduce particulate emissions and dust associated with construction activities.

Discussion

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

Less than Significant. The 2017 Clean Air Plan is the applicable air quality plan for the SFBAAB within which the project area is located. The BAAD CEQA Guidelines recommend that a project's consistency with the current air quality plan be evaluated using the following three criteria:

1. The project supports the goals of the air quality plan;
2. The project includes applicable control measures from the air quality plan; and
3. The project does not disrupt or hinder implementation of any control measures from the air quality plan.

The primary goals of the 2017 Clean Air Plan are to protect air quality and public health at the regional and local scale and protect the climate by reducing regional criteria air pollutant emissions and reducing local air quality-related health risks (by meeting state and national ambient air quality standards). To meet these goals, the 2017 Clean Air Plan includes 85 control measures aimed at reducing air pollutants in the SFBAAB. These control measures are grouped into the following sectors: stationary (industrial) sources, transportation, energy, buildings, agriculture, natural and working lands, and waste management.

The vast majority of the control measures included in the 2017 Clean Air Plan do not apply directly to the Project because they target facilities or land uses that are not proposed by the Project applicant (e.g., energy generation, waste management, agricultural, forest or pasture lands); vehicles or equipment that would not be employed in the Project area (e.g., airplanes, farming equipment); and/or involve rulemaking or other actions under the jurisdiction of agencies not directly involved with design and approval of the Project and its related actions. For example, the Agriculture, Natural and Working Lands, and Water measures

address emissions sources not applicable to the Project, but rather the BAAD's own programs and regional air quality planning and are less applicable to local agencies' decisions and projects. However, the Project would include features, either by design, or required as part of compliance with regulations, that support implementation of the 2017 Clean Air Plan. **Table AIR-2** provides a consistency analysis of the Project with applicable control measures of the 2017 Clean Air Plan.

TABLE AIR-2
CONSISTENCY WITH POTENTIALLY APPLICABLE CONTROL MEASURES IN 2017 CLEAN AIR PLAN

Control Measure	Description	Consistency Analysis
Stationary Source Control Measures		
SS36: PM from Trackout	SS36 developed Regulation 6, Particulate Matter; Rule 6: Trackout (Rule 6-6) to address mud and dirt that can be "tracked out" from construction sites, bulk material storage, and disturbed surfaces onto public paved roads where vehicle traffic will pulverize the mud and dirt into fine particles and entrain them into the air.	**Consistent.** Construction activities associated with the Project would implement BMPs required by the BAAD, through part of **BMP AIR-1: Construction-Related Fugitive Dust Emissions**, which would reduce fugitive dust emissions and trackout of PM from construction areas.
SS38 Fugitive Dust	SS38 reduces particulate matter (PM_{10} & $PM_{2.5}$) fugitive dust emissions from traffic and other operations on construction sites, large, disturbed surfaces, and other sources of fugitive PM emissions.	**Consistent.** Project construction activities would implement dust control BMPs required by the BAAD as part of **BMP AIR-1: Construction-Related Fugitive Dust Emissions**, which would be required for project approval. This would reduce fugitive dust emissions from construction areas.

Additionally, as indicated in the following discussion with regard to air quality checklist question (b), the Project would result in a less than significant impact related to construction emissions with the implementation of the BAAD's applicable recommended fugitive dust control measures, which is included in the Project as **BMP AIR-1: Construction-Related Fugitive Dust Emissions**.

As indicated above, the Project would not hinder, or delay implementation of any applicable control measures contained in the 2017 Clean Air Plan. Therefore, the Project would be considered to support the primary goals of the 2017 Clean Air Plan and this impact would be less than significant.

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

Less than Significant.

Construction

Construction-related emissions are considered short-term in duration; nevertheless, construction emissions can represent a significant adverse impact on air quality. During construction, the Project would generate emissions of criteria air pollutants from operation of heavy-duty construction equipment, operation of worker vehicles and haul trucks, excavation of materials, tank construction, and paving activities. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1 and then compared to the BAAD's applicable regional significance thresholds. The Project specific information for the construction schedule, off-road equipment, and export volume were used during phases provided by the Project applicant. Where Project-specific data was not available, CalEEMod defaults were used. Detailed modeling assumptions are included in **Appendix A** in this document.

Construction is assumed to take place over an approximate 15-month period. Construction of the Project would involve demolition, site preparation, earthwork, tank construction, and paving. The total emissions generated over the duration of construction was divided by the number of construction days for each construction year to determine average daily emissions from construction and are presented in **Table AIR-3**. As shown in the table, emissions of ROG, NOx, PM_{10}, and $PM_{2.5}$ would all be below their respective significance thresholds which, for construction, have been established by BAAD in terms of average daily emissions. Therefore, the Project would not have a significant impact related to construction criteria air pollutant emissions.

TABLE AIR-3
AVERAGE DAILY CONSTRUCTION-RELATED CRITERIA POLLUTANT EMISSIONS
(POUNDS PER DAY)

Project Average Daily Construction Emissions by Year	ROG	NO_x	Exhaust PM_{10}[a]	Exhaust $PM_{2.5}$[a]
Construction Year 1	1.04	8.57	0.26	0.26
Construction Year 2	1.51	11.74	0.47	0.47
BAAD Threshold for Significant Construction Impacts	54	54	82	54
Potential Significant Impact?	No	No	No	No

NOTES: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = particulate matter with diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns.

a. BAAD's construction-related significance thresholds for PM_{10} and $PM_{2.5}$ apply to exhaust emissions only and not to fugitive dust.

SOURCE: ESA, 2025 (Appendix A)

In addition to exhaust emissions, emissions of fugitive dust would also be generated by construction activities associated with grading and earth disturbance, travel on paved and unpaved roads, etc. Such emissions could result in a potential significant impact. With regard to fugitive dust emissions, the BAAD Guidelines focus on implementation of recommended dust control measures rather than a quantitative comparison of estimated emissions to a significance threshold. For all projects, the BAAD recommends the implementation of its Basic Best Management Practices (BMPs) for Construction-Related Fugitive Dust Emissions (BAAD 2023). Without implementation of these measures, the impact from fugitive dust emissions during construction would be considered significant. The Project would be required to implement these mandatory measures as part of **BMP AIR-1: Construction-Related Fugitive Dust Emissions**, and therefore, would not result in a significant impact due to construction fugitive dust.

> **BMP AIR-1: Construction-Related Fugitive Dust Emissions.** The Project applicant shall implement the following measures during all phases of construction to control dust and exhaust at the project site:
>
> - All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
> - All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
> - All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
> - All vehicle speeds on unpaved roads shall be limited to 15 mph.

- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
- Unpaved roads providing access to sites located 100 feet or further from a paved road shall be treated with a 6- to 12-inch layer of compacted layer of wood chips, mulch, or gravel.
- Publicly visible signs shall be posted with the telephone number and name of the person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's General Air Pollution Complaints number shall also be visible to ensure compliance with applicable regulations.

Therefore, impacts associated with the potential for construction-related exhaust emissions would not generate criteria non-attainment air pollutant emissions in a considerable amount, thus resulting in a less than significant impact.

Operations

Upon completion of Project construction, and after the tank is commissioned and operational, the Project would not result in an increase in required maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would continue to include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, additional truck trips resulting from maintenance of the tanks and appurtenances would be negligible. Therefore, impacts associated with the Project would not generate criteria air pollutant emissions exceeding thresholds during operations, resulting in a less than significant impact.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant with Mitigation. A comprehensive HRA was prepared in order to evaluate the potential for lifetime excess cancer risk and non-cancer chronic health risks from DPM, and annual average $PM_{2.5}$ concentrations to existing sensitive and worker receptors associated with exposure to construction TAC emissions from the project. The HRA follows the protocols outlined by the BAAD, CARB, the Office of Environmental Health Hazard Assessment (OEHHA), and U.S. EPA. Consistent with guidelines and recommendations from these agencies, the HRA evaluated the estimated incremental increase in lifetime cancer risks and non-cancer chronic risk from exposure to DPM emissions. The HRA also calculated the annual average $PM_{2.5}$ concentrations from construction exhaust and fugitive dust emissions.

The OEHHA guidelines for HRAs provides age sensitivity factors to apply to the cancer risk calculation. These factors reflect the increased sensitivity of children to the effects of carcinogens. The modeling exposure assumptions conservatively assume a child in the age group from birth to 2 years of age, which is the age group most susceptible to DPM emissions from a cancer risk perspective, could be living at the residence next to the project site. At the nearby school (approximately 1,400 feet from the Project) it was

assumed that children in the 2-16 age range would be present. An employee, or worker receptor was also assumed to be present at the school. Children have higher breathing rates, which increases the intake of pollutants. The modeling evaluated the cancer probability, chronic hazard index, and annual average $PM_{2.5}$ concentrations at numerous receptors, including residences and the nearby school. The maximum, calculated result for the residential impact is referred to as the maximally-exposed individual resident (MEIR); the maximum, calculated result for the worker receptor is referred to as the maximally-exposed individual worker (MEIW).

The HRA was conducted using the U.S. EPA AERMOD dispersion model (version 24142), which uses user-supplied emissions information and meteorological data to predict pollutant concentrations at specific locations defined by a Cartesian coordinate system. The on-site construction equipment within the Project site was modeled as an area source. The haul truck route was modeled as line volume sources, nearest to sensitive receptors along Fassler Avenue. The modeling parameters are as follows:

- On-road construction trucks: line area source representing the truck route along Fassler Avenue;
  - Release height of 3.4 meters for haul truck exhaust;
  - Plume height of 6.8 meters;
  - Plume width of 10.0 meters;
  - Emissions occurring only between the hours of 8 AM and 5 PM, and;
- On-site Construction: one polygon area source dimensions covering the project site, with;
  - Release height of 5 meters for construction equipment exhaust;
  - Initial vertical dimension of 1.4 meters;
- Receptor flagpole height of 1.5 meters (ground-level receptor at breathing height); and
- Meteorological station of San Francisco International Airport for the years 2013 through 2017.

The TACs included in the HRA were limited to the pollutants of primary concern associated with construction of the project: DPM, $PM_{2.5}$ exhaust emissions from heavy construction equipment and trucks, and $PM_{2.5}$ fugitive road dust from construction activities. The emissions model calculates particulate matter emissions in both the PM_{10} and $PM_{2.5}$ size range. Emissions of PM_{10} exhaust are used as a surrogate for DPM emissions (OEHHA 2015). The sources were modeled with an emission rate of one gram per second to obtain a dispersion factor (unit concentration) at each receptor location. The DPM and $PM_{2.5}$ concentrations were calculated using the dispersion factors and the DPM and $PM_{2.5}$ emissions estimated from CalEEMod.

Table AIR-4 summarizes the excess lifetime cancer risk, chronic hazard index, and annual average $PM_{2.5}$ concentrations from project construction. The risks were evaluated at all nearby off-site sensitive and worker receptors, and the results are presented for the MEIR, school, and MEIW. The MEIR is located approximately 47 feet southeast of the Project site, while school receptors and the worker receptor are located approximately 1,430 feet southeast of the Project site. As presented in Table AIR-4, DPM exposure from Project construction would result in an increase in lifetime cancer risk of 11.7 in one million at the MEIR, which would exceed the BAAD significance threshold of 10 in one million. Although the unmitigated chronic health hazard index and annual $PM_{2.5}$ concentrations at the residential

MEIR would be less than the BAAD thresholds, the unmitigated increase in lifetime residential cancer risk at the MEIR would exceed the significance threshold. Therefore, the unmitigated health risk impact from Project construction would be significant.

TABLE AIR-4
HEALTH RISK IMPACTS AT THE MAXIMUM EXPOSED SENSITIVE RECEPTORS

Construction Scenario/ Maximally Exposed Individual Receptor	Cancer Risk (in 1 million)	Chronic Hazard Index (unitless)	$PM_{2.5}$ Concentration ($\mu g/m^3$)
Unmitigated Construction			
MEIR	11.7	0.01	0.05
MEIW	0.01	<0.01	<0.01
School	0.09	<0.01	<0.01
BAAD Significance Threshold	10	1.0	0.3
Threshold Exceeded?	**Yes**	No	No
Mitigated Construction[a]			
MEIR	4.99	<0.01	0.02
MEIW	<0.01	<0.01	<0.01
School	0.04	<0.01	<0.01
BAAD Significance Threshold	10	1.0	0.3
Threshold Exceeded?	No	No	No

NOTES:

a. Mitigation measures include Tier 4 Final off-road construction equipment.

ABBREVIATIONS:

$PM_{2.5}$ = particulate matter with diameter equal to or less than 2.5 microns; $\mu g/m^3$ = micrograms per cubic meter.

SOURCE: ESA, 2025. See Appendix A

Therefore, the Project sponsor shall require construction contractors to implement **Mitigation Measure AIR-1: Clean Construction Equipment**, mandating the use of Tier 4 Final construction equipment reduce these risks.

> **Mitigation Measure AIR-1: Clean Construction Equipment**
>
> The applicant and/or its construction contractors shall be required to use off-road diesel construction equipment compliant with U.S. EPA Tier 4 Final non-road engine standards for all applicable equipment. Prior to the commencement of construction activities, the construction contractor and/or the applicant shall prepare an equipment list that identifies each piece of off-road equipment to be operated at the project site by its equipment identification number (EIN) and demonstrates that each piece of equipment meets U.S. EPA Tier 4 Final non-road engine standards. The list shall be made available at the construction site and shall be updated when new or replacement construction equipment are brought to the site.

With the implementation of **Mitigation Measure AIR-1**, residential cancer risk would be reduced to below BAAD thresholds, therefore the impact would be less than significant with mitigation.

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

Less than Significant. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, and rendering plants. The Project would not introduce significant sources of new odors in the vicinity as the Project includes water supply infrastructure. Therefore, odor impacts from the Project would be less than significant.

References

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BAAD (Bay Area Air Quality Management District). 2017b. *Spare the Air, Cool the Climate: A Blueprint for Clean Air and Climate Protection in the Bay Area—2017 Final Clean Air Plan.* Adopted April 19, 2017. Available: https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en. Accessed June 2025.

BAAD (Bay Area Air Quality Management District). 2023. *2022 California Environmental Quality Act Air Quality Guidelines.* April 2023. Chapter 3, "Thresholds of Significance.", Chapter 5, "Project-Level Air Quality Impacts". Available: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed June 2025.

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OEHHA (Office of Environmental Health Hazard Assessment). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments.* Air, Community, and Environmental Research Branch. California Environmental Protection Agency. February 2015. Available: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf. Accessed June 2025.

3.3.4 Biological Resources

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

Environmental Setting

The Project site is located on a slope above a residential neighborhood in Pacifica, California, at approximately 700 feet AMSL. It is adjacent to a public trail and south of the Golden Gate National Recreation Area and supports an existing tank that would be replaced under the Project, and an associated access road and developed habitat. Undeveloped portions of the site support scrub vegetation, annual grasslands, and sparsely vegetated areas. Database searches of the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) and U.S. Fish and Wildlife Service (USFWS) species list were conducted within a 5-mile radius of the Project site to identify previously reported occurrences of special-status plant and wildlife species (see **Figure 3-3**) (CDFW, 2025; USFWS, 2025). A reconnaissance-level field survey of the Project site and surroundings was conducted by ESA biologist Liza Ryan on May 12, 2025, to characterize existing conditions and determine the potential for the occurrence of special-status species and other regulated biological resources. Special-status species recorded in the vicinity of the Project site are shown in **Appendix B**, which lists special-status plant and wildlife species recorded in the vicinity of the Project site. No special-status species were observed during the site survey, and no surface water or stream channels were observed.

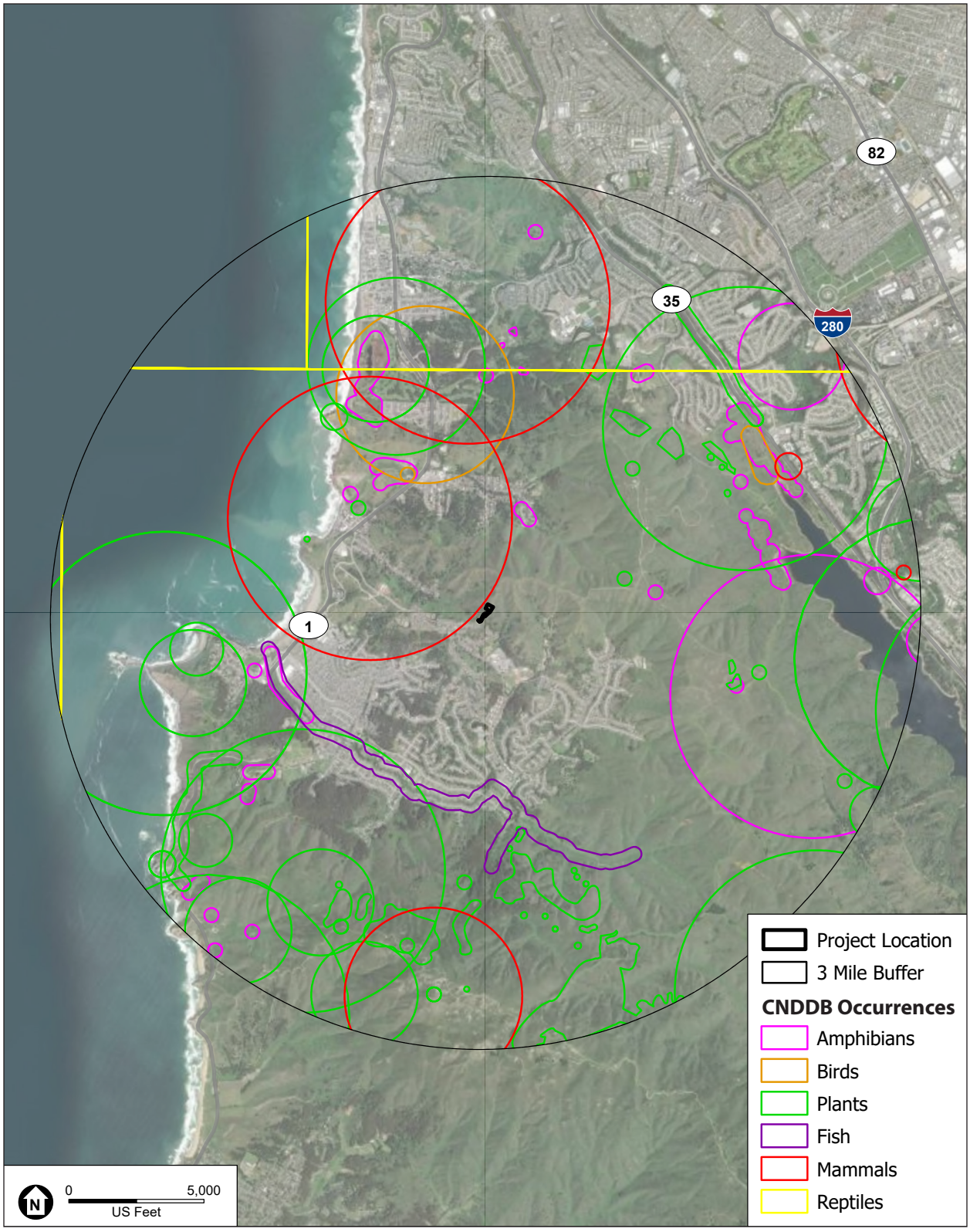

Figure 3-3
CDNBB Occurrences

Also, no sensitive natural communities were identified on the site. The following natural communities were present on the site:

- **Annual Grassland.** This vegetation is present in the lower elevations of the Project site along the access road to the water tank. This community is dominated by a variety of non-native grasses and shrubs, including pampas grass (*Cortaderia selloana*), coyote brush (*Baccharis pilularis)*, French broom (*Genista monspessulana*), vetch (*Vicia* sp.) and wild mustard (*Sinapis arvensis*). Non-native grassland may provide nesting or foraging habitat for birds, such as house finch (*Haemorhous mexicanus*), California scrub jay (*Aphelocoma californica*), California towhee (*Melozone crissalis*), Anna's hummingbird (*Calypte anna*), and bushtit (*Psaltriparus minimus*) and small mammals, such as the cottontail rabbit (*Sylvilagus audubonii*) observed during the survey. Scattered Monterey pines (*Pinus radiata)* were present, providing potential additional nest sites for birds, including raptors.
- **Coyote Brush Scrub.** This vegetation community was observed at higher elevations surrounding the existing water tank. It is found on coastal bluffs and terraces and is characterized by coyote brush shrubs at 50 percent or higher cover (Sawyer et al., 2009). Other species present in this habitat included California sage (*Artemisia californica),* sticky monkeyflower (*Mimulus aurantiacus*), blueblossom (*Ceanothus thyrsiflorus),* California blackberry (*Rubus ursinus)* and poison oak (*Toxicodendron diversilobum),* along with other herbaceous wildflowers, including California poppy (*Eschscholzia californica)*, ladies' tobacco (*Pseudognaphalium californicum*), yarrow (*Achillea millefolium*) and figwort (*Scrophularia californica*). A row of Monterey pines (*Pinus radiata*), likely planted as windbreaks, were present in this habitat. This habitat may provide nesting and foraging habitat for wildlife, similar to grassland habitat. Coyote brush scrub is not considered a sensitive natural community (CDFW, 2023).
- **Ruderal/Disturbed.** Ruderal/disturbed areas include unvegetated or sparsely vegetated ground, including the paved access road/trail, parking area, and tank surroundings. These areas are mostly devoid of cover or forage, but may include small, weedy grasses and forbs. At the water tank site, iceplant (*Carpobrotus* sp.), an invasive species, has grown over portions of the pavement. These areas provide minimal habitat value for wildlife, but may be used by wildlife to transit between natural habitats.
- **Critical Habitat for Listed Fish and Wildlife Species.** Critical habitat may be designated for species listed under the federal Endangered Species Act (see Regulatory Setting, below). No critical habitat for any listed species is present at the Project site.

Special-status Species

ESA assessed the degree to which special-status plant and wildlife species may have the potential to occur at the Project site by completing the background review of the data sources listed above; these search results are provided in Appendix B. The background review and field survey were used to assess the potential for species presence at the Project site and surroundings.

Special-status Plants

San Mateo woolly sunflower (*Eriophyllum latilobum*), found in foothill woodlands, and white-rayed pentachaeta (*Pentachaeta bellidiflora*), a serpentine specialist, are federally endangered plants recorded in the vicinity of the Project site, but the Project site lacks suitable habitat for these species. No rare plants were seen during the biological reconnaissance survey. The annual grassland habitat was observed to be

overgrown with non-native grasses, while the coastal scrub habitat lacked evidence of serpentine soils. Numerous additional state rare plant species, including coastal trinquetrella (*Trinquetrella californica*), a moss found in scrub habitat; Kellogg's horkelia (*Horkelia cuneata* var. *sericea*), found in scrub habitat; and papoose tarplant (*Centromadia parryi* ssp. *parryi*), found mainly in wetlands, have similarly been recorded nearby. No wetland habitat is present onsite, but the two plants favoring scrub habitat have moderate likelihood to be present. The nearest Kellogg's horkelia record is in Colma approximately 5 miles away and dates from the 1980s (CDFW, 2025). The nearest coastal trinquetrella record is from 2006 in the hills east of the Project site (CDFW, 2025).

Special-status Wildlife

The grassland and scrub communities at the Project site do not provide habitat for amphibian species, including California red-legged frog (*Rana draytonii*) which is known to occur in lowlands near aquatic habitat in the area. Federally listed butterflies (see Appendix B) including endangered Mission Blue Butterfly (*Icaricia icarioides missionensis*) are also known to occur in northern San Mateo County, but have not been recorded close to the site (CDFW 2025), and the host plants for these butterflies such as milkweed were not seen during the reconnaissance survey, so they are unlikely to occur. However, monarch butterfly *(Danaus plexippus)*, a federal candidate threatened species, has moderate potential to occur due to the presence of suitable overwintering habitat in Monterey pine trees and floral nectar resources in the scrub habitat.

Monarch butterfly (Danaus plexippus). Monarch butterfly is a federal candidate species. This migratory butterfly overwinters in California, within wind-protected groves of trees, primarily Monterey pine, Monterey cypress (*Hesperocyparis macrocarpa*), and eucalyptus along the coast from northern Mendocino County south to Baja California, typically near water and nectar sources. Their required host plant is milkweed (*Asclepias* spp.) for development, egg deposition, and nectar. Milkweed was not observed onsite, and monarchs have not been recorded at this location (CDFW, 2025; iNaturalist, 2025), nor elsewhere in Pacifica. However, mature Monterey pines on the ridge and in the immediate surroundings of the Project site are less than one mile from the coast, and could provide suitable overwintering habitat for monarch butterflies, which have moderate potential to occur.

Bat species. Bat species are protected under California Fish and Game Code. Townsend's big-eared bat *(Corynorhinus townsendii),* pallid bat (*Antrozous pallidus),* and western red bat (*Lasiurus frantzii*) are state species of special concern which have been recorded approximately 5 miles away (Appendix B). Active roosts of these species are protected by CDFW. The mature Monterey pines at the Project site could provide suitable roost habitat for these bat species as well as other non-special-status bats. Bat species have moderate potential to occur.

Nesting Birds. The coastal scrub and shrub vegetation, tall grasses, and the Monterey pine trees, may provide nesting and foraging habitat for a variety of resident and migratory birds. Raptor species that may nest here could include red-tailed hawk, red-shouldered hawk, great horned owl (*Bubo virginianus*), and white-tailed kite (*Elanus leucurus*), a California fully protected species. Smaller bird species which may nest here may include Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), American crow (*Corvus brachyrhynchos)*, dark-eyed junco (*Junco hyemalis*), and western scrub jay (*Aphelocoma californica*), among many others. The federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code protect raptors and other native migratory birds while nesting (see

Regulatory Setting, below). Bird nesting season in the San Francisco Bay Area begins in February for most birds and lasts through August.

Regulatory Setting

Federal

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) (United States Code title 16, sections 1531–1544) protects listed plant, fish, and wildlife species from harm or *take*, which is broadly defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Take can also include habitat modification or degradation that directly results in the death or injury of a listed fish and wildlife species. An activity can be defined as take even if it is unintentional or accidental. Listed plant species are provided less protection than listed fish and wildlife species. Listed plant species are legally protected from take under the FESA only if they occur on federal lands or if the project requires a federal action, such as a section 404 permit from the U.S. Army Corps of Engineers (USACE). USFWS has jurisdiction over wildlife and freshwater fish species that are federally listed as threatened or endangered under the FESA, while the National Marine Fisheries Service (NMFS) has jurisdiction over marine species and anadromous fish that are federally listed as threatened or endangered.

FESA section 7(a)(2) requires consultation with USFWS or NMFS if a federal agency undertakes, funds, permits, or authorizes (termed the *federal nexus*) any action that may affect endangered or threatened species or designated critical habitat. For projects that may result in the incidental take of threatened or endangered species, or critical habitat, and that lack a federal nexus, a section 10(a)(1)(b) incidental take permit can be obtained from USFWS and/or NMFS. To receive a permit, the applicant must develop a habitat conservation plan for approval by USFWS or NMFS. The issuance of an incidental take permit requires the USFWS or NMFS to go through internal section 7(a)(2) consultation.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) (United States Code title 16, section 703 et seq.) is the domestic law that affirms and implements a commitment by the United States to four international conventions (with Canada, Mexico, Japan, and Russia) for the protection of a shared migratory bird resource. Unless and except as permitted by regulations, the MBTA states that without a permit issued by the U.S. Department of the Interior, it is unlawful to pursue, hunt, take, capture, or kill any migratory bird. The law also applies to the intentional disturbance and removal of nests occupied (i.e., active nests) by migratory birds or their eggs during the breeding season. The removal of inactive nests that are not protected by other federal regulations (e.g., Federal Endangered Species Act, Bald and Golden Eagle Protection Act) does not constitute “take” under the MBTA and would not conflict with regulation.

State

California Endangered Species Act

Under the California Endangered Species Act (CESA), CDFW is responsible for maintaining a list of threatened and endangered species (California Fish and Game Code section 2070 et seq.). The department also maintains a list of *candidate species*, which are species formally under review for addition to either the list of endangered species or the list of threatened species.

The CESA prohibits the take of plant and animal species that the California Fish and Game Commission has designated as either threatened or endangered in California. In the context of this regulation, *take* means to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill a listed species (California Fish and Game Code section 86). The prohibitions against take also apply to candidates for listing under the CESA. However, CESA section 2081 allows CDFW to issue permits for the minor and incidental take of species by an individual or permitted activity listed under the act. Unlike the FESA provision, species that are candidates for state listing are granted the same protections as listed species under the CESA.

California Fish and Game Code

Section 1600. CDFW regulates streambeds, their banks, and riparian habitat under section 1600 of California Fish and Game Code. Alteration to streambeds, banks, and/or riparian habitat requires a Lake and Streambed Alteration Agreement from CDFW before the initiation of such work.

Fully Protected Species. Certain species are considered *fully protected*, meaning that the California Fish and Game Code explicitly prohibits all take of individuals of these species except under specific conditions and for limited activities such as scientific research and renewable energy or infrastructure projects. Fully protected amphibians and reptiles, fish, birds, and mammals are listed in California Fish and Game Code sections 5050, 5515, 3511, and 4700, respectively. It is possible for a species to be protected under the California Fish and Game Code but not be fully protected. For instance, mountain lion (*Puma concolor*) is protected under section 4800 et seq. but is not a fully protected species.

Sections 3503 and 3503.5. Under section 3503 of the California Fish and Game Code, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the code or any regulation made pursuant thereto. Section 3503.5 of the code prohibits take, possession, or destruction of any birds in the orders Falconiformes (hawks) or Strigiformes (owls), or of their nests (active and inactive) and eggs. Migratory non-game birds and their nests (active and inactive) are protected under section 3800, and other specified birds are protected under section 3505. California Fish and Game Code section 3513 adopts the federal definition of migratory bird take, defined by the Secretary of the Interior under provisions of the MBTA.

California Environmental Quality Act Guidelines Section 15380. CEQA Guidelines Section 15380(b) designates a species as endangered or rare for the purposes of CEQA if the species of plant or animal is meets either of the following criteria:

(A) Although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or

(B) The species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered "threatened" as that term is used in the Federal Endangered Species Act.

Native Plant Protection Act. The California Native Plant Protection Act (Fish and Game Code Sections 1900-1913) requires that endangered or rare native plants be protected by state departments and agencies through the conservation of rare and endangered plants. The act prohibits the take of endangered or rare

plants and mandates that CDFW is notified at least 10 days prior to a change in land use for areas that support endangered or rare plant species.

Local

City of Pacifica Tree Preservation Ordinance

The City Tree Preservation Ordinance was adopted in 2022, and it defines species of protected trees, heritage trees, and tree groves that are protected from removal, pruning, and encroachment. Most protected trees, including heritage trees, are protected at 12 inches or more diameter at breast height; however, toyon (*Hetermeles arbutifolia*) are protected at 4 inches or more diameter at breast height, and groves of 10 or more trees of any species are protected at 6 inches or more diameter at breast height. Where a permit is required for tree removal, replacement planting is required with a minimum of two trees; subsequent plantings are required should replacement trees fail to establish (City of Pacifica, 2022).

Discussion

Would the Project:

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

Less than Significant with Mitigation.

Special-Status Plant Species

Six special-status plant species are documented within 3 miles of the Project site (**Figure 3-3**). The majority of these plants are restricted to specific habitats (e.g., serpentinite soils or wetlands) not found within the Project site. Two special-status plant species described above were found to have a moderate or higher potential of occurring on the Project site: coastal trinquetrella (*Trinquetrella californica*) and Kellogg's horkelia (*Horkelia cuneata* var. *sericea*). Both these species occur within scrub habitat, which is found on the Project site, and both have been recorded nearby (CDFW, 2025).

Ground disturbance for installation of the new water tanks, a temporary haul road or a retaining wall would result in the loss, damage, or removal of these special-status plants, if present on the Project site. The staging area does not have potential to host special-status plants, as the parking area is located on barren ground.

Damage or removal of special-status plants due to construction would represent a potentially significant impact. The implementation of **Mitigation Measure BIO-1 (Protection of Rare Plants)** would ensure that potential impacts on special-status plants would be reduced to a less-than-significant level.

> **Mitigation Measure BIO-1: Protection of Rare Plants**
>
> A qualified biologist shall conduct a focused survey for all rare plant species with potential to be present during their suitable blooming period (or suitable time of year, in the case of the moss), 14 days prior to ground disturbance. If no special-status plants are observed, no further action is required. If special-status plant species are observed, the plants will be avoided with a suitable

buffer, determined in coordination with CDFW. The buffer zone shall be clearly demarcated using exclusion fencing.

If establishing an avoidance buffer is not feasible, individual plants shall be transplanted to an area with suitable physical and biological conditions outside of the work area, according to a Rare Plant Relocation Plan to be prepared by the District or its contractor and reviewed and approved by CDFW. The Rare Plant Relocation Plan shall include the list of native species to replant in each location, a schedule for regular monitoring and weeding for a period of five years, and adaptive management criteria including additional monitoring, weeding, watering, or replanting, if success criteria for 70 percent relative native plant cover and no more than 15 percent invasive weed cover are not met after the five-year management period.

Special-Status Wildlife Species

As described below, numerous birds have potential to nest in trees or scrub habitat on or near the Project site. In addition, special-status bat species have moderate potential to occur on the Project site. Tree-roosting bat species may be present in tree foliage, under exfoliating bark, or in tree cavities. The Project site is unlikely to host hibernation or maternity roosting sites, but may provide night roosts for these special-status and other bat species in trees.

Impacts on Migratory Birds, including Raptors

The Migratory Bird Treaty Act protects nesting birds from direct take, and California Fish and Game Code Sections 3503 and 3503.5 protect migratory birds and their eggs and nests from both direct and incidental take. These protections apply to special-status birds, as well as other birds that may occur at the Project site.

Migratory birds are likely to nest in trees, shrubs, or tall grasses within the Project site. If construction activities or removal and trimming of vegetation are scheduled at the Project site during the bird nesting season (between February 1 and August 31), nesting birds could be killed or injured, or could abandon their nests, which would be a significant impact. To mitigate this impact, **Mitigation Measure BIO-2 (Protection of Nesting Birds)**, would be implemented to ensure that potential impacts on nesting birds are reduced to a less-than-significant level.

Mitigation Measure BIO-2: Protection of Nesting Birds

For construction activities that occur between February 1 and July 31, preconstruction nesting bird surveys shall be conducted by a qualified biologist familiar with bird behavior and knowledgeable of nest types prior to and within 14 days of any initial ground-disturbance activities. Surveys shall be conducted on foot within all suitable nesting habitat within 250 feet for songbirds, and 500 feet for raptors, to the extent access is feasible. If active nests are identified at the time of the survey, a minimum 150-foot radius exclusion zone for songbirds shall be established and flagged. Active raptor or special-status bird nests shall be protected by a buffer with a minimum radius of 250 feet. These distances may be adjusted depending on the level of surrounding ambient activity (e.g., if the Project site is adjacent to a road) and if an obstruction is within line-of-sight between the nest and construction. Each exclusion zone will remain in place until the nest has successfully fledged or is otherwise inactive as determined by a qualified biologist.

- Survey results shall be considered valid for 14 days from the survey date. Should ground disturbance commence later than 14 days from the survey date, surveys shall be repeated. If no nesting birds are encountered, then work may proceed as planned.

- After commencement of work, if there is a period of no work activity of 14 days or longer during the bird breeding season, surveys shall be repeated to ensure birds have not established nests during inactivity. If new nests are encountered, buffers shall be established.
- Any birds that begin nesting amid construction activities shall be assumed to be habituated to construction-related noise and disturbance levels. In such cases, work exclusion zones shall be established by the qualified biologist.

Impacts on Bat Species

Bats are nocturnal feeders on insects in flight, often in the vicinity of water. Tree-roosting bat species have a moderate potential to occur at the Project site and use mature trees for night roosts. Large trees at the Project may provide roosting habitat for special-status and common bat species. Tree removal needed to complete the Project could result in injury or disturbance to roosting bats or destruction of occupied roosting habitat, which would be a significant impact.

Implementation of **Mitigation Measure BIO-3: Bat-Safe Tree Removal** would reduce these impacts to a less than significant level.

Mitigation Measure BIO-3: Bat-Safe Tree Removal

A qualified biologist shall conduct a pre-construction survey for special-status bats in advance of tree trimming to characterize potential bat habitat and identify active roost sites. Should potential roosting habitat or active bat roosts be found in trees to be disturbed, the following measures shall be implemented:

- Trimming or removal of trees shall occur outside of bat maternity roosting season (approximately April 15 to August 15) and outside of months of winter torpor (approximately October 15 to February 28).
- Trimming or removal of trees containing roost sites or potential bat roosting habitat shall be removed using the following two-day phased removal method under supervision of a qualified biologist. Branches and limbs not containing cavities or fissures in which bats could roost shall be cut on the first day, only using chainsaws. Branches or limbs containing roost sites shall be trimmed on the following day, under the supervision of the qualified biologist, also using chainsaws.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact. The Project site consists of upland habitat, including non-native grassland, coyote brush scrub, and developed land. No riparian or other sensitive natural community is present; thus, there would be no impact on sensitive natural communities from the Project.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The Project site consists of upland habitat, including non-native grassland, coyote brush scrub, and developed land. No wetlands or waters are present; thus, there would be no impact.

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

Less than Significant. The Project site occupies a slope along a ridge overlooking the Pacific Ocean. The site is bordered by residential development on the east and south, and open space to the west and north. The surrounding open space consists of coastal scrub and shrub/grassland habitat that is accessible for transit by terrestrial wildlife, or use as nursery sites by terrestrial species or birds. With no existing impediments to wildlife movement in the area, the Project site likely provides occasional movement opportunities for black-tailed deer (*Odocoileus hemionus columbianus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*) and other common terrestrial species. The expansion of the fenced tank area would increase the footprint of the Project, but following construction it would not impede the movement of these or other wildlife in the local vicinity. The large surrounding open space areas would remain available for wildlife passage. The Project would not impact any critical corridors and wildlife species would still have the capacity to move around the facility. Furthermore, the Project impact area would be small, in relation to larger surrounding high quality wildlife habitat areas in the open space areas. Impacts would be less than significant, with no mitigation required.

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

No Impact. According to California Government Code sections 53091 and 53096, location or construction of facilities by a local agency related to water storage are not required to comply with city or county building or zoning ordinances. However, discussion regarding the City ordinance has been included for informational purposes.

The City of Pacifica's Protected Tree Ordinance (Ordinance No. 88-C.S.) (2022) lists trees and tree species requiring permit to remove, prune, or relocate above a certain size (typically larger than 12-inches diameter at breast height (dbh) though some species are protected at smaller sizes). Species covered by the ordinance include all trees within the City of Pacifica, heritage trees (including coast live oak, valley oak, California buckeye, Monterey pine, redwood, and Toyon), and groves of 10 or more trees regardless of species.

Because the Project design has not been finalized, the number of trees proposed for removal has not yet been identified. As mentioned above, the District as a public agency is exempt from the City ordinance pursuant to California Government Code sections 53091 and 53096 as the Project would be for water storage and would not develop the Project site; therefore, there would be no impact.

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

No Impact. There are no adopted Habitat Conservation Plans, Natural Conservation Community Plans, or other approved local, regional, or state habitat conservation plans that apply to the Project site. Therefore, no impact would occur.

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3.3.5 Cultural Resources

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

Environmental Setting

Background Research

ESA completed a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) on April 29, 2025 (File No. 24-1715). The review included the APE and a 0.5-mile radius around the APE. The NWIC records search results indicated that no previously recorded cultural resources, including pre-contact archaeological resources and historic-era archaeological or architectural resources, intersect with the APE. Additionally, no cultural resources have been previously recorded within 0.5 mile of the APE.

ESA contacted the NAHC on April 24, 2025, to request a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may be interested in the Project. The NAHC replied to ESA on April 29, 2025 (NAHC, 2025). The NAHC reply indicated that the SLF was positive for sacred lands in the Project vicinity and also included a list of 18 Native American representatives from 7 tribes who may be interested in the Project.

Archaeological Sensitivity Analysis

The underlying geology of the APE consists of Mesozoic and Cenozoic-age bedrock and sandstone deposits and modern-era fill. Based on the age of the soils and bedrock, the potential for buried pre-contact archaeological deposits in undisturbed areas is very low (Meyer and Rosenthal, 2007).

Cultural Resources Pedestrian Survey

On May 12, 2025, ESA archaeologist Melissa Grijalva-Foreman, M.A., completed a five-meter-wide transect pedestrian surface survey of the APE. No pre-contact archaeological resources or other evidence of pre-contact use or occupation were identified during the survey. One architectural resource, Fassler Tank, was recorded and is discussed below.

Fassler Tank

The Fassler Tank was constructed in 1962 with the purpose of storing potable water for distribution to the public. Per the metal casting on each valve, they were produced by the Mueller Co. in Chattanooga, Tennessee, between 1960 and 1961. The Fassler Tank was not previously evaluated.

Archival research did not identify any important event, pattern of events, repeated activity, or other historic trend that is significantly associated with the Fassler Tank. Therefore, the tank does not appear to possess individual significance under the California Register of Historical Resources (California Register) Criterion 1. Archival research did not identify any important person who is significantly associated with the Fassler Tank. Therefore, the tank does not appear to possess individual significance under California Register Criterion 2. The Fassler Tank is an unexceptional example of a municipal water tank. Through archival research and survey, the tank seems to be a typical example of practices and techniques used to construct tanks during the mid-20th century. For these reasons, Fassler Tank does not appear to possess individual significance under California Register Criterion 3. The data potential of a single water tank of unremarkable size and shape is not significant enough to be eligible for inclusion in the California Register Criterion 4. Fassler Tank also does not meet any of the criteria for listing as a San Mateo County Landmark. Based on a site survey, archival research, and the analysis presented above, Fassler Tank does not appear to possess significance under any National Register, California Register, or San Mateo County criteria (see Regulatory Setting for a discussion of each). An assessment of integrity is not applicable. Therefore, Fassler Tank does not qualify as a historical resource under CEQA. Additional information is provided in the confidential cultural resources report completed for the Project (ESA, 2025).

Regulatory Setting

Federal

National Historic Preservation Act of 1966

Historic properties are considered through the National Historic Preservation Act (NHPA), as amended, (United States Code [USC] Title 54 Section 306108) and its implementing regulations (Code of Federal Regulations [CFR] Title 36 Section 800, 36 CFR Section 60, 36 CFR Section 63). The NHPA establishes the federal government's policy on historic preservation and the programs, including the National Register, through which that policy is implemented. Under the NHPA, *historic properties* include "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the [National Register]" (54 USC Section 300308).

Because implementation of the Project would likely require federal permits, as described above, the Project would likely be required to comply with Section 106. It is generally the federal agency's responsibility to consider the effects of the undertaking on historic properties, and to consult with the State Historic Preservation Officer (SHPO), Indian tribes, and other interested parties before granting permits, funding, or other authorization of the undertaking.

Prior to implementing an undertaking (e.g., issuing a federal permit), Section 106 requires federal agencies to consider the effects of the undertaking on historic properties, in consultation with the SHPO, Indian tribes, and other interested parties, and to afford the Advisory Council on Historic Preservation and the SHPO a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing on the National Register. Section 101(d)(6)(A) of the NHPA allows properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization to be determined eligible for inclusion in the National Register.

Under NHPA, a resource is significant if it meets the National Register listing criteria at 36 CFR Section 60.4, as stated below:

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

In addition to meeting one of the above criteria, a resource must also retain integrity to be considered an historic property. Integrity is measured by the degree to which the resource retains its historical attributes and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of changes to the resources.

Certain types of resources are usually excluded from consideration for listing in the National Register but can be considered if they meet special requirements in addition to meeting one or more of the National Register listing criteria. The following seven Criteria Considerations cover resources usually excluded from listing in the National Register: religious resources, moved resources, birthplaces and graves, cemeteries, reconstructed resources, commemorative resources, and resources that have achieved significance within the past 50 years.

State

California Environmental Quality Act

CEQA (codified at California Public Resources Code [PRC] Section 21000 *et seq*.) is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a project would have a significant effect on historical resources, unique archaeological resources, or tribal cultural resources.

The State implements provisions in CEQA through its statewide comprehensive cultural resources surveys and preservation programs. Typically, a resource must be more than 50 years old to be considered as a potential historical resource. The OHP advises recordation of any resource 45 years or older, since there is commonly a five-year lag between resource identification and the date that planning decisions are made.

Historical Resources

CEQA Guidelines (codified at California Code of Regulations [CCR] Section 15000 *et seq*.) recognize that a *historical resource* includes: (1) a resource in the California Register; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or

significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and CCR Section 15064.5 apply. If an archaeological site does not meet the criteria for a historical resource contained in the *CEQA Guidelines*, then the site may be treated in accordance with the provisions of PRC Section 21083, pertaining to unique archaeological resources.

Unique Archaeological Resources

As defined in PRC Section 21083.2, a *unique archaeological resource* is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or,
- Is directly associated with a scientifically recognized important pre-contact or historic event or person.

CEQA Guidelines note that if an archaeological resource is not a unique archaeological, historical resource, or tribal cultural resource, the effects of the project on those cultural resources shall not be considered a significant effect on the environment (CCR Section 15064.5[c][4]).

California Register of Historical Resources

The California Register is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1[a]). The criteria for eligibility for the California Register are based upon the criteria for listing in the National Register (PRC Section 5024.1[b]), as defined above. Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register.

To be eligible for the California Register, a cultural resource must be significant at the local, State, and/or federal level under one or more of the following four criteria:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must be of sufficient age and retain enough of its historic character or appearance (integrity) to convey the reason for its significance. Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register and those formally determined eligible for the National Register;
- California Registered Historical Landmarks from No. 770 onward; and
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (those properties identified as eligible for listing in the National Register, the California Register, and/or a local jurisdiction register);
- Individual historic resources;
- Historic resources contributing to historic districts; and
- Historic resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone; and
- Tribal cultural resources.

California Public Resources Code Sections 5097.98 and 5097.99

PRC Section 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any such artifacts or human remains is guilty of a felony, which is punishable by imprisonment. Any person who removes, without authority of law, any such items with the intent to sell or dissect, or with malice or wantonness, is also guilty of a felony which is punishable by imprisonment. PRC Section 5097.98 (reiterated in CEQA Guidelines Section 15064.5(e)) identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery. PRC Section 5097.99 prohibits obtaining or possessing any Native American artifacts or human remains that are taken from a Native American grave or cairn (stone burial mound).

California Health and Safety Code Section 7050.5

Section 7050.5 of the California Health and Safety Code protects human remains by prohibiting the disinterring, disturbing, or removing of human remains from any location other than a dedicated cemetery. PRC Section 5097.98 (and reiterated in CCR Section 15064.59 [e]) also identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

Native American Heritage Commission

The Native American Heritage Commission (NAHC) was created by statute in 1976, is a nine-member body appointed by the Governor to identify and catalog cultural resources (i.e., places of special religious

or social significance to Native Americans, and known graves and cemeteries of Native Americans on private lands) in California. The Commission is responsible for preserving and ensuring accessibility of sacred sites and burials, the disposition of Native American human remains and burial items, maintaining an inventory of Native American sacred sites located on public lands, and reviewing current administrative and statutory protections related to these sacred sites.

Local

San Mateo County Historic Preservation Ordinance

The San Mateo County Ordinance Code includes Chapter 7, the Historic Preservation Ordinance, which establishes criteria and procedures for designating county historic landmarks and historic districts. The following five local criteria (San Mateo Ordinance Code, Chapter 7, Section 7732) are based upon the criteria for listing on the National Register and California Register. They are:

- The property exemplifies or reflects elements of the County's cultural, social, economic, political, aesthetic, engineering, or architectural history; or
- The property has special aesthetic or artistic interests or values; or
- The property is identified with persons or events significant in local, State, or national history; or
- The property embodies distinctive architectural characteristics of a style, type, period, or method of construction, or is a valuable example of the use of indigenous materials or craftsmanship; or
- The property is representative of the notable work of a master builder, designer, or architect.

Integrity is not a consideration for designation as a county historic landmark or historic district.

City of Pacifica

The City of Pacifica's objective, which is outlined in the General Plan 2040, is to protect community assets, including sites with historical and cultural significance. Cultural resources include prehistoric or archaeological sites, cultural or historic significance properties, or paleontological sites. (City of Pacifica, 2022). Development on archaeologically sensitive sites requires on-site monitoring by appropriate Native American consultant(s) and a qualified archaeologist of all grading, excavation, and site preparation activities that involve earth-moving operations. The plan's policies are provided below:

Guiding Policies

***CO-G-17: Historic and Cultural Sites*.** Conserve designated historic and cultural sites and structures that help define Pacifica's identity and character and increase public awareness and appreciation of them.

***CO-G-18: Ensure Mitigation*.** Require mitigation for any new development that would adversely affect archaeological or paleontological resources.

Implementing Policies

***CO-I-65: Historic Preservation Ordinance*.** Continue to evaluate development projects for their historical significance and preservation value, using the criteria in the Historic Preservation Ordinance.

CO-I-66: Integration of Historic and Cultural Resources with City Identity. Incorporate historic and cultural resources into the City's marketing and branding efforts. Specific initiatives might include:

- Identifying historic sites in the City's wayfinding scheme;
- Giving priority to streetscape and public realm improvements around historic structures that are visitor destinations;
- Hosting/supporting events and educational programs that feature Pacifica's history and promote its relevance; and
- Linking related historical sites through the City's open space and trail system.

CO-I-67: Public Agency Support for Local Historic Sites. Seek support from public agencies, such as GGNRA, for local historic preservation programs for designated sites.

Resource Impact Mitigation

Ensure that new development analyzes and avoids potential impacts to historic, archaeological, and paleontological resources by:

- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historic or archaeological sensitivity; and
- Implementing appropriate measures as a condition of project approval, such as avoidance, preservation in place, and excavation, to reduce or avoid impacts.

In the event that historical, archaeological, or paleontological resources are accidentally discovered during construction, grading activity in the immediate area shall cease, and materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist must make an immediate evaluation and avoidance measures or appropriate mitigation should be completed, according to CEQA Guidelines. The State Office of Historic Preservation has issued recommendations for the preparation of Archaeological Resource Management Reports that may be used as guidelines.

Adaptive Reuse. Promote adaptive reuse of historic structures—preserving their original design and character—as an option for preserving sites that are threatened with demolition or degradation.

Native American Sites. Work with local Native American tribes to protect recorded and unrecorded cultural and sacred sites, and educate developers and the community-at-large about the connections between Native American history and the environmental features that characterize the local landscape.

Discussion

To support the following discussion, ESA prepared a confidential cultural resources technical report (ESA, 2025).

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

No Impact. CEQA Guidelines Section 15064.5 requires the lead agency to consider the effects of a project on historical resources. An historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register, or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California. The following discussion focuses on architectural and structural resources. Archaeological resources, including archaeological resources that are potentially historical resources according to CEQA Guidelines Section 15064.5, are addressed under impact b, below.

Through a records search and background research, one architectural resource was identified in the Project site, the Fassler Tank. Based on the evaluation of the tank presented above and in the confidential cultural resources technical report (ESA, 2025), the Fassler Tank is not eligible for listing in the California Register and does not qualify as a historical resource. Therefore, there are no architectural or structural resources in the Project site that qualify as historical resources, as defined in CEQA Guidelines Section 15064.5 and the Project is not anticipated to impact any historical resources. No mitigation is required.

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

Less than Significant with Mitigation. This section discusses archaeological resources, both as historical resources according to CEQA Guidelines Section 15064.5, as well as unique archaeological resources, as defined in California Public Resources (PRC) (CEQA) Section 21083.2(g). A significant impact would occur if a project would cause a substantial adverse change to an archaeological resource through physical demolition, destruction, relocation, or alteration of the resource.

Based on the results of the background research, records search, pedestrian survey, and archaeological sensitivity assessment, no archaeological resources have been identified in the Project site. The archaeological sensitivity analysis found that the Project site has a low potential for pre-contact and historic-era archaeological resources and a low potential to encounter archaeological resources during ground-disturbing activities.

While unlikely, if any previously unrecorded archaeological resources are identified during Project ground-disturbing activities and were found to qualify as a historical resource per CEQA Guidelines Section 15064.5 or a unique archaeological resource, as defined in PRC (CEQA) Section 21083.2(g), any impacts to the resource resulting from the Project could be potentially significant. The potential significant impact would be reduced to a less-than-significant level with the implementation of **Mitigation Measures CUL-1: Cultural Resources Awareness Training and Mitigation Measure CUL-2: Inadvertent Discovery of Cultural Resources**.

> **Mitigation Measure CUL-1: Cultural Resources Awareness Training**
>
> Before any ground-disturbing and/or construction activities, an archaeologist meeting or under the supervision of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards (SOI PQS) for Archeology shall conduct a training program for all construction and field personnel involved in project-related ground disturbance prior to such personnel conducting

any on-site activities. If a Native American tribe has expressed interest in the Project during tribal consultation, they shall be invited to participate in the training program. The training shall outline the general archaeological sensitivity of the area and the procedures to follow if an archaeological resource and/or human remains are inadvertently discovered during project-related activities.

Mitigation Measure CUL-2: Inadvertent Discovery of Cultural Resources

If pre contact or historic-era archaeological resources are encountered during Project implementation, all construction activities within 100 feet shall halt, and a qualified archaeologist, defined as an archaeologist meeting the U.S. Secretary of the Interior's Professional Qualification Standards for Archeology, shall inspect the find within 24 hours of discovery and notify North Coast County Water District (District) of their initial assessment. Pre-contact archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil ("midden") containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.

If the District determines, based on recommendations from a qualified archaeologist and a Native American representative (if the resource is pre-contact and a tribal government has requested consultation), that the resource may qualify as a historical resource or unique archaeological resource (as defined in CEQA Guidelines Section 15064.5) or a tribal cultural resource (as defined in PRC Section 21080.3) or a historic property (for NHPA purposes), the resource shall be avoided, if feasible. Consistent with Section 15126.4(b)(3), this may be accomplished through planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement.

If avoidance is not feasible, the District shall consult with appropriate Native American tribes (if the resource is pre-contact and a tribal government has requested consultation), and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts to the resource pursuant to PRC Section 21083.2, and CEQA Guidelines Section 15126.4. This shall include documentation of the resource and may include data recovery (according to PRC Section 21083.2), if deemed appropriate, or other actions such as treating the resource with culturally appropriate dignity and protecting the cultural character and integrity of the resource (according to PRC Section 21084.3).

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less than Significant with Mitigation. Based on the records search and survey results, no human remains are known to exist at the Project site. While unlikely, it is possible that human remains could be encountered during construction, which could have a significant impact. The potential significant impact would be reduced to a less-than-significant level with the implementation of **Mitigation Measure CUL-3: Inadvertent Discovery of Human Remains**.

Mitigation Measure CUL-3: Inadvertent Discovery of Human Remains

In the event of discovery or recognition of any human remains during construction activities, all such activities within 100 feet of the find shall cease until the San Mateo County Coroner has been contacted to determine that no investigation of the cause of death is required. The NAHC shall be contacted within 24 hours if the Coroner determines that the remains are Native American.

The NAHC shall then identify the person or persons it believes to be the most likely descendant from the deceased Native American, who, in turn, would make recommendations to USACE for the appropriate means of treating the human remains and any grave goods.

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3.3.6 Energy

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

Environmental Setting

Construction of the Project would require the use of electricity, and the use of fuel for vehicles and equipment, primarily in the form of gasoline and diesel. The following analysis focuses on construction impacts associated with the Project. Potential operational impacts are not anticipated, as the Project would not require additional local or regional capacity; therefore, operational impacts are discussed qualitatively.

Regulatory Setting

Federal

Corporate Average Fuel Economy Standards

Established by the U.S. Congress in 1975, the Corporate Average Fuel Economy (CAFE) standards reduce energy consumption by increasing the fuel economy of cars and light trucks. The National Highway Traffic Safety Administration and U.S. Environmental Protection Agency (USEPA) jointly administer the CAFE standards. Congress has specified that CAFE standards must be set at the "maximum feasible level" with consideration given to (1) technological feasibility; (2) economic practicality; (3) effect of other standards on fuel economy; and (4) the need for the nation to conserve energy. When these standards are raised, automakers respond by creating a more fuel-efficient fleet.

On June 7, 2024, USDOT finalized and updated the CAFE standards for model years 2027–2031. In this final rule, fuel economy will increase 2 percent per year for model year 2027–2031 passenger cars and 2 percent per year for model year 2029–2031 light trucks. These increases will bring the average light-duty vehicle fuel economy up to approximately 50.4 miles per gallon by model year 2031. Fuel efficiency of heavy-duty pickup trucks and vans will increase 10 percent per year for model years 2030–2032 and 8 percent per year for model years 2033–2035 (USDOT 2024).

State

California Renewable Energy Standards

The State of California has adopted regulations to increase the proportion of electricity generated by renewable sources. California's Renewables Portfolio Standard (RPS) program was established in 2002 by Senate Bill (SB) 1078 with the initial requirement that 20 percent of electricity retail sales must be served by renewable resources by 2017. The RPS goal has since been increased several times:

- *2008*: Executive Order S-14-08 increased the goal of the RPS to 33 percent renewable power by 2020.

- *2009*: Executive Order S-21-09 directed the California Air Resources Board (CARB) (acting under its authority established by Assembly Bill 32, the California Global Warming Solutions Act of 2006) to enact regulations to help the state meet the 2020 goal of 33 percent renewable energy. The 33 percent by 2020 RPS goal was codified with the passage of SB X1-2 in 2011. This RPS applied to all electricity retailers in the state: publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators.
- *2015*: SB 350 increased the RPS to 50 percent by 2030, including interim targets of 40 percent by 2024 and 45 percent by 2027.
- *2018*: SB 100 increased California's RPS once more, requiring retail sellers and local publicly owned utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030. It also requires CARB to plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

Senate Bill 100

On September 10, 2018, Governor Jerry Brown signed SB 100, which mandated that all electricity in California be obtained from renewable and zero-carbon energy resources by December 31, 2045. SB 100 also created new standards for the RPS goals established by SB 350 in 2015. Specifically, the law increased the percentage of energy that must come from renewable sources for both investor-owned utilities and publicly owned utilities by 2030 from 50 percent to 60 percent. Incrementally, SB 100 required these energy providers to have a renewable energy supply of 33 percent by 2020, 44 percent by 2024, and 52 percent by 2027. The updated RPS goals are considered achievable because many California energy providers are already meeting or exceeding the RPS goals previously established by SB 350.

On the same day that he signed SB 100, Governor Brown signed Executive Order B-55-18, which established a new statewide goal to achieve carbon neutrality (net zero GHG emissions) by 2045 and to maintain net negative emissions thereafter.

In-Use Off-Road Diesel Fueled Fleets Regulation

Because off-road vehicles used in construction and related industries can last 30 years or longer, most of those that are in service today are part of an older fleet that do not have emission controls. In 2007, CARB approved the In-Use Off-Road Diesel-Fueled Fleets Regulation (Off-Road Regulation) to reduce emissions from existing (in-use) off-road diesel vehicles used in construction and other industries (CARB 2025).[3] The Off-Road Regulation specifies that off-road vehicles 25 horsepower and up may not idle for longer than 5 minutes. It also identifies target emission rates for off-road vehicles, which decline over time to accelerate the rate of turnover to newer, cleaner engines. The primary goal of the In-Use Off-Road Diesel-Fueled Fleets Regulation is to reduce public health impacts from diesel emissions, but compliance also saves energy by reducing fuel consumption for unnecessary idling and by promoting the use of more fuel-efficient engines.

The October 2023 amendments (Amendments) to the Off-Road Regulation were based on the importance of achieving further oxides of nitrogen (NO_x) emissions reductions from the off-road sector, as influenced by CARB's robust on-road regulatory and incentive policies, as well as achieving reductions for diesel

[3] Since its approval in 2007, the Off-Road Regulation has been amended twice in 2009, once in 2010, and most recently on October 1, 2023 (CARB 2025).

particulate matter at a statewide level to reduce the health risk throughout California, especially in communities that experience disproportionate burdens from exposure to toxic air contaminants (CARB 2023). Elements of the Amendments include but are not limited to: (1) phase out of the older and highest-emitting off-road engines from operation in California; and (2) restrict the addition of vehicles with Tier 3 and 4 interim engines (CARB 2023).

Local

City of Pacifica General Plan 2040

The City of Pacifica 2040 General Plan adopted in July 2022, and outlines several policies intended for energy conservation within the City. These policies are directed towards renewable energy resources, energy conservation, and waste reduction (City of Pacifica 2022). There are no policies pertaining to the Project.

Discussion

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less than Significant.

Construction

During Project construction, energy use would be both direct and indirect. Direct energy use would include the consumption of fuel (typically gasoline and diesel fuel) for the operation of construction equipment and vehicles. Energy in the form of electricity may also be consumed by some pieces of construction equipment, such as welding machines, power tools, lighting, etc.; however, the amount of consumed electricity would be relatively minimal in comparison to gasoline and diesel usage. Indirect energy use would include the energy required to make the materials and components used in construction. This includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing.

CEQA focuses on the efficient use of energy rather than a quantification of the actual amount of energy consumed. Construction activities within the Project site are expected to last approximately 15 months. Construction activities would include use of heavy-duty construction equipment on-site and off-site vehicles to transport equipment, materials, and workers to the Project site.

Energy use requirements in the form of diesel fuel consumed by on-site off-road construction equipment have been estimated based on the GHG emissions estimates from the California Emissions Estimator Model (CalEEMod), version 2022.1.1, modeling conducted for the Air Quality and GHG analysis (Appendix A). For on-road construction vehicles, the analysis assumes that light-duty automobiles and trucks used by commuting workers would be fueled by gasoline, and that on-road construction vehicles, such as vendor vehicles and trucks hauling demolition debris, soil, and other materials, would use diesel fuel. This analysis assumes that no electric on-road vehicles would be used during Project construction. The quantities of fuels required by on-road vehicles during construction have been calculated based on the GHG emissions associated with commuting workers and vendor and haul trips. GHG emissions

associated with commuting haul trips were estimated using information provided by the Applicant, trip counts for workers and vendors were estimated using CalEEMod defaults (Appendix A).

The Project's construction activities would consume energy primarily in the form of transportation fuels (e.g., diesel and gasoline) used by haul trucks; heavy-duty equipment, such as excavators, forklifts, and loaders; and worker vehicles operating at the Project site and traveling to and from the construction area. Electricity consumed by any electric-powered equipment would be minimal relative to the amount of diesel and gasoline consumed. Energy use would vary throughout the construction period based on the construction activities being performed and would cease upon the completion of construction. Project construction activities would not involve the consumption of natural gas.

Heavy-duty equipment associated with construction of the Project would rely on diesel fuel, as would vendor trucks involved in delivery of equipment and materials to the Project site and haul trucks exporting materials off site. Construction worker trips to and from the Project site would primarily be gasoline powered. All equipment used in Project construction would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation imposes a 5-minute limit on idling so as to reduce unnecessary use of energy.

Over the duration of Project construction, it is estimated that approximately 47,654 gallons of diesel and 831 gallons of gasoline would be used. The diesel and gasoline use for construction activities would be temporary and constitute a 0.34 percent and less than 0.01 percent of the 14 million gallons of diesel and 271 million gasoline sold in San Mateo County in 2023, respectively (CEC 2025). Therefore, the construction energy demand of the Project would be within the infrastructure service capabilities of regional suppliers and would not require additional local or regional capacity. The amount, form, and use of energy required for construction activities would not be wasteful, inefficient, or unnecessary. Therefore, construction of the Project would not result in the wasteful, inefficient, and unnecessary consumption of energy, and impacts associated with transportation fuels for construction of the Project would be less than significant**.**

Operation

Upon completion of Project construction, and after the tank is commissioned and operational, the Project would not result in an increase in required maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, additional truck trips resulting from maintenance of the tanks and appurtenances would be negligible. The operational energy demand of the Project would be within the infrastructure service capabilities of regional suppliers and would not require additional local or regional capacity. The amount, form, and use of energy required for operational activities would not be wasteful, inefficient, or unnecessary. Therefore, operation of the Project would not result in the wasteful, inefficient, and unnecessary consumption of energy, and impacts associated with operations would be less than significant.

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

Less than Significant.

Construction and Operation

As discussed above, construction equipment used for the Project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits); (5) requires the phase-out of the oldest and dirties engines starting on January 1, 2024; (6) requires the procurement and use of renewable diesel (R99 or R100) starting January 1, 2024, with limited exceptions; and (7) requires contracting entities to obtain valid Certificates of Reported Compliance for all listed contractors and subcontractors for contract work where vehicles subject to the Off-Road Regulation would operate (CARB 2025).

Construction activities would use fuel-efficient equipment consistent with federal and state regulations, such as fuel efficiency regulations in CARB's Pavley Phase II standards; the anti-idling regulation in 13 CCR Section 2485; and fuel requirements for stationary equipment in 17 CCR Section 93115 (concerning the Airborne Toxic Control Measures). In accordance with 13 CCR Sections 2485 and 2449, idling by commercial vehicles over 10,000 pounds and off-road equipment over 25 horsepower would be limited to a maximum of five minutes. The intent of these regulations is to reduce construction emissions; however, compliance with the anti-idling and emission reduction regulations discussed above would also result in fuel savings from the more efficient use of equipment.

Upon completion of Project construction, and after the tank is commissioned and operational, the Project would not result in an increase in required maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, energy associated with operational vehicle trips would remain similar to existing conditions and would be negligible.

Therefore, construction and operation of the Project would be consistent with all applicable plans, policies and regulations developed to encourage energy conservation and renewable energy use. The impact would be less than significant**.**

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3.3.7 Geology and Soils

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
GEOLOGY AND SOILS — Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to 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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Environmental Setting

The Project site is located approximately 1.5 miles from the coast and is at approximately 700 feet AMSL at the tank location to 600 feet AMSL at the Ahni Trail Head. A geotechnical report was prepared by Miller Pacific Engineering Group for the Project (which is attached as Appendix A to the Fassler Tank Siting Study Prepared by Brown and Caldwell; Brown and Caldwell 2023). The geotechnical report found that the Project site is located within the Coast Range Geomorphic Province of California. The regional bedrock geology of this province consists of the complexly folded, faulted, sheared, and altered sedimentary, igneous, and metamorphic rock of the Jurassic-Cretaceous age (65-190 million years ago) Franciscan Complex. Bedrock of the Franciscan Complex is characterized by a diverse assemblage of greenstone, sandstone, shale, chert, and mélange, with lesser amounts of conglomerate, calc-silicate rock, schist, and other metamorphic rocks (Brown and Caldwell 2023).

Regional geologic maps indicate the Project site is underlain by greenstone bedrock (fg). Adjacent slopes to the south of the site are mapped as sandstone and shale bedrock (fs) and adjacent slopes to the west are mapped as colluvial soils (Qcl). The greenstone unit is described as dark-green to red, altered basaltic rock

and related intrusive rock. The sandstone and shale unit are described as greenish-gray to buff, fine- to coarse-grained sandstone with interbedded siltstone and shale. Colluvial soils generally consist of loose to firm, unsorted sand, silt, clay, and gravel in varying proportions. The geotechnical report determined that the Project site varies from regional maps and subsurface investigation encountered about 2- to 2.5-feet of stiff sandy clay colluvial soils over highly weathered, interbedded sandstone and siltstone bedrock; greenstone bedrock was not encountered. (Brown and Caldwell 2023).

The geotechnical report found that no landslides are shown on regional maps close to the Project site and the risk of damage to new improvements due to landsliding was determined to be low; however, the Report noted existing steep slopes may be susceptible to shallow sloughing and raveling (Brown and Caldwell 2023). Ground movement during an earthquake can vary depending on the overall magnitude, distance to the fault, focus of earthquake energy, and type of geologic material. The composition of underlying soils, even those relatively distant from faults, can intensify ground shaking. The strongest ground shaking anticipated to occur near the City of Pacifica would come from the San Andreas Fault and could cause strong to very violent ground shaking (City of Pacifica 2022). The geotechnical report determined Project site-specific ground shake potential to be strong (Brown and Caldwell 2023).

The Project site is near the San Andreas Fault located approximately two miles to the northeast which runs northwest to southeast (DOC 2025a). According to the California Department of Conservation' (DOC) Earthquake Zones of Required Investigation map, the Project site is not within a fault or liquefaction zone but is within a designated landslide zone (DOC 2025b).

The Project site lies on several soil types including: 105 Barnabe-Candlestick complex 30 to 75 percent slopes; 110, 105 Barnabe-Kron-Buriburi complex 30 to 75 percent slopes; and Orthents, cut and fill-Urban land complex 5 to 75 percent slopes (NRCS 2025). The soils were described in the geotechnical report to be low plasticity sandy clay and siltstone/sandstone bedrock, and it was determined the risk of expansive soil/bedrock at the project site is low (Brown and Caldwell 2023).

As discussed above, the Project site is underlaid by Franciscan Complex which is 65-190 million years old and is generally composed of a layer of colluvial soils underlaid by sandstone/siltstone bedrock. The Society of Vertebrate Paleontologists (SVP) defines colluvial soils as having a low potential to contain paleontological resources but defines sandstones and other sedimentary rocks as having a high potential. Further, the SVP defines sedimentary units older than 5,000 years to have the potential to contain paleontological resources (SVP 2010). Paleontological resources or prehistoric fossils have been discovered in San Mateo County; examples of these resources have been discovered in exposed bluffs above the ocean bench along the coast. These sites contained molluscan fossils from the Pleistocene Period (County of San Mateo 1986). As such there is the potential of encountering unknown paleontological resources at the Project site increasing with depth.

Regulatory Setting

See Section X, *Hydrology and Water Quality*, for discussion on statutes, regulations, plans, or policies specific to erosion and water quality.

Federal

National Earthquake Hazards Reduction Act of 1977

The National Earthquake Hazards Reduction Act of 1977 (Public Law 95-124) created the National Earthquake Hazards Reduction Program (NEHRP), establishing a long-term earthquake risk reduction program to better understand, predict, and mitigate risks associated with seismic events. Four federal agencies are responsible for coordinating activities under the NEHRP: the U.S. Geological Survey, National Science Foundation, Federal Emergency Management Agency, and National Institute of Standards and Technology. Since its inception, the NEHRP has shifted its focus from earthquake prediction to hazard reduction. The current program objectives are as follows:

- Improve understanding of earthquake processes and impacts.
- Develop cost-effective measures to reduce earthquake impacts on individuals, the built environment, and society at large.
- Improve the earthquake resilience of communities nationwide.

Implementation of NEHRP objectives is accomplished primarily through original research, publications, and recommendations and guidelines for local, regional, and state agencies in the development of plans and policies to promote safety and emergency planning.

State

California Building Code (CBC)

The Project would be subject to the applicable sections of CBC Title 24, Part 2, which is administered by the California Building Standards Commission. Under state law, all building standards must be centralized in Title 24 to be enforceable. The CBC contains necessary California amendments, which are based on American Society of Civil Engineers/Structural Engineering Institute Standards. These standards provide requirements for general structural design and include means for determining earthquake loads, as well as other loads for inclusion into building codes. The earthquake design requirements take into account the occupancy category of the structure, site class, soil classifications, and various seismic coefficients, which are used to determine a seismic design category for a project. Once a project is categorized according to a seismic design category, design specifications can be determined. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure—or any appurtenances connected or attached to such buildings or structures—throughout California.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act was enacted in 1972 to protect human-occupied structures from the hazard of surface faulting. In accordance with this law, the State Geologist has established regulatory zones called *earthquake fault zones* around the surface traces of active faults and has published maps showing these zones. Buildings for human occupancy cannot be constructed across surface traces of faults that are determined to be active. Because many active faults are complex and consist of more than one branch that may experience ground surface rupture, earthquake fault zones extend approximately 200–500 feet on either side of the mapped fault trace.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code Sections 2690–2699.6) directs the California Geologic Survey to identify and map areas prone to liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of this program is to minimize the loss of life and property through the identification, evaluation, and mitigation of seismic hazards. Seismic Hazard Zone Maps that identify Zones of Required Investigation have been generated as a result of the program. Cities and counties are then required to use the Seismic Hazard Zone Maps in their land use planning and building permit processes.

California Environmental Quality Act (CEQA)

CEQA requires that public agencies and private interests identify the potential environmental consequences of their projects on any object or site of significance to the scientific annals of California (Public Resources Code Division I, Section 5020.1[b]). Appendix G of the CEQA Guidelines provides an Environmental Checklist of questions that includes the following: "Would the project directly or indirectly destroy a unique paleontological resource or site?"

CEQA does not define a "unique paleontological resource or site." However, the Society of Vertebrate Paleontology has provided guidance specifically designed to support state and federal environmental review. The Society of Vertebrate Paleontology broadly defines *significant paleontological resources* as follows (SVP 2010):

> *[F]ossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are considered to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years).*

Significant paleontological resources are determined to be fossils or assemblages of fossils that are unique, unusual, rare, or diagnostically important, or are common but have the potential to provide valuable scientific information for evaluating evolutionary patterns and processes, or which could improve researchers' understanding of paleo-chronology, paleo-ecology, or depositional histories. New or unique specimens can provide new insights into evolutionary history; however, additional specimens of even well-represented lineages can be equally important for studying evolutionary pattern and process, and evolutionary rates. Even unidentifiable material can provide useful data for dating geologic units if radiocarbon dating is possible. As such, common fossils (especially vertebrates) may be scientifically important, and therefore considered significant.

California Public Resources Code Section 5097.5

Public Resources Code Section 5097.5 states the following:

> *No person shall knowingly and willfully excavate upon, or remove, destroy, injure, or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological, or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.*

As used in Section 5097.5, *public lands* are defined as lands owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.

Local

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to geology and soils, listed below (City of Pacifica 2022).

Conservation Element

Guiding Policies

***CO-G-18: Ensure Mitigation*.** Require mitigation for any new development that would adversely affect archaeological or paleontological resources.

Implementing Policies

***CO-I-68: Resource Impact Mitigation*.** Ensure that new development analyzes and avoids potential impacts to historic, archaeological, and paleontological resources by:

- Requiring a records review for development proposed in areas that are considered archaeologically or paleontologically sensitive;
- Requiring pre-construction surveys and monitoring during any ground disturbance for all development in areas of historic or archaeological sensitivity; and
- Implementing appropriate measures as a condition of project approval—such as avoidance, preservation in place, and excavation,—to reduce or avoid impacts.

In the event that historical, archaeological, or paleontological resources are accidentally discovered during construction, grading activity in the immediate area shall cease and materials and their surroundings shall not be altered or collected. A qualified archaeologist or paleontologist must make an immediate evaluation and avoidance measures or appropriate mitigation should be completed, according to CEQA Guidelines. The State Office of Historic Preservation has issued recommendations for the preparation of Archaeological Resource Management Reports that may be used as guidelines.

Safety Element

Guiding Policies

***SA-G-1: Reduce Risk*.** Minimize risks of property damage and personal injury posed by geologic and seismic hazards.

Implementing Policies

***SA-I-4: Code Enforcement*.** Continue to maintain and enforce appropriate standards to ensure new development is designed to meet current safety standards associated with seismic activity.

***SA-I-7: Erosion Prevention*.** Require erosion prevention of hillside areas by revegetation or other acceptable methods.

***SA-I-8: Geotechnical Studies*.** Within the Coastal Zone and hillside areas, continue to require geotechnical site investigation for proposed development on sites located in any of the following areas, prior to allowing site development:

- On slopes greater than 15 percent.
- In areas showing evidence of landslides or landslide potential.
- In areas showing evidence of ground shaking or earth movement
- Within 50 feet of a coastal bluff
- Within sand dune areas.

Geotechnical studies shall identify any geologic hazards affecting a proposed project site, any necessary mitigation measures, and a statement of the site's suitability for the proposed development and whether or not it will be safe from geologic hazard for its expected life. The study shall identify net developable areas, if any, based on landslide or ground shaking potential and/or erosion risk. Impacts from the development, such as those resulting from increased water runoff, shall also be determined. Such studies must be signed by a licensed Certified Engineering Geologist or Geotechnical Engineer and are subject to review and approval by City staff and/or contracted employees. As detailed in Policy further technical reports may be required for applicable projects.

***SA-I-10: Soil Study*.** Require any geotechnical studies to include study of expansive and creeping soils, as well as analysis of erosion, seismic, tsunami, and other geotechnical hazards and make recommendations, as warranted.

Discussion

a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

a.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

No Impact. The State Alquist-Priolo Earthquake Fault Zoning Act prohibits the development of structures for human occupancy across active fault traces. Under this Act, the California Geological Survey has established "Zones of Required Investigation" on either side of an active fault that delimits areas susceptible to surface fault rupture. The zones are referred to as Earthquake Fault Zones (EFZs) and are shown on official maps published by the California Geological Survey. Surface rupture occurs when the ground surface is broken due to a fault movement during an earthquake; typically, these types of hazards occur within 50 feet of an active fault.

The Project site does not lie within any mapped EFZs according to the available data (DOC 2025b). Although the area could be affected by earthquakes or seismic ground shaking, there is no current data

available indicating the presence of active faults within the Project site. The nearest EFZ is the San Andreas fault zone, approximately two miles to the northeast of the Project site (DOC 2025a). The Project does not include any habitable structures and would not expose people or structures to potential substantial adverse effects associated with rupture of a known earthquake fault. There would be no impact related to surface fault rupture.

a.ii) Strong seismic ground shaking?

Less than Significant. The Project site is located in a historically seismically active region of California. The 2014 Working Group on California Earthquake Probabilities (WGCEP) concluded that there is a 72 percent probability that a magnitude (MW) 6.7 earthquake or higher will strike the San Francisco Bay Area before the year 2045 (Field et al., 2015). As discussed above, there are no known faults that intersect the Project site; however, there are two significant fault systems in the region: The San Andreas and Hayward fault zones (DOC 2025b). The closest of these fault systems is the San Andreas fault zone, approximately two miles northeast of the Project site.

The Project site may be subject to potentially violent to severe seismic ground shaking due to the Project site's proximity to the San Andreas fault zone. Strong seismic ground shaking occurring at the Project site could result in potential damage to the proposed tank and potential adverse effects to the surrounding residences.

The Project would be subject to the seismic design criteria of the California Building Code (CBC), which requires that all improvements be constructed to withstand anticipated ground shaking from regional fault sources. As previously mentioned, a geotechnical report has been prepared for the Project; the risk of seismically induced ground shaking at the Project site was determined to be strong (Brown and Caldwell 2023). As such, the Report includes design recommendations for Project components to withstand probable seismically induced ground shaking and hazards. All construction on-site would adhere to the specifications and procedures contained in the geotechnical report in accordance with the CBC.

Adherence to the applicable CBC requirements would ensure the Project would not directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, impacts would be less than significant.

a.iii) Seismic-related ground failure, including liquefaction?

No Impact. Liquefaction is a phenomenon in which unconsolidated, water saturated sediments become unstable because of strong seismic shaking. During an earthquake, these sediments can behave like a liquid, potentially causing severe damage to overlying structures. Lateral spreading is a variety of minor landslide that occur when unconsolidated liquefiable material breaks and spreads because of gravity, usually down gentle slopes. Liquefaction-induced lateral spreading is defined as the finite, lateral displacement of gently sloping ground as a result of pore-pressure buildup or liquefaction in a shallow underlying deposit during an earthquake. The occurrence of this phenomenon is dependent on many complex factors, including the intensity and duration of ground shaking, particle-size distribution, and density of the soil.

The potential damaging effects of liquefaction include differential settlement, loss of ground support for foundations, ground cracking, heaving, and cracking of structure slabs due to sand boiling, and buckling

of deep foundations due to ground settlement. Dynamic settlement (i.e., pronounced consolidation and settlement from seismic shaking) may also occur in loose, dry sands above the water table, resulting in settlement of and possible damage to overlying structures. In general, a relatively high potential for liquefaction exists in loose, sandy soils that are within 50 feet of the ground surface and are saturated (below the groundwater table). Lateral spreading can move blocks of soil, placing strain on buried pipelines that can lead to leaks or pipe failure.

As discussed above in the *Environmental Setting* section, according to the DOC's Earthquake Zones of Required Investigation map, the Project site is not within a liquefaction zone (DOC 2025b). Further, the geotechnical report prepared for the Project determined that liquefaction would be unlikely to occur at the Project site and determined there would be no significant impacts; no specific design recommendations were recommended (Brown and Caldwell 2023).

Compliance with CBC requirements including local agency enforcement would further reduce or avoid impacts related to ground failure, including liquefaction. Project construction would not directly or indirectly result in adverse effects related to ground failure, including liquefaction, and no impacts would occur.

a.iv) Landslides?

Less than Significant. Landslides are one of the various types of downslope movements in which rock, soil, and other debris are displaced due to the effects of gravity. The potential for material to detach and move down slope depends on multiple factors including the type of material, water content, and steepness of terrain.

The construction of the proposed water tank would include clearing, grading, and excavation of the hillside to accommodate the Project components. Clearing for the Project would include the removal of several trees within the Project site which could increase erosion thereby increasing the chance that landslide would occur. The geotechnical report was prepared for the Project found that no landslides are shown on regional maps close to the Project site and the risk of damage to new improvements due to landsliding was determined to be low; however, the geotechnical report noted existing steep slopes may be susceptible to shallow sloughing and raveling (Brown and Caldwell 2023). However, according to the DOC's Earthquake Zones of Required Investigation map, the Project site is within a designated landslide zone (DOC 2025b). Coupled with the planned construction activities, including tree removal, the risk of landslides caused by Project construction or earthquake-induced landslides is possible. If appropriate structural and geotechnical engineering measures are not included in the design of the water tank, this would be a significant impact.

As stated above, a geotechnical report has been prepared for the Project which includes design requirements that would inform the structural and geotechnical engineering of the Project, as required by the CBC. Implementation of these measures in accordance with building code requirements would reduce potential hazards associated with earthquake-induced landslides. As such, the Project would not directly or indirectly result in adverse effects related to landslides, and the impact would be less than significant.

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

Less than Significant. Sandy soils on moderate slopes or clayey soils on steep slopes are susceptible to erosion when exposed to concentrated water runoff (i.e. soils at the Project site). The Project would include ground-disturbing activities that could increase the risk of erosion or sediment transport, if not managed appropriately. Project construction would involve grading steep slopes and could result in soil erosion during excavation, grading, and soil stockpiling.

As discussed in Section X, *Hydrology and Water Quality*, Contractors would follow standard construction specifications to control the potential for any localized erosion from construction activities. Additionally, best management practices (BMP) for construction activities would be required by the City of Pacifica pursuant to Chapter 12 of the Municipal Code (Storm Water Management and Discharge Control). Further, since this project would include ground disturbance, contractors would be required to comply with the National Pollutant Discharge Elimination System (NPDES) construction general permit with its required preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) to control stormwater runoff through the implementation of erosion control BMPs such as installing a silt fence, creating a sediment/desilting basin, installing sediment traps, using fiber rolls, creating gravel bag berms, and creating sandbag or straw bale barriers.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time.

As discussed in Section X, *Hydrology and Water Quality*, the District has designed the Project to minimize land disturbance and impervious surface coverage and has incorporated several bioretention basins into the Project design to retain stormwater flows and minimize potential runoff from the proposed impervious surfaces, and thereby reducing potential erosion, consistent with requirements of Provision C.3 of the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES Permit.

No waste or discharge would be generated at the Project site, unless resulting from an unanticipated major repair or overflow event. During these events, consistent with Section 6-12.202 of the City of Pacifica's Stormwater Ordinance, water would discharge into a catch basin west of the proposed tank and convey the water to the existing drain/overflow discharge outfall. The drainage flows towards Rockaway Beach through an unnamed drainage channel. A tank wall drain would surround the tank and convey water that collects in the ground near the tank walls away to the drainage outfall thereby reducing any possible erosion from standing water.

Compliance with the SWPPP, construction BMPs as required by the City of Pacifica, and installation of site stormwater management and drainage feature would ensure that impacts related to erosion and soil loss would be less than significant

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?

Less than Significant. As discussed in Impact a.iii, the Project site is in an area of low liquefaction susceptibility; this conclusion is supported by the findings presented in the geotechnical report prepared for the Project as well as mapping by the DOC pursuant to the Alquist-Priolo Earthquake Fault Zoning Act.

Further, as discussed in Impact a.iv, the Project site is in an area that is susceptible to landslides; this conclusion is supported by the findings presented in the geotechnical report prepared for the Project as well as mapping by the DOC pursuant to the Alquist-Priolo Earthquake Fault Zoning Act, coupled with the activities associated with Project construction, include tree removal from the Project site and ground disturbance.

However, as discussed above, compliance with the engineering designs included in the geotechnical report and the requirements of the CBC would reduce any potential hazards associated with liquefaction, landslides, and other hazards associated with unstable soils; therefore, this impact would be considered less than significant.

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?

Less than Significant. Expansive soils are soils that possess a "shrink-swell" characteristic. Shrink-swell is the cyclic change in volume (expansion and contraction) that occurs in fine-grained clay sediments from the process of wetting and drying; the volume change is reported as a percent change for the whole soil.

The Project site lies on several soil types including: 105 Barnabe-Candlestick complex 30 to 75 percent slopes; 110, 105 Barnabe-Kron-Buriburi complex 30 to 75 percent slopes; and Orthents, cut and fill-Urban land complex 5 to 75 percent slopes (NRCS 2025). The geotechnical report prepared for the Project described these soils to be low plasticity sandy clays and siltstone and sandstone bedrock and the risk of expansive soil and bedrock at the project site was determined to be low (Brown and Caldwell 2023).

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

No Impact. No septic tanks or alternative wastewater disposal systems are needed or proposed for the Project. Therefore, no impact would occur with regard to soils supporting septic tanks or alternative wastewater disposal systems.

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

Less than Significant with Mitigation. Paleontological resources are the fossilized remains of plants and animals, including vertebrates (animals with backbones; mammals, birds, fish, etc.), invertebrates (animals

without backbones; starfish, clams, coral, etc.), and microscopic plants and animals (microfossils), and can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, non-renewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. A significant impact would occur if a project would destroy a unique paleontological resource or site, or a unique geologic feature.

In its "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources," the Society of Vertebrate Paleontology (SVP) defines four categories of paleontological potential for rock units: high, low, undetermined, and no potential: High Potential, rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered are considered to have a high potential for containing additional significant paleontological resources; Low Potential, rock units that are poorly represented by fossil specimens in institutional collections, or based on general scientific consensus only preserve fossils in rare circumstances and the presence of fossils is the exception not the rule; Undetermined Potential, rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment; and No Potential, rock units like high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites) that would not preserve fossil resources (SVP, 2010).

As discussed in the *Environmental Setting* section, the Project site is underlaid by Franciscan Complex which is 65-190 million years old and is generally composed of a layer of colluvial soils underlaid by sandstone/siltstone bedrock. The SVP defines colluvial soils as having a low potential to contain paleontological resources but defines sandstones and other sedimentary rocks as having a high potential. Further, the SVP defines sedimentary units older than 5,000 years to have the potential to contain paleontological resources (SVP 2010). Paleontological resources or prehistoric fossils have been discovered in San Mateo County; examples of these resources have been discovered in exposed bluffs above the ocean bench along the coast. These sites contained molluscan fossils from the Pleistocene Period (County of San Mateo 1986). As such there is the potential of encountering unknown paleontological resources at the Project site increasing with depth.

The Project site is located in an area which has been subject to previous development including the construction of the existing Fassler Tank and access road, and the Ahni Trail and associated parking lot and Trail Head; additionally, there are nearby neighborhoods, streets, and associated sub-surface infrastructure. As such, any paleontological resources generally would not be present at or immediately under the Project site because these materials would have been excavated and disturbed during construction of the existing development discussed above. Paleontological resources that were present at that time, if any, would likely have been removed or destroyed at that time.

However, as discussed in Section 2.4, Project Components, a 20-foot-deep ground monitoring well would be constructed up gradient and down gradient of the tank, per requirements from the state. As discussed above, paleontological sensitivity at the Project site would likely increase with depth. As such there is the possibility that Project construction activities could encounter previously undisturbed materials which could contain undiscovered paleontological resources. The Project would implement **Mitigation Measure GEO-1: Unanticipated Discoveries of Paleontological Resources**, which would implement procedures to follow in the event of a discovery, and protocols for the inadvertent discovery of paleontological resources.

Therefore, implementation of **Mitigation Measure GEO-1** would reduce these impacts to a less than significant level.

> **Mitigation Measure GEO-1: Unanticipated Discoveries of Paleontological Resources**
>
> In the event of the unanticipated discovery of paleontological resources, the Applicant or its contractor shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until it can be assessed for significance by the Qualified Paleontologist. The Qualified Paleontologist shall assess the find, implement recovery and reporting measures, if necessary, and determine if paleontological monitoring is warranted once work resumes.

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3.3.8 Greenhouse Gas Emissions

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

Environmental Setting

Greenhouse gases (GHGs) trap heat in the atmosphere by preventing some of the solar radiation that hits the earth from being reflected back into space. Some GHGs occur naturally and are needed to keep the earth's surface habitable. However, over the past 100 years, human activities have substantially increased the concentration of GHGs in our atmosphere. This has intensified the natural greenhouse effect, increasing average global temperatures.

Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), perfluorocarbons (PFCs), and hydrofluorocarbons (HFCs) are the principal GHGs. When concentrations of these gases exceed historical concentrations in the atmosphere, the greenhouse effect is intensified. CO_2, CH_4, and N_2O occur naturally and are also generated through human activity. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing, natural gas leaks from pipelines and industrial processes, and incomplete combustion associated with agricultural practices, landfills, energy providers, and other industrial facilities. N_2O emissions are also largely attributable to agricultural practices and soil management. Other human-generated GHGs include fluorinated gases such as HFCs, PFCs, and SF_6, which have much higher heat-absorption potential than CO_2 and are byproducts of certain industrial processes.

CO_2 is the reference gas for climate change, as it is the GHG emitted in the highest volume. The effect that each of the GHGs have on global warming is the product of the mass of their emissions and their global warming potential (GWP). GWP indicates how much a gas is predicted to contribute to global warming relative to how much warming would be predicted to be caused by the same mass of CO_2. For example, $CH_4$and N_2O are substantially more potent GHGs than CO_2, with GWPs of 25 and 298 times that of CO_2 respectively, which has a GWP of 1 (CARB 2025).

In emissions inventories, GHG emissions are typically reported as metric tons of CO_2 equivalent ($MTCO_2e$). CO_2e is calculated as the product of the mass emitted of a given GHG and its specific GWP. While $CH_4$and N_2O have much higher GWPs than CO_2, CO_2 is emitted in higher quantities and it accounts for the majority of GHG emissions in CO_2e, both from commercial developments and human activity in general.

Regulatory Setting

State

A variety of statewide rules and regulations mandate the quantification and, if emissions exceed established thresholds, the reduction of GHGs. CEQA requires lead agencies to evaluate project-related GHG emissions and the potential for projects to contribute to climate change and to provide appropriate mitigation in cases where the lead agency determines that a project would result in a significant addition of GHGs to the atmosphere. Below is a discussion of other state programs, regulations, plans, and goals designed to reduce GHG emissions.

Executive Order S-3-05

In June 2006, Governor Arnold Schwarzenegger signed Executive Order S-3-05, which established the following statewide emission-reduction targets through the year 2050:

- By 2010, reduce GHG emissions to 2000 levels;
- By 2020, reduce GHG emissions to 1990 levels; and
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

This executive order does not contain any requirements that directly pertain to the Project; however, future actions taken by the State of California and the BAAD to implement these goals may affect the Project, depending on the specific measures that are developed and their timeline of implementation.

Executive Order B-55-18

In September 2018, Governor Brown signed Executive Order B-55-18, committing California to total, economy-wide carbon neutrality[4] by 2045. Executive Order B-55-18 directs the California Air Resources Board (CARB) to work with relevant state agencies to develop a framework to implement accounting to track progress toward this goal. The goal will be incorporated into future Scoping Plans, as policies and actions which affect major sectors of California's economy, including transportation, agriculture, development, industrial, and others. This executive order does not contain any requirements that would need to be implemented at the project level. The carbon neutrality requirements would be implemented on a regional and local level through regional electricity providers and vehicle and equipment standards.

Assembly Bill 32 and the Climate Change Scoping Plan

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, required CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emissions levels. AB 32 required CARB to adopt regulations that identify and require selected sectors or categories of emitters of GHGs to report and verify their statewide GHG emissions; CARB is authorized to enforce compliance with the program. Under AB 32, CARB was also required to adopt a statewide GHG emissions limit equivalent to the statewide GHG emissions levels in 1990, which had to be achieved by 2020. CARB established this limit in December 2007 at 427 million $MTCO_2e$ (CARB 2008).

4 Having a net zero carbon footprint, refers to achieving net zero carbon dioxide emissions by balancing carbon emissions with carbon removal (often through carbon offsetting) or simply eliminating carbon emissions altogether (the transition to the "post-carbon economy").

In December 2008, CARB approved the Climate Change Scoping Plan, also known as the AB 32 Scoping Plan, which outlined the State of California's strategy to achieve the 2020 GHG emissions limit by reducing 174 million $MTCO_2e$ (about 191 million tons) of emissions across various sectors. The plan proposed to reduce GHG emissions, improve the environment, reduce dependence on oil, diversify energy sources, save energy, create new jobs, and enhance public health. The Scoping Plan was to be updated every 5 years to evaluate the mix of AB 32 policies and remain on track to achieve reduction goals. It included 39 recommended measures. CARB released its first Scoping Plan Update in May 2014 and 2017, and subsequent updates in 2022, as described below.

Executive Order B-30-15 and SB 32

In April 2015, Governor Brown issued an Executive Order B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. Reaching this emission reduction target will facilitate California in reaching its ultimate goal of reducing emissions 80 percent under 1990 levels by 2050, as identified in Executive Order S-3-05.

Subsequently, Senate Bill (SB 32), which codifies the Executive Order's 2030 emissions reduction target, was approved by the Governor on September 8, 2016. SB 32 requires CARB to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions to ensure that statewide GHG emissions are reduced to at least 40 percent below the 1990 statewide GHG emissions limit no later than December 31, 2030.

Assembly Bill 1279 (California Climate Crisis Act)

Signed into law in September of 2022, AB 1279 requires the State to achieve two things by 2045 or sooner: 1) net zero GHG emissions; and 2) a reduction in statewide anthropogenic GHG emissions of 85 percent below 1990 levels. AB 1279 requires CARB to ensure that the 2022 Scoping Plan, described further below, identifies and recommends measures to achieve carbon neutrality, and to identify and implement policies and strategies for CO_2 removal and carbon capture, utilization, and storage technologies.

2022 Scoping Plan for Achieving Carbon Neutrality

The 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan), adopted by CARB in December 2022, expands on prior Scoping Plans and responds to AB 1279 by outlining a technologically feasible, cost-effective, and equity-focused path to achieve the State's climate target of reducing anthropogenic emissions to 85 percent below 1990 levels and achieving carbon neutrality by 2045 or earlier (CARB 2022). The actions and outcomes in the plan will achieve significant reductions in fossil fuel combustion by deploying clean technologies and fuels, further reductions in short-lived climate pollutants, support for sustainable development, increased action on natural and working lands to reduce emissions and sequester carbon, and the capture and storage of carbon.

The 2022 Scoping Plan identifies a construction equipment sector action for the Scoping Plan Scenario that commits to 25 percent of energy demand to be electrified by 2030 and 75 percent electrified by 2045 (CARB 2022). Since construction of the Project would be completed prior to 2030, this construction equipment sector action is not directly applicable to the Project.

Regional

Bay Area Air Q District CEQA Guidelines

The BAAD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed in the Bay Area. The guidelines also include recommended assessment methods for air toxics, odors, and GHG emissions.

In April 2022, in response to SB 32 and 2017 Scoping Plan Update targets for 2030 and EO B-15 target for carbon neutrality no later than 2045, the BAAD adopted updated CEQA significance thresholds for GHGs and included them in the 2023 update to the BAAD CEQA Guidelines (BAAD 2022; 2023). The BAAD has not adopted quantitative GHG thresholds for construction or operation. Instead, it recommends four qualitative significance thresholds for the evaluation of GHG emissions that target electrification of buildings and transportation, efficient use of electricity, and reduction in vehicle miles traveled (BAAD 2023). These thresholds were developed by BAAD for the purpose of evaluating a project based on its effect on California's efforts to meet the State's long term climate goals. BAAD found that the following design elements would be required of new land use development projects, in order to achieve California's carbon neutrality target by 2045. Alternately, a project can show compliance with a qualified GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). However, the Project is not considered a new land use project, therefore, the qualitative significance threshold by BAAD are not included in this report.

Local

City of Pacifica General Plan 2040

The City of Pacifica 2040 General Plan adopted in July 2022, and outlines several policies intended for the reduction of GHG emissions within the City (City of Pacifica 2022). The following policies are applicable to the Project:

> ***CO-I-54: Climate Action Plan for Greenhouse Gas Reductions*:** Maintain and update the Climate Action Plan that focuses on feasible actions the City can take to reduce greenhouse gas emissions from government, business, and residents in Pacifica.

City of Pacifica Climate Action and Adaptation Plan

In July 2014, the City of Pacifica adopted its first climate action plan (CAP), outlining policy guidance and introducing various GHG reduction measures that target four key sectors: energy, transportation, solid waste, and water. The CAP commits to reducing community-wide emissions by 35 percent below 2005 levels by 2020, and 80 percent below 1990 levels by 2050. However, many of the implementing measures focus on lowering operational GHG emissions, such as building energy consumption, which do not apply to the Project. Since then, the City has established a Climate Action and Adaptation Plan (CAAP) Task Force in May 2023, to update and expand its scope from its original 2014 CAP. The updated CAAP aims to be both ambitious in meeting emissions reduction goals and practical in terms of implementation (City of Pacifica 2025).

Discussion

a, b) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? Nor, Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less than Significant. The CEQA Guidelines do not prescribe specific methods for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methods and thresholds of significance consistent with various factors prescribed by CEQA Guidelines section 15064.4. The State of California has not adopted emissions-based thresholds for GHG emissions under CEQA. The Governor's Office of Planning and Research (OPR) technical advisory titled *Discussion Draft CEQA and Climate Change Advisory* (OPR 2018) states that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice." Section 15064.7(c) of the CEQA Guidelines specifies that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence".

Construction and Operations

As the BAAD does not provide mass emissions thresholds for assessment of GHG impacts, construction impacts would therefore be evaluated based on Sacramento Metropolitan Air Quality Management District's (SMAQMD) established threshold of 1,100 $MTCO_2e$ per year for construction (SMAQMD 2020). Because operational emissions for the Project would not result in an increase in required maintenance, evaluation would be based on its alignment with the goals of the 2022 Scoping Plan and City of Pacifica CAP.

The combustion of fuel to provide power for the operation of various construction equipment and vehicles results in the generation of GHG emissions. Construction emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1. The Project specific information for the construction schedule, off-road equipment, and export volume were used during phases provided by the Project applicant. Where Project-specific data was not available, CalEEMod defaults were used. Detailed modeling assumptions are included in Appendix A in this document.

Table GHG-1 shows that Project construction would generate a total of approximately 498 $MTCO_2e$ over the approximate 15-month construction period. As shown in Table GHG-1, estimated construction emissions would not exceed the construction significance threshold and impacts would be less than significant.

Upon completion of Project construction, and after the tank is commissioned and operational, the Project would not result in an increase in required maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, additional truck trips resulting from maintenance of the tanks and appurtenances would be negligible. The 2022 Scoping Plan includes one strategy

applicable to construction activities—progressive electrification of construction equipment, with a target that 25 percent of construction energy use be powered by electricity by 2030, increasing to 75 percent by 2045. However, the feasibility of meeting this strategy depends on the availability of compliant electric construction equipment resulting from statewide regulatory actions targeting equipment manufacturers and fleet owners. As such, this strategy cannot be directly implemented at the individual project level. Additionally, the Project represents less than 0.2 percent of the CAP's off-road emissions inventory and would not conflict the CAP's goals of reducing community-wide emissions.

TABLE GHG-1
GHG EMISSIONS FROM PROJECT CONSTRUCTION

Emissions	Annual GHG Emissions ($MTCO_2e$ per year)
Construction Year 1	234
Construction Year 2	264
Total	**498**
SMAQMD Threshold	**1,100**
Significant?	**No**

NOTE: $MTCO_2e$ = metric tons of carbon dioxide equivalent
SOURCE: ESA 2025 (Appendix A).

Project construction would result in increased GHG emissions compared to baseline conditions; however, the emissions would not exceed regional or quantitative thresholds and would not conflict with applicable plans, policies, and regulations for reducing GHG emissions. Construction emissions associated with the Project would not exceed the quantitative significance threshold adopted by SMAQMD. Additionally, the Project operations would not conflict with any applicable plan, policies, or regulations such as the 2022 Scoping Plan and City of Pacifica CAP. Therefore, Project construction and operations would not generate GHG emissions that would have a significant impact on the environment or conflict with any applicable State or local plan, policies, or regulations; thus this impact would be less than significant.

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3.3.9 Hazards and Hazardous Materials

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
HAZARDS AND HAZARDOUS MATERIALS — Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	☒	☐

Environmental Setting

In California, Government Code Section 65962.5 requires the State Water Resources Control Board (SWRCB) and the California Department of Toxic Substance Control (DTSC) to maintain regulatory databases listing hazardous materials sites; the list is also referred to as the Cortese List. The Cortese List identifies sites with suspected and confirmed releases of hazardous materials to the subsurface soil and/or groundwater. The listed sites can be accessed through the SWRCB's GeoTracker database and the DTSC EnviroStor database. The reporting and statuses of these sites change as identification, monitoring, and clean-up of hazardous materials sites progress. A database search of both the EnviroStor and GeoTracker identified zero hazardous clean-up sites in the Project site (DTSC 2025; SWRCB 2025).

The Project site is located approximately 4 miles west of the San Francisco International Airport and 6 miles north of the Half Moon Bay Airport. Terra Nova High School is approximately 0.31 miles southeast of the Project site.

Within California, fire hazard severity zones are designated by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE uses a five-tiered ranking system to assess the threat to people based on fuel hazard, wildland fire potential, and housing density. The Project is not located in a Fire Hazard Severity Zone in a State Responsibility Area; however, the Project is located within a Local

Responsibility Area and is within an area designated as having a High Fire Hazard Severity (CAL FIRE 2024; CAL FIRE 2025).

Fire protection and medical emergency services in the City of Pacifica are provided by the North County Fire Authority, a Joint Powers Authority collaboration between the cities of Daly City, Brisbane, and Pacifica formed in 2003. There are two fire stations located in the City of Pacifica, one each at the north and south ends of the City (City of Pacifica 2022). The nearest fire station is Fire Station 72 at 1100 Linda Mar Avenue in the Pacific Manor District, approximately 2.4 miles south of the Project.

Regulatory Setting

See Section XX, *Wildfire*, for discussion on statutes, regulations, plans, or policies specific to wildfire related hazards. See also Section X, *Hydrology and Water Quality*, for discussion on statutes, regulations, plans, or policies specific to water quality.

Federal

The primary federal agencies responsible for managing hazards and hazardous materials include the U.S. Environmental Protection Agency, U.S. Occupational Safety and Health Administration, and the U.S. Department of Transportation. Federal laws, regulations, and responsible agencies related to hazardous materials and hazards management are summarized in **Table 3.9-1**, *Relevant Federal Laws and Regulations Related to Hazards and Hazardous Materials*.

TABLE 3.9-1
RELEVANT FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS

Classification	Federal Law or Responsible Federal Agency	Description
Hazardous Waste Handling	Resource Conservation and Recovery Act of 1976 (RCRA)	Under RCRA, the USEPA regulates the generation, transportation, treatment, storage, and disposal of hazardous waste from “cradle to grave.”
	Hazardous and Solid Waste Act	The amended RCRA in 1984 affirms and extends the “cradle to grave” system of regulating hazardous wastes. The amendments specifically prohibit the use of certain techniques for the disposal of some hazardous wastes.
	Toxic Substances Control Act	Code of Federal Regulation (CFR) Title 40 (40 CFR), Chapter 1, Subchapter R, Toxic Substances Control Act, Part 761, Polychlorinated Biphenyls (PCBs) covers the identification and sampling requirements for PCBs for disposal purposes.
Hazardous Materials Management	Community Right-to-Know Act of 1986 (also known as Title III of the Superfund Amendments and Reauthorization Act)	Imposes requirements to help ensure that hazardous materials are properly handled, used, stored, and disposed of and to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.
Hazardous Materials Transportation	U.S. Department of Transportation (DOT)	DOT has the regulatory responsibility for the safe transportation of hazardous materials. DOT regulations govern all means of transportation except packages shipped by mail (49 CFR).
	U.S. Postal Service (USPS)	USPS regulations govern the transportation of hazardous materials shipped by mail.
Occupational Safety	Occupational Safety and Health Act of 1970	OSHA sets standards for safe workplaces and work practices, including reporting accidents and occupational injuries (29 CFR).

TABLE 3.9-1
RELEVANT FEDERAL LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS

Classification	Federal Law or Responsible Federal Agency	Description
Structural and Building Components (Hazardous Building Materials [asbestos-containing materials, lead-based paint, PCBs])	Toxic Substances Control Act	Regulates the use and management of hazardous building materials and sets forth detailed safeguards to be followed during the disposal of such items.
	USEPA	The USEPA monitors and regulates hazardous materials used in structural and building components and their effects on human health.

NOTES:

CFR = Code of Federal Regulations; DOT = U.S. Department of Transportation; FAA = Federal Aviation Administration; OSHA = U.S. Occupational Safety and Health Administration; RCRA = Resource Conservation and Recovery Act of 1976; USEPA = U.S. Environmental Protection Agency; USPS = U.S. Postal Service

State

The primary state agencies responsible for managing hazardous materials in the region include the DTSC, the San Francisco Bay Regional Water Quality Control Board (RWQCB), California Occupational Safety and Health Administration, California Department of Public Health, California Highway Patrol, and the California Department of Transportation. State laws, regulations, and responsible agencies related to hazardous materials management are summarized in **Table 3.9-2**, *Relevant State Laws and Regulations Related to Hazards and Hazardous Materials*.

TABLE 3.9-2
RELEVANT STATE LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS

Classification	Law or Responsible State Agency	Description
Hazardous Materials Management	Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program); Health and Safety Code Section 25404 et seq.	CalEPA adopted regulations in January 1996 that implemented the Unified Program at the local level. The agency responsible for implementing the Unified Program is called the Certified Unified Program Agency (CUPA). For the Project area, the San Mateo County Department of Environmental Health is the designated CUPA.
	California Fire Code, Title 24, Chapter 9, California Code of Regulations, and California Building Code, Part 2	The California Fire Code regulates the storage and handling of hazardous materials, including the requirement for secondary containment, separation of incompatible materials, and preparation of spill response procedures.
Hazardous Waste Handling	California Hazardous Materials Release Response Plan and Inventory Law of 1985	The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires that businesses that store hazardous materials on-site prepare a Hazardous Materials Business Plan and submit it to the applicable local CUPA.
	California Hazardous Waste Control Act; California Health and Safety Code, Division 20, Chapter 6.5, Article 2, Section 25100 et seq.; California Department of Toxic Substances Control (DTSC)	Under the California Hazardous Waste Control Act, DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste in California. The hazardous waste regulations establish criteria for identifying, packaging, and labeling hazardous wastes; dictate the management of hazardous waste; establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and identify hazardous wastes that cannot be disposed of in landfills. DTSC is also the administering agency for the California Hazardous Substance Account Act. California Health and Safety Code, Division 20, Chapter 6.8, Section 25300 et seq., also known as the State Superfund law, provides for the investigation and remediation of hazardous substances pursuant to state law. Additionally, Health and Safety Code Section 25180 authorizes the DTSC, the local CUPA, or the RWQCB to require responsible parties to cleanup spills and releases.

TABLE 3.9-2
RELEVANT STATE LAWS AND REGULATIONS RELATED TO HAZARDS AND HAZARDOUS MATERIALS

Classification	Law or Responsible State Agency	Description
Hazardous Materials Transportation	California Code of Regulations Titles 13, 22, and 26	Regulates the transportation of hazardous waste originating in and passing through the state, including requirements for shipping, containers, and labeling.
	California Highway Patrol and California Department of Transportation, California Vehicle Code, Chapter 5, Sections 31303–31309	These two state agencies are primarily responsible for enforcing state and federal regulations and responding to hazardous materials transportation emergencies.
Occupational Safety	California Occupational Safety and Health Administration (Cal/OSHA) regulations (California Code of Regulations Title 8)	Cal/OSHA has primary responsibility for developing and enforcing workplace safety regulations in California. Because California has a federally approved U.S. Occupational Safety and Health Administration program, it is required to adopt regulations that are at least as stringent as those found in Code of Federal Regulations Title 29. Cal/OSHA standards are generally more stringent than federal regulations. It requires employee safety training, safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation.
Construction Stormwater General Permit (Construction General Permit; Order 2022-0057-DWQ, NPDES No. CAS000002)	San Francisco Bay RWQCB	Dischargers whose project disturbs 1 or more acres of soil or where projects disturb less than 1 acre but are part of a larger common plan of development that in total disturbs 1 or more acres, are required to obtain coverage under the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Order 2022-0057-DWQ, NPDES No. CAS000002). Construction activity subject to this permit includes clearing, grading, grubbing, and other disturbances to the ground such as excavation and stockpiling but does not include regular maintenance activities performed to restore the original line, grade, or capacity of a facility. The Construction General Permit requires the development and implementation of a stormwater pollution prevention plan that includes specific Best Management Practices (BMPs) designed to prevent sediment and pollutants from contacting stormwater from moving off-site into receiving waters. The BMPs fall into several categories, including erosion control, sediment control, waste management, and good housekeeping, and are intended to protect surface water quality by preventing the off-site migration of eroded soil and construction-related pollutants from the construction area.
Underground Infrastructure	California Code of Regulations Sections 4216–4216.9	Sections 4216–4216.9, Protection of Underground Infrastructure, requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least 2 days before excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for Southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area before the start of project activities.

NOTES: BMP = best management practices; Business Plan Act = California Hazardous Materials Release Response Plan and Inventory Law of 1985; Cal/OSHA = California Occupational Safety and Health Administration; CalEPA = California Environmental Protection Agency; CUPA = Certified Unified Program Agency; DTSC = California Department of Toxic Substances Control; NPDES = National Pollutant Discharge Elimination System; RWQCB = Regional Water Quality Control Board; Unified Program = Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

California State Emergency Plan

Pursuant to the Emergency Services Act (Government Code Section 8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons (Cal OES 2023). Response to hazardous materials incidents is one part of this plan. Rapid response to incidents involving wildfire and other natural and/or human-caused incidents

is an important part of the plan, which is administered by the Governor's Office of Emergency Services. The Governor's Office of Emergency Services coordinates the responses of other agencies, including the U.S. Environmental Protection Agency, California Environmental Protection Agency, California Highway Patrol, California Department of Fish and Wildlife, the nine regional water quality control boards, the local air districts, and local agencies.

Local

County of San Mateo Emergency Operations Plan

The Emergency Operations Plan establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the County of San Mateo Operational Area (County of San Mateo 2015). It provides information on the County emergency management structure of how and when the Emergency Operations Center staff is activated. The overall objective of emergency management is to ensure the effective coordination of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents and national security emergencies. To carry out its responsibilities, the emergency management organization will accomplish the following objectives during an emergency/disaster:

- Maintain overall coordination/support of emergency response and recovery operations, including on scene incident management as required.
- Coordinate and liaise with appropriate federal, state and other local government agencies, as well as applicable segments of private sector entities and volunteer agencies.
- Establish priorities and resolve conflicting demands for support.
- Prepare and disseminate emergency public information to alert, warn, and inform the public.
- Disseminate damage information and other essential data

2021 Multijurisdictional Local Hazard Mitigation Plan

The 2021 Multijurisdictional Local Hazard Mitigation Plan (LHMP) defines measures to reduce risks from natural disasters in the County of San Mateo planning area, which consists of the entire county, including unincorporated areas, incorporated cities, and special purpose districts. The Plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency grant programs for all planning partners. It updates the County's previous plan, the 2016 San Mateo County Hazard Mitigation Plan. The Plan is divided into two volumes, Volume 1 (County of San Mateo 2021a) broadly focuses on the County as a whole, while Volume 2 (County of San Mateo 2021b) focuses on specific cities, towns, and special purpose districts.

The District annex in Chapter 29 of the San Mateo County LHMP Volume 2 is a jurisdiction specific section that supplements the countywide mitigation plan with details tailored to District's infrastructure, risks, capabilities, and mitigation priorities. The LHMP emphasizes reducing risk to essential public facilities through infrastructure upgrades, integration with capital improvement planning, and implementation of prioritized mitigation actions. The Project would be consistent with the LHMP's goals by improving the structural resilience and reliability of potable water storage, reducing the potential for service disruption during hazard events, and supporting long-term community emergency preparedness and recovery capacity.

North Coast County Water District Emergency Response Plan

The District maintains an Emergency Response Plan (ERP) consistent with federal requirements under the America's Water Infrastructure Act of 2018, which requires community water systems to assess risks and establish procedures for responding to natural and human-caused emergencies. The ERP outlines staff roles and responsibilities, communication and notification protocols, coordination with emergency responders and regulatory agencies, and operational procedures to maintain safe drinking water service during events such as earthquakes, wildfires, power outages, or contamination incidents. The District also conducts periodic training and exercises to test and update the plan.

The ERP supports the Project's purpose by emphasizing infrastructure reliability and emergency preparedness. Replacing an aging or seismically vulnerable tank would reduce the likelihood of structural failure, water loss, or service interruption during a hazard event, thereby enhancing the District's ability to maintain adequate storage for fire flow, emergency supply, and system pressure as required under the ERP. The Project would be consistent with the District's emergency response and resilience objectives.

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to hazards and hazardous materials, listed below (City of Pacifica 2022).

Safety Element

Guiding Policies

SA-G-9: Emergency Response. Foster an efficient and coordinated response to emergencies and natural disasters.

SA-G-10: Public Awareness. Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures.

SA-G-11: Disaster Preparation. Make infrastructure investments, enforce regulations, and disseminate information that will improve disaster response and recovery, with the goal of minimizing damage to people and property.

Implementing Policies

SA-I-101: Emergency Operations Plan. Update and maintain the City's Emergency Operations Plan, which provides adequate response to disasters, including emergency ingress and egress, and defines the expected roles of City, County, utilities service providers, and regional agencies.

Discussion

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

Less than Significant. Construction activities associated with the Project would require the use of small qualities of hazardous materials such as diesel fuel, gasoline, oils, grease, equipment fluids, cleaning solutions and solvents, lubricant oils, and adhesives.

During construction, contractors handling, storing, or transporting hazardous materials or wastes would comply with hazardous materials regulations, such as implementation of a Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs) in compliance with the National Pollutant Discharge Elimination System (NPDES) permitting requirements, which would reduce the risk of accidental release and provide protocols and notification requirements should an accidental release occur. Additionally, BMPs for construction activities would be required by the City of Pacifica pursuant to Chapter 12 of the Municipal Code (Storm Water Management and Discharge Control).

Any spills of these substances would be cleaned on-site according to the SWPPP and NPDES permitting requirements. The SWPPP would list the hazardous materials (including petroleum products) proposed for use during construction; describe spill prevention measures, equipment inspections, equipment, and fuel storage; describe protocols for responding immediately to spills; and describe BMPs for controlling site run-on and runoff. The SWPPP prepared for the Project would also identify BMPs to ensure the lawful transport, use, storage, and disposal of hazardous materials.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time.

As discussed in Section X, *Hydrology and Water Quality*, the District has designed the Project to minimize land disturbance and impervious surface coverage and has incorporated bioretention basins into the Project design to retain stormwater flows and minimize potential runoff from the proposed impervious surfaces, consistent with requirements of Provision C.3 of the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES Permit.

No waste or discharge would be generated at the Project site, unless resulting from an unanticipated major repair or overflow event. During these events, consistent with Section 6-12.202 of the City of Pacifica's Stormwater Ordinance, water would discharge into a catch basin west of the proposed tank and convey the water to the existing drain/overflow discharge outfall. The drainage flows towards Rockaway Beach through an unnamed drainage channel. A tank wall drain would surround the tank and convey water that collects in the ground near the tank walls away to the drainage outfall. Operational source control measures incorporated into the Project include marking storm drain inlets with a "No Dumping" message and the regular inspection and cleaning of storm drain inlets. The site would be managed in a manner protective of water quality, consistent with District standards.

By complying with relevant federal, State, and local laws, the Project would not result in a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials and would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials. Therefore, the impacts would be less than significant.

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

No Impact. Terra Nova High School is approximately 0.31 mile southeast of the Project site. There are no schools located within one-quarter mile of the Project site. Furthermore, fuels, oils, and lubricants used during the proposed liner raise activities would be handled in accordance with material safety storage and handling protocols and BMPs that would contain and prevent spills from occurring on the Project site. Therefore, no impact would occur.

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

No Impact. There are no identified hazardous material sites located within the Project site (DTSC 2025, SWRCB 2025). The Project would not be located on a hazardous materials site and no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The Project site is located approximately 4 miles west of the San Francisco International Airport and 6 miles north of the Half Moon Bay Airport. The Project is not located within an airport land-use plan or within 2 miles of a public airport or public use airport. No impact would occur.

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

No Impact. During construction, there would be negligible numbers of workers traveling to the Project site on a temporary basis, approximately 326 workdays. Upon completion of construction the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. No road closures would be required for the Project, and there would not be a permanent substantial increase in the number of people working or residing at or near the Project site. The Project would not impair implementation of or physically interfere with any adopted emergency response plan or emergency evacuation plan. Therefore, no impact would occur.

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

Less than Significant. The Project is not located in a Fire Hazard Severity Zone in a State Responsibility Area; however, the Project is located within a Local Responsibility Area and is within an area designated as having a High Fire Hazard Severity (CAL FIRE 2024; CAL FIRE 2025).

The Project would include: replacing the existing Fassler Tank with a new a 1.2-million-gallon concrete water storage tank, installation of underground water conveyance pipes, site drainage facilities, a temporary trail safety barrier and partial trail expansion, tank appurtenances, groundwater level monitoring wells, perimeter fencing including chain-link removal and replacement, driveway paving, as well as installation

of riprap, hydroseeding, and tree removal and planting. As discussed in Chapter 2, *Project Description*, a system-wide storage evaluation was performed to assess the District's storage capacity which recommended replacing the existing tank with a new 1.2 million gallon tank to increase emergency and fire storage in Pressure Zone 24 and other zones in the southern portion of the District.

The use of construction equipment and the possible temporary on-site storage of fuels and/or other flammable construction chemicals could pose an increased fire risk resulting in injury to workers or the public during construction. However, contractors would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the risk of wildland fires during construction would be less than significant.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Additionally, as previously mentioned the Project would allow for increased emergency and fire storage in Pressure Zone 24 and other zones in the southern portion of the District. Further, staff would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the risk of wildland fires during operations and maintenance would be less than significant.

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3.3.10 Hydrology and Water Quality

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
HYDROLOGY AND WATER QUALITY — Would the project:				
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?	☐	☐	☒	☐

Environmental Setting

The Project site is located within the Rockaway Creek watershed (Flows to Bay 2025). The Project site is located on a hillslope above existing residential development. North of the Project site is Rockaway Creek, which extends along Rockaway Avenue parallel with Fassler Avenue. At its nearest point, Rockaway Creek is approximately 0.35 mile downslope of the northwestern side of the Project site. The Project is not located within a defined groundwater basin designated under the Sustainable Groundwater Management Act (SGMA) (DWR, 2025). The nearest groundwater basin is the San Pedro Valley Groundwater Basin, located approximately 0.8 miles south of the Project site (San Mateo County, 2026).

Regulatory Setting

Federal

Federal Emergency Management Agency-National Flood Insurance Program

FEMA established the National Flood Insurance Program (NFIP) in order to reduce flooding on private and public properties. The program provides subsidized flood insurance to communities that comply with FEMA regulations protecting development in floodplains. As part of the program, FEMA publishes Flood Insurance Rate Maps (FIRM) that identify Special Flood Hazard Areas (SFHA). An SFHA is an area that

would be inundated by the one-percent annual chance flood, which is also referred to as the base flood or 100-year flood.

Clean Water Act

Under the Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), the USEPA seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters by implementing water quality regulations.

The federal Anti-degradation Policy, established in 1968 under CWA Section 303, is designed to protect existing uses, water quality, and national water resources. The states implement a set of anti-degradation measures when evaluating activities that may affect the quality of waters of the United States. Implementing anti-degradation measures is integral to the comprehensive protection and enhancement of surface water and groundwater quality.

CWA Section 402: National Pollutant Discharge Elimination System

The NPDES permit program under Section 402 of the CWA is one of the primary mechanisms for controlling water pollution through the regulation of sources that discharge sediment and other pollutants into waters of the U.S. The USEPA has delegated authority of issuing NPDES permits in California to the SWRCB and its RWQCBs. The NPDES permit program is discussed in further detail below in the State section. Section 402 of the CWA would apply to the Project because construction at the Project site would be required to control discharges of pollutants from point sources, as discussed below.

State

Porter Cologne Act

The State of California's Porter-Cologne Water Quality Control Act (Porter-Cologne Act) provides the basis for water quality regulation within California and assigns primary responsibility for the protection and enhancement of water quality to the SWRCB and the nine RWQCBs. Under the Porter-Cologne Act, the SWRCB and RWQCBs also have the responsibility for granting CWA NPDES permits and Waste Discharge Requirements (WDRs) for certain point-source and non-point discharges to waters.

The Porter-Cologne Act allows the California SWRCB to adopt statewide Water Quality Control Plans and basin-specific water quality control plans, which serve as the legal, technical, and programmatic basis of water quality regulation statewide or for a particular region. The water quality control plans limit impacts on water quality from a variety of sources.

National Pollution Discharge Elimination System

Phase II Small Municipal Separate Storm Sewer System (MS4) Program

EPA's Stormwater Phase II Rule establishes a stormwater management program for MS4s that is intended to improve the Nation's waterways by reducing the quantity of pollutants that stormwater picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash, such as cigarette butts, paper wrappers, and plastic bottles. When deposited into nearby waterways through MS4 discharges, these pollutants can impair the waterways, thereby discouraging recreational use of the

resource, contaminating drinking water supplies, and interfering with the habitat for fish, other aquatic organisms, and wildlife.

Operators of regulated MS4s are required to design their programs to reduce the discharge of pollutants to the "maximum extent practicable" (MEP), protect water quality, and satisfy the appropriate water quality requirements of the CWA. Implementation of the MEP standard will typically require the development and implementation of BMPs and the achievement of measurable goals to satisfy each of the six minimum control measures. The Project site is currently operating under an existing MS4 permit, commonly referred to as the Municipal Regional Stormwater Permit.

Local

Water Quality Control Plan for the San Francisco Bay Basin

The San Francisco Bay RWQCB regulates water quality in accordance with the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan). The Basin Plan lists the beneficial uses that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as the water quality objectives and criteria that must be met to protect these uses. The San Francisco Bay RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements, including permits for nonpoint sources such as the urban runoff discharged by a City's stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies. Rockaway Creek, which is the nearest water body at approximately 0.35 mile away from the Project site, was placed on the 303(d) list for exceeding the allowable water quality standard for pollutants- indicator bacteria, but has since been delisted as the applicable water quality standard (WQS) has been attained.

Municipal Regional Stormwater Permit

The San Francisco Bay RWQCB has issued a Municipal Regional Stormwater NPDES Permit (MRP) Order No. R2-2022-0018 to regulate stormwater discharges from permittees in Alameda, Contra Costa, San Mateo, and Santa Clara Counties. The City of Pacifica is required to operate under the MRP to discharge stormwater from the City's storm drain system to surface waters. The MRP mandates that the City of Pacifica uses its planning and development review authority to require that stormwater management measures are included in new and redevelopment projects to minimize and properly treat stormwater runoff. Provision C.3 of the MRP regulates the following types of development projects:

- Projects that create or replace 10,000 square feet or more of impervious surface area.
- Special Land Use Categories that create or replace 5,000 square feet or more of impervious surface.

The Project would be required to comply with Provision C.3 of the MRP as the Project proposes more than 5,000 square feet of new impervious surface; and would replace more than 50% of the existing impervious coverage. The MRP requires regulated projects to include Low Impact Development (LID) design measures. These include site design features to reduce the amount of runoff requiring treatment and maintain or restore the site's natural hydrologic functions, source control measures to prevent stormwater from pollution, and stormwater treatment features to pre-treat polluted stormwater runoff prior to discharge into the municipal storm drain system. The MRP requires that stormwater treatment measures are properly installed, operated, and maintained.

City of Pacifica's Storm Water Management and Discharge Control Ordinance

Chapter 12 of the City of Pacifica's Municipal Code regulates stormwater management and discharge control within the City to assure consistency with the Clean Water Act, applicable implementing regulations, and NPDES Permit No. CAS61200. Pursuant to Chapter 12, the discharge of non-storm water discharges to the City storm water system is prohibited. Discharges regulated under an NPDES permit and in compliance with all permit requirements are exempt from this prohibition. Pursuant to Section 6-12.202 of this chapter, discharges from water line flushing, other discharges from potable water sources and landscape irrigation are exempt from this prohibition.

Discussion

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

Less than Significant.

Construction

The Project purpose is to replace an existing water tank and other associated improvements including paving the existing driveway. The water tank provides potable water to the surrounding community and does not obviously conflict with any applicable policies or regulations. The District has designed the Project to minimize land disturbance and impervious surface coverage and has incorporated vegetated stormwater swales into the Project design to retain stormwater flows and minimize potential runoff from the proposed impervious surfaces, consistent with requirements of Provision C.3 of the MRP. Best management practices (BMPs) for construction activities would be required by the City of Pacifica pursuant to Chapter 12 of the Municipal Code (Storm Water Management and Discharge Control). Accordingly, the following BMPs would apply:

Best Management Practices (BMPs) for Construction Activities

a) Any person performing construction activities or development in the City shall implement appropriate BMPs to prevent the discharge of construction wastes or contaminants from construction materials, tools and equipment, stockpiles, or exposed soil from entering the City storm water system or watercourse.

b) All construction plans and applications submitted to the City pursuant to any permit applications shall implement appropriate BMPs to prevent the discharge of construction wastes or contaminants from construction materials, tools, and equipment, stockpiles, or exposed soil from entering the City storm water system or watercourse.

    1) Construction-phase BMPs include erosion and sediment controls and pollution prevention practices. Erosion control BMPs may include, but are not limited to, scheduling and timing of grading activities, timely revegetation of graded areas, the use of hydroseed and hydraulic mulches, and installation or application of soil binders, straw mulch, wood mulch, fiber rolls, check dams, and erosion control blankets. Sediment control may include properly sized detention basins, dams, or filters to reduce entry of suspended sediment into the storm water system and watercourses, installation of silt fences, fiber rolls, check dams, or gravel bags, and installation of construction entrance controls to prevent tracking of sediment onto adjacent streets. Pollution prevention practices may include designated washout areas or

facilities, control of trash and recycled materials, tarping of materials stored on site, and proper location of and maintenance of temporary sanitary facilities. The combination of BMPs used, and their execution in the field, must be customized to the site using up-to-date standards and practices. The City will provide references to current guidance manuals and BMP information on request.

2) Financial security may be required to insure that temporary measures to control storm water pollution are implemented and maintained during construction and after construction for a period determined by the City. Financial security shall consist of an irrevocable letter of credit, cash deposit, or performance bond as determined by the City.

3) When any work is being done contrary to the provisions of this chapter, including failure to properly install or maintain applicable BMPs, the enforcement official may order the work stopped by notice in writing served on any persons engaged in doing or causing the work to be done. Such work shall stop until the enforcement official authorizes the work to proceed. This remedy is in addition to and does not supersede or limit any and all other remedies, both civil and criminal provided in the City of Pacifica Municipal Code.

4) The City has the authority to review designs and proposals for construction activities and new development and redevelopment sites to determine whether adequate BMPs will be installed, implemented, and maintained during construction and after final stabilization (post-construction).

5) All construction plans and applications for construction activity submitted to the City shall consider the potential for erosion and sedimentation at the construction site, and shall include appropriate erosion and sedimentation controls.

Requirements for New Development and Redevelopment Projects

a) Storm water treatment requirements as specified in NPDES Permit No. CAS612008 are mandated for certain categories of new development and redevelopment projects based upon the amount of impervious area created, added, or replaced by a project. Applicable requirements for storm water treatment shall be determined by whether a project is categorized as a regulated project, small project, or single-family home project, including applicable subcategories thereto, as described in NPDES Permit No. CAS612008. Treatment measures shall be designed to the technical specifications and other design criteria as specified in the NPDES permit.

b) Prior to issuance of a building permit, an applicant shall submit a completed checklist provided by the City, and any plans, reports, or other technical information that, in the opinion of the Planning Director or his/her designee, are necessary to determine whether a project is subject to and/or has complied with the requirements of NPDES Permit No. CAS612008.

The Project would demonstrate compliance with all applicable requirements described in the C.3 Regulated Projects Guide prepared for the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) (San Mateo County 2023) and Chapter 12 of the Municipal Code (Storm Water Management and Discharge Control Ordinance) during permitting review with the City of Pacifica; as such, it would not violate any water quality standards or waste discharge requirements. Accordingly, Project construction would not substantially degrade surface water quality.

The Project is not located within a defined groundwater basin designated under SGMA. However, since the tank is partially buried, groundwater monitoring wells would be required even without the expectation of high groundwater at the site due to its location on a hillside. A 20-foot-deep groundwater monitoring well would be constructed up gradient and down gradient of the tank. The well would be used for monitoring purposes only and as such, the Project would not substantially degrade groundwater quality.

Operation

Following construction, the site would be managed and maintained by the District in a manner consistent with existing operations and maintenance protocols. Maintenance would likely include periodic monitoring of water systems to assess the soundness and functional integrity of tanks, valves, water conveyance pipes, and associated infrastructure. During storm events which result in tank overflow, consistent with Section 6-12.202 of the City of Pacifica's Stormwater Ordinance, water would discharge into a catch basin west of the tank and would be conveyed to the existing drain discharge outfall, which ultimately flows towards Rockaway Beach through the Rockaway Creek drainage. Operational source control measures incorporated into the Project include marking storm drain inlets with a "No Dumping" message and the regular inspection and cleaning of storm drain inlets. The site would be managed in a manner protective of water quality, consistent with District standards. Accordingly, impacts would be less than significant.

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

No Impact. The Project is not located within a defined groundwater basin designated under SGMA. Therefore, the Project would not decrease groundwater supplies or interfere with groundwater recharge such that it would impede sustainable groundwater management of a basin, and there would be no impact.

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; *Less than Significant Impact***
- **ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; *Less than Significant Impact***
- **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; *Less than Significant Impact***
- **iv) impede or redirect flood flows? *Less than Significant Impact***

Less than Significant.

Construction

No streams or rivers are present in the Project area. The Project consists of the replacement of an existing water tank in approximately the same location as the existing infrastructure. Minor trenching and grading required to accommodate the larger replacement tank and replacement water line would be required, which would be located within approximately the same area as existing development. As such, the Project

would not substantially alter the existing drainage pattern of the area, or impede or redirect flood flows. The Project would result in approximately 18,302 square feet of new impervious area in the Project location, however stormwater runoff from the proposed impervious area would be contained in onsite biotreatment basins as part of the Project design; as such, the Project would not create or contribute runoff water exceeding the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Consistent with requirements in the C.3 Regulated Projects Guide, the preparation of a stormwater pollution prevention plan (SWPPP) or similar plan for controlling erosion and sediment during construction would be required during permit review with the City of Pacifica.

Operation

Operational measures for controlling erosion and sediment include landscaped stormwater detention basins; in storm events, unchlorinated tank overflow water would be discharged down the hill towards Rockaway Creek in a manner consistent with the C.3 Regulated Projects Guide and City of Pacifica requirements. Accordingly, the Project would not substantially alter existing site drainage patterns or add impervious surfaces in a manner which would result in substantial erosion or siltation on- or off-site; impacts would be less than significant.

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

No Impact. The Project site is not near the ocean or any large water bodies and is located outside of a Tsunami Hazard Zone and seiche zone (California Department of Conservation, 2024). The Project site is located outside of a FEMA flood zone (FEMA 2025). Accordingly, there would be no impact.

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

Less than significant.

Construction

Activities involving soil disturbance during construction, such as grading, excavation into the slope of the hillside, movement and stockpiling of soils could result in erosion, siltation of waterways. If precautions are not taken to contain contaminants, construction could contribute to water quality degradation including through the generation of stormwater run-off, a form of nonpoint-source pollution. In addition, because construction equipment would require the use of fuels, lubricants, and other hazardous materials, soil contamination and water quality violations could occur if these materials are stored improperly during Project construction. These effects would conflict with the requirements of the Water Quality Control Plan (Basin Plan). However, the Project would demonstrate compliance with all applicable requirements described in the C.3 Regulated Projects Guide prepared for the San Mateo Countywide Water Pollution Prevention Program (SMCWPPP) (San Mateo County 2023) and Chapter 12 of the Municipal Code (Storm Water Management and Discharge Control Ordinance) during permitting review with the City of Pacifica. With the implementation of these best management practices and permitting conditions, the Project would not conflict with or obstruct implementation of a water quality control plan. The Project is not located within a defined groundwater basin designated under SGMA. There is no groundwater sustainability plan within the vicinity of the Project because the Project is not located within a defined groundwater basin, therefore Project construction would not conflict with or obstruct implementation of a sustainable groundwater management plan.

Operation

The Project is not located within a defined groundwater basin designated under SGMA. There is no groundwater sustainability plan within the vicinity of the Project because the Project is not located within a defined groundwater basin, therefore operation of the Project would not conflict with or obstruct implementation of a sustainable groundwater management plan. Once operational, the Project would add approximately 18,302 square feet of impervious surfaces. However, rainwater falling on the new impervious surface would be captured in onsite via vegetated stormwater swales to retain stormwater flows and minimize potential runoff from the proposed impervious surfaces. Therefore, the Project would not conflict with a water quality control plan. Operational impacts would be less than significant.

References

City of Pacifica, 2024. Municipal Code. Chapter 12. Storm Water Management and Discharge Control Ordinance. Available: https://library.municode.com/ca/pacifica/codes/code_of_ordinances?nodeId=TIT6SAHE_CH12STWAMADICO. Accessed March 5, 2025.

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Regional Water Quality Control Board (RWQCB) 2009. Fact Sheet/Rationale Technical Report for Final Tentative Order No. R2-2009-00XX NPDES Permit No, CAS612008 Municipal Regional Stormwater NPDES Permit and Waste Discharge Requirements. October 7, 2009. Available: https://water.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Fact_Sheet.pdf. Accessed February 27, 2025.

San Mateo County, 2023. C.3 Regulated Projects Guide, Version 2.0. Available: https://www.smcgov.org/planning/stormwater-treatment-requirements. Accessed February 27, 2025.

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3.3.11 Land Use and Planning

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
LAND USE AND PLANNING — Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

Environmental Setting

The majority of the Project site is located on lands owned by the District; other parts occur within District easement areas on lands owned by the City of Pacifica. Residential development is located along Fassler Avenue approximately 550 feet south of the existing tank location. The Ahni Trail is within the Project site and the GGNRA is approximately 0.2 miles to the northeast. Terra Nova High School is approximately 1,650 feet (0.31 mile) southeast of the Project site.

Regulatory Setting

Local

City of Pacifica 2040 General Plan

The 2040 General Plan is a policy document for the long-range development of the City of Pacifica (City of Pacifica 2022). Policies applicable to the Project are below.

City of Pacifica 2040 Policies Relevant to Land Use	
CD-I-20	Underground Utilities. Continue to require underground utilities in all new development. New developments should include undergrounding existing overhead utilities along each project frontage. Within scenic corridors, place lines underground or located there so they do not break the viewline of a roadway vista. This policy applies Citywide.
LU-I-36	Cattle Hill and Fassler Ridge. Ensure consistency with the Open Space/Agriculture/Residential land use designation on Cattle Hill and Fassler Ridge, as shown on the General Plan Land Use Diagram, to ensure that new development is appropriate to the physical conditions and high scenic value of the ridge. *Certain locations are designated for Low Density Residential development; site planning in these areas should be subject to the Hillside Preservation District to provide clustered development. The Royce water tank site will retain a Utilities designation. Trail easements should be negotiated with land owners based on the Parks and Open Space map (Figure 6-1).*
CI-I-22	Improvements for Existing Facilities. Maintain and upgrade local streets, sidewalks, utilities, and other City infrastructure in a manner that prevents deterioration and corrects existing deficiencies.

SOURCE: City of Pacifica, 2022

City of Pacifica Municipal Code

The Municipal Code consists of all the regulatory, penal, and administrative laws of general application of the City of Pacifica (City of Pacifica 2024). The Zoning Plan is based on the general plan and regulates the use of land and buildings for all territory within City boundaries. Policies applicable to the Project are below.

City of Pacifica Municipal Code Policies Relevant to Land Use	
Section 9-4.2304	Public utility distribution and transmission lines. Public utility distribution and transmission lines, both overhead and aboveground, shall be permitted in all districts without limitation as to height and without the necessity of first obtaining a use permit; provided, however, the routes of proposed electric transmission lines shall be submitted to the Commission for approval, and such approval shall be received prior to the acquisition of rights-of-way therefor *[sic]* and any construction thereon.

SOURCE: City of Pacifica, 2024

Discussion

a) Physically divide an established community?

No Impact. The Project would be constructed on the existing tank site on District owned lands. The Project consists of a replacement water tank and water line, new impermeable surface and stormwater biotreatment swales, driveway paving, and other associated improvements, and does not include any components that would result in a division of the existing adjacent residential communities. There would be no impact.

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

No Impact. According to California Government Code sections 53091 and 53096, location or construction of facilities by a local agency related to water storage are not required to comply with city or county building or zoning ordinances. However, discussion has been included for informational purposes to demonstrate the Project's consistency with the City's zoning ordinance.

The tank site is designated as Utilities (U) which is considered a Public and Community Use in the City of Pacifica General Plan (City of Pacifica 2022). The proposed replacement water line, improved driveway, and other site improvements would be located within a utilities easement that extends through adjoining property owned by the City of Pacifica designated as Open Space (OS) in the General Plan. The Utilities designation indicates the location of water tanks, communication facilities including cellular facilities, and other utilities serving the City (City of Pacifica 2022). The Project would improve an existing water tank and driveway in a manner that would prevent deterioration and correct existing deficiencies, would maintain the existing Utilities and Open Space zoning, and would underground the proposed replacement water line consistent with General Plan policies CD-I-20 and CI-I-22 and Municipal Code Section 9-4.2304. The Project would not change the use or character of the surrounding area. There would be no impact.

References

City of Pacifica, 2022. General Plan 2040. July 2022. Available: https://www.planpacifica.org/general-plan. Accessed March 3, 2025.

City of Pacifica, 2024. Municipal Code. Available: https://library.municode.com/ca/pacifica/codes/code_of_ordinances?nodeId=PACIFICA_CALIFORNIAMUCO. Accessed March 5, 2025.

3.3.12 Mineral Resources

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
MINERAL RESOURCES — Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☒	☐
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Environmental Setting

Mineral Land Classification under the Surface Mining and Reclamation Act

In compliance with the Surface Mining and Reclamation Act of 1975 (SMARA) (Chapter 9, Division 2, Section 2710 et seq. of the Public Resources Code), the California Department of Conservation (DOC) California Geological Survey has identified and mapped non-fuel mineral resources of the state to illustrate where economically significant mineral deposits occur and where they are likely to occur, using the best available scientific data. These resources have been mapped using the California Mineral Land Classification System, which includes the following Mineral Resource Zones (MRZs):

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** An area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3:** An area containing mineral deposits for which the significance cannot be determined from available data.
- **MRZ-4:** An area where geological information does not rule out either the presence or absence of mineral resources.
- **Sector EE:** An area that is considered to have a high likelihood for the presence of MRZ-2 resources.

The Project site is located in a Mineral Land classification/Surface Mining and Reclamation Act–designated area. The Project area has been designated as MRZ-3, described as an area containing mineral deposits for which the significance cannot be determined from available data. The map on Plate 2.3 designates this area as containing sand and gravel, as well as stone resources (DOC 2025a; DOC 1987).

There are no existing mines located within the Project site; the closest mining site is the Pacifica Quarry, a limestone mine approximately 1.29 miles northwest of the Project site (DOC 2025b). However, this mine is not active, and the City of Pacifica General plan does not identify any active mines within the planning area (City of Pacifica 2022). The City of Pacifica General Plan Land Use Diagram identifies land use and zoning in the City; the Project site has a land use designation of "Parks and Open Space" and is zoned as Parks and Utilities (City of Pacifica 2022).

The DOC Geologic Energy Management Division oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells in California, and tracks all known oil and gas wells. There are no known oil, natural gas, or geothermal wells located within or adjacent to the Project site (DOC 2025c).

Regulatory Setting

Federal

Surface Mining Control and Reclamation Act of 1977

The Surface Mining Control and Reclamation Act of 1977 (United States Code Title 30, Sections 1201-1328) established a program for regulating surface mining and reclamation activities. The Act created mandatory, uniform standards for these activities on both state and federal lands, including a requirement that minimizes adverse effects on fish, wildlife, and similar environmental values. It also established the Abandoned Mine Reclamation Fund, used for reclaiming and restoring land and water resources that have been adversely affected by mining practices.

State

California Surface Mining and Reclamation Act of 1975

SMARA (Chapter 9, Division 2, Section 2710 et seq. of the Public Resources Code) requires the State Mining and Geology Board to adopt state policies for reclaiming mined lands and conserving mineral resources, as outlined in Title 24 of the California Code of Regulations, Division 2, Chapter 8, Subchapter 1. In compliance with SMARA, the California Land Classification System aids in identification and protection of mineral resources that are subject to urban expansion or other irreversible land uses that would preclude mineral extraction. Protected mineral resources include construction materials, industrial and chemical mineral materials, nonfluid mineral fuels, and metallic and rare minerals.

Local

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to mineral resources, listed below (City of Pacifica 2022).

Conservation Element

Guiding Policies

CO-G-12: Preserve Agricultural Open Space. Promote the preservation of agricultural open space in the Planning Area.

Implementing Policies

CO-I-46: Mineral Resources. If significant mineral resources are discovered with regional agencies to determine a course of action to protect the resources and, if applicable, extract them in an environmentally sensitive manner.

Discussion

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?

Less than Significant. The majority of the Project would be constructed on lands owned by the District. The Project components associated with pipelines or improvements to the roadway would occur within District easement areas on lands owned by the City of Pacifica.

As discussed above in the *Environmental Setting* section, the Project site is located within a potentially important mineral resource area. The Project is designated as MRZ-3, an area containing mineral deposits for which the significance cannot be determined from available data (DOC 1983).

While the Project would occur within an area designated as MRZ-3 which could potentially contain valuable mineral resource deposits, the Project would take place within previously disturbed areas and has a land use designation of Parks and Open Space and a zoning for Park and Utility uses (City of Pacifica 2022). The Project is adjacent to urbanized areas and is located north of a residential neighborhood made up of primarily single-family housing with the closest residence located 600 feet to the southeast. Additionally, the Project site is surrounded by open space owned by the City of Pacifica managed for recreational use. Further, there are no known mines or oil, natural gas, or geothermal wells on the Project site or within the immediate Project vicinity which could be affected by Project activities (DOC 2025b and DOC 2025c).

As the Project is located in previously disturbed areas, adjacent to residential neighborhoods, is surrounded by the recreational uses, and mineral extraction is neither currently occurring nor likely to occur in the foreseeable future due to conflicts with existing land uses described above, impacts from the Project would be less than significant.

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?

No Impact. The Project would have a significant impact if it were to result in the loss of availability of locally important mineral resource recovery sites delineated by local general plans. As discussed above in the *Environmental Setting* section, the Project would not be situated on any mineral resource recovery sites delineated in the City of Pacifica General Plan 2040. The City General Plan identifies limestone as a mineral resource found in the area and notes that while there are mineral deposits in the southern portion of the planning area (i.e. the Project area), these are not actively mined due to existing development (City of Pacifica 2022). The Project would take place within previously disturbed areas and the Project site is designated by the City of Pacifica as Parks and Open Space with a is zoning of Park and Utilities. Further, there are no known mines or wells on the Project site or within the immediate Project vicinity which could be affected by Project activities (DOC 2025b and DOC 2025c).

The Project would not result in the loss of availability of locally important mineral resource recovery sites delineated by local general plans and there would be no impacts from the Project.

References

City of Pacifica, 2022. City of Pacifica General Plan 2040. Adopted July 2022. Available: https://cityofpacifica.egnyte.com/dl/vGfg0Mii2c. Accessed July 29, 2025.

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____, 2025a. CGS Information Warehouse: Mineral Land Classification. Available: https://maps.conservation.ca.gov/cgs/informationwarehouse/index.html?map=mlc. Accessed July 29, 2025.

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3.3.13 Noise

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

Environmental Setting

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise can be defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level has become the most common descriptor used to characterize the loudness of an ambient sound level. Sound pressure level is measured in decibels (dB), with 0 dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. Therefore, when assessing potential noise impacts, sound is measured using an electronic filter that de-emphasizes the frequencies in a manner corresponding to the human ear's decreased sensitivity to low and extremely high frequencies instead focusing on the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). All sound pressure levels and sound power levels reported below are A-weighted.

Noise Exposure and Ambient Noise

An individual's noise exposure is a measure of the noise experienced by the individual over a period of time. A noise level is a measure of noise at a given instant in time. However, noise levels rarely persist consistently over a long period of time. In fact, noise varies continuously with time with respect to the contributing sources in the noise environment. Noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. Background noise levels change throughout a typical day, but do so gradually, corresponding with the addition and subtraction of distant noise sources and atmospheric conditions. The addition of short duration single event noise sources (e.g., aircraft flyovers, motor vehicles, sirens) makes noise constantly variable throughout a day.

These successive additions of sound to the noise environment vary the noise level from instant to instant, requiring the measurement of noise exposure over a period of time to legitimately characterize a noise

environment and evaluate noise impacts. This time-varying characteristic of environmental noise is described using statistical noise descriptors. Different noise descriptors used in this analysis to characterize environmental noise are summarized below:

L_{eq}: The equivalent sound level is used to describe noise over a specified period of time, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: The instantaneous maximum noise level measured during the period of interest.

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers at industrial plants often experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation exists in the individual thresholds of annoyance, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way the new noise compares to the existing noise levels that one has adapted to, which is referred to as the "ambient noise" level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise would be judged by those hearing it. Regarding increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference when the change in noise is perceived but does not cause a human response;
- A change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

These relationships occur in part because of the logarithmic[5] nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, two noise sources do not combine in a simple additive fashion, rather they combine logarithmically. For example, if two identical noise sources produce noise levels of

[5] Unlike a linear scale, in a *logarithmic* scale, the ratio of successive intervals is not equal to one. Each interval on a logarithmic scale is some common factor larger than the previous interval. A typical ratio is 10, so that the marks on the scale read: 1; 10; 100; 1,000; 10,000; etc., doubling the variable plotted on the x-axis.

50 dBA, the combined sound level would be 53 dBA, not 100 dBA. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, when 70.0 dBA ambient noise levels are combined with a 60.0 dBA noise source, the resulting noise level equals 70.4 dBA.

Noise Attenuation

Sound level naturally decreases with more distance from the source. This basic attenuation rate is referred to as the *geometric spreading loss*. The basic rate of geometric spreading loss depends on whether a given noise source can be characterized as a point source or a line source. Point sources of noise, including stationary mobile sources such as idling vehicles or on-site construction equipment, attenuate (lessen) at a rate of 6.0 dBA per doubling of distance from the source. In many cases, noise attenuation from a point source increases to 7.5 dBA for each doubling of distance due to ground absorption and reflective wave canceling. These factors are collectively referred to as *excess ground attenuation*. The basic geometric spreading loss rate is used where the ground surface between a noise source and a receiver is reflective, such as parking lots or a smooth body of water. The excess ground attenuation rate (7.5 dBA per doubling of distance) is used where the ground surface is absorptive, such as soft dirt, grass, or scattered bushes and trees.

Widely distributed noises such as a street with moving vehicles (a “line” source) would typically attenuate at a lower rate of approximately 3.0 dBA for each doubling of distance between the source and the receiver. If the ground surface between source and receiver is absorptive rather than reflective, the nominal rate increases to 4.5 dBA for each doubling of distance. Atmospheric effects, such as wind and temperature gradients, can also influence noise attenuation rates from both line and point sources of noise. However, unlike ground attenuation, atmospheric effects are constantly changing and difficult to predict.

Trees and vegetation, buildings, and barriers reduce the noise level that would otherwise occur at a given receptor distance. However, for a vegetative strip to have a noticeable effect on noise levels, it must be dense and wide. For example, a stand of trees must be at least 100 feet wide and dense enough to completely obstruct a visual path to the roadway to attenuate traffic noise by 5 dBA (Caltrans, 2009). A row of structures can shield more distant receivers depending upon the size and spacing of the intervening structures and site geometry. Similar to vegetative strips discussed above, noise barriers, which include natural topography and soundwalls, reduce noise by blocking the line of sight between the source and receiver. Generally, a simple noise barrier that breaks the line of sight between source and receiver will provide at least a 5-dBA reduction in noise.

Vibration

Vibration is an oscillatory motion through a solid medium in which the motion’s amplitude can be described in terms of displacement, velocity, or acceleration. There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal and is typically expressed in units of inches per second (in/sec). The PPV is most frequently used to describe vibration impacts on buildings. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe

vibration (Federal Transit Administration [FTA], 2018). Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration.

Some common sources of ground-borne vibration are trains, heavy trucks traveling on rough roads, and construction activities such as blasting, pile driving, and operation of heavy earth-moving equipment. The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. In residential areas, the background vibration velocity level is usually around 50 VdB.

Sensitive Receptors

Human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and can cause stress and hearing loss. Given these effects, some land uses are considered more sensitive to ambient noise levels than others. In general, residences, schools, hotels, hospitals, and nursing homes are considered to be the most sensitive to noise. Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate are also sensitive to noise. Commercial and industrial uses are considered the least noise-sensitive.

The Project site is surrounded mostly by wilderness recreation area and is located north of a residential neighborhood made up of primarily single-family housing at the easternmost point of Fassler Avenue. According to the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment*, distances to noise sensitive land uses are measured from the center of the project site (FTA, 2018). Following the widely referenced FTA guidelines, the nearest noise sensitive receptor is a residence located 350 feet to the south of the project site.

Vibration can be assessed through potential building damage and potential human annoyance. Any type of building would typically be considered sensitive to vibration impact since building damage would be considered a permanent negative effect. Fragile structures, which often include historic buildings, are most susceptible to damage and are of particular concern for vibration analysis. Human annoyance effects from groundborne vibration are typically only considered inside occupied buildings, not at exterior areas such as residential yards, parks or other open spaces. Typically, vibrations that would be considered sensitive to human annoyance caused by groundborne vibration are the same as those considered sensitive to noise impacts, including residences, schools, hospitals, churches, and public libraries. Following FTA's *Transit Noise and Vibration Impact Assessment,* vibration sensitive land uses are measured from the nearest location on the project site where vibratory equipment would operate (FTA 2018). The nearest vibration sensitive location is a single-family residence 45 feet south of the project site.

Existing Noise Environment

To characterize ambient noise conditions at the project site, short-term 15-minute noise monitoring was conducted at residences to the south of the project site by Environmental Science Associates on May 15, 2025. **Figure 3-4** displays the location of both short-term noise monitoring sites in relation to the project site.

Figure 3-4
Noise Monitoring Location

These L_{eq} (equivalent continuous sound level) values were measured on a typical weekday under calm, dry weather conditions and ranged from 45.5 dBA and 46 dBA. No atypical or transient noise sources were observed during measurements. **Table NOI-2** details the ambient noise measurements captured at the short-term monitoring sites. These noise levels would serve as references for ambient noise impact analysis from construction and operations of the project.

TABLE NOI-2
SHORT TERM (15-MINUTE) MONITORED AMBIENT NOISE ENVIRONMENT IN THE VICINITY OF THE PROJECT SITE

Noise Monitoring Location	Date	Time	Leq (dBA)
ST-1: South of the Project Site at the eastmost end of Fassler Ave	Thursday, May 15, 2025	2:53 p.m. – 3:08 p.m.	45.5
ST-2 South of the Project Site at the Northmost end of Vega Ct	Thursday, May 15, 2025	2:31 p.m. – 2:46 p.m.	46

Regulatory Setting

Federal, state, and local agencies regulate different aspects of environmental noise. Federal and state agencies generally set noise standards for mobile sources such as aircraft and motor vehicles, while regulation of stationary sources is left to local agencies. Local regulation of noise involves implementation of general plan policies and noise ordinance standards. Local general plans tend to identify general principles intended to guide and influence development plans; local ordinances establish standards and procedures for addressing specific noise sources and activities.

Federal

The FTA has issued guidance on how to assess noise and vibration impacts from construction-related activities in its report *Transit Noise and Vibration Impact Assessment* (FTA, 2018). FTA's guidance is designed to be used by project sponsors seeking to evaluate noise and vibration impacts during the environmental review process. The document focuses primarily on operation of transportation projects, but it also provides guidance on the use of heavy machinery and associated sound and vibration levels during construction, including the types of equipment that would be deployed under the Project. FTA's guidance also describes a range of measures for controlling excessive noise and vibration.

Construction Noise. The FTA guidelines identify reasonable criteria for assessing construction noise impacts. Table 7-2 of this manual, General Assessment Construction Noise Criteria, the hourly noise level at which adverse community reaction to construction noise could occur for residential land uses in terms of hourly averages is 90 dBA L_{eq} for the daytime hours (FTA, 2018). The FTA recommends that the distances used to estimate construction noise levels at the closest sensitive receptors should be based on middle of the construction site.

Vibration. The FTA has adopted vibration standards that are used to evaluate potential building damage impacts related to construction activities. The vibration damage criteria adopted by the FTA are shown in **Table NOI-3**.

TABLE NOI-3
CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (in/sec)
I. Reinforced-concrete, steel, or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: FTA, 2018

State

Vehicle Operations. The State of California establishes noise limits for vehicles licensed to operate on public roads. The pass-by standard for heavy trucks is consistent with the federal limit of 80 dBA. The pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanctions on vehicle operators by State and local law enforcement officials.

Vibration. The California Department of Transportation (Caltrans) has developed guidance on addressing vibration issues associated with construction, operation, and maintenance of transportation projects (Caltrans, 2020). **Table NOI-4** shows the Caltrans criteria for human response to transient vibration.

TABLE NOI-4
HUMAN RESPONSE TO TRANSIENT VIBRATION

Human Response	PPV (in/sec)
Severe	2.0
Strongly Perceptible	0.9
Distinctly Perceptible	0.24
Barely Perceptible	0.035

SOURCE: Caltrans, 2020.

Local

City of Pacifica General Plan

The City of Pacifica 2040 General Plan, adopted in July 2022, outlines several policies intended to reduce noise within the City. The following policies are applicable to the Project:

> ***NO-G-2: Acceptable Noise Environment.*** Strive to achieve an acceptable noise environment for the environmental, health and safety needs of present and future residents of Pacifica.
>
> ***NO-G-3: Sensitive Land Uses.*** Protect noise sensitive land uses, such as schools, hospitals, and senior care facilities, from encroachment of and exposure to excessive levels of noise.
>
> ***NO-I-1: Community Noise Level Standards.*** Use the Community Noise Level Exposure Standards (shown in **Table NOI-5**), as review criteria for new land uses. Require all new

development that would be exposed to noise greater than the "normally acceptable" noise level range to reduce interior noise through design, sound insulation, or other measures.

TABLE NOI-5
CITY OF PACIFICA ALLOWABLE NOISE EXPOSURE

Noise-Sensitive Land Use	Outdoor Activity Areas[a]	Interior Spaces	
	DNL (dBA)	DNL (dBA)	L_{eq} (dBA)[b]
Residential	65	45	--
Transient Lodging (Hotels, Motels)	65	45	--
Hospitals, Nursing Homes	65	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	65	--	45
Office Buildings	--	--	45
Schools, Libraries, Museums	--	--	45

NOTES:
a. Outdoor activity areas generally include backyards of single-family residences and outdoor patios, decks or common recreation areas of multi-family developments.
b. As determined for a typical worst-case hour during periods of use.

NO-I-6: Construction Noise. Continue to limit hours for certain construction and demolition work to reduce construction-related noises.

City of Pacifica Municipal Code

Title 5, Public Welfare, Morals, and Conduct, Chapter 10, Loud, Disturbing, Unusual, and Unnecessary Noises, establishes that loud, unnecessary, unnatural, or unusual noises which are prolonged, unusual, and unnatural in their time, place and use are a detriment to the public health, comfort, safety, and welfare of the City's residents. The chapter includes the following standards that are relevant to the Project:

- **Section 5-10.02** (Unlawful) sets forth that it shall be unlawful for any person to make or continue, or cause to be made or continues, any loud, disturbing, unnecessary or unusual noises or any noise which annoys, disturbs, injures, or endangers the comfort, health, repose, peace, or safety of other persons within the City.
- **Section 5-10.03** (Enumerated), declares the following noises, among others, to be loud, disturbing, unnecessary, and unusual noises in violation of the Municipal Code:
  - *Exhausts*: The discharge into the open air of the exhaust of any steam engine, stationary internal combustion engine, motorboat, or motor vehicle, except through a muffler or other device which will effectively prevent loud or explosive noises therefrom (Section 5-10.03(g));
  - *Defective or loaded vehicles*: The use of any automobile, motorcycle, or vehicle so out of repair, so loaded, or in such manner as to create loud and unnecessary grating, grinding, rattling, or other noise (Section 5-10.03(h));
  - *Loading and unloading vehicles and opening boxes*: The creation of loud and excessive noise in connection with loading or unloading any vehicle or the opening and destruction of bales, boxes, crates, and containers (Section 5-10.03(i));

  - *Pile drivers, hammers, and similar equipment*: The operation, between the hours of 8:00 PM and 7:00 AM, of any pile driver, steam shovel, pneumatic hammer, derrick, steam or electric hoist, or other appliance, the use of which is attended by loud or unusual noise (Section 5-10.03(m)); and

- **Section 8-1.05** (Amendments: Section 105.8 "Hours of construction"), the hours of construction for any project for which a building permit is required within the City of Pacifica shall be limited to the hours of 7:00 a.m. to 7:00 p.m. on Monday, Tuesday, Wednesday, Thursday, and Friday. The hours of construction shall be limited to 9:00 a.m. to 5:00 p.m. on Saturday and Sunday.

Section 8-1. of the City of Pacifica Municipal Code restricts the hours of construction for any project for which a building permit is required within the City of Pacifica to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and 9:00 a.m. to 5:00 p.m. on Saturdays and Sundays.

Discussion

Would the Project:

a) Result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant. The Project would generate noise primarily during construction as discussed below. Once operational, the Project would not include any new stationary noise sources or additional vehicle trips for maintenance. The only operation-related noise levels would be associated with occasional workers vehicles commuting to the Project site once a month for maintenance purposes. There would be no operational noise impact.

Project construction is anticipated to begin in April 2030and be completed by July 2031 over 326 workdays. Construction activities associated with the Project are detailed in Section 2.5.1 of the Project Description and would include:

- Mobilization / submittals / demolition / earthwork – April 2030 through July 2030 (75 workdays)
- Tank construction – August 2030– March 2031 (161 workdays)
- Disinfection / testing / startup / final earthwork and paving – March 2031 – April 2031 (45 workdays)
- Project substantial completion: May 2031
- Punch List / NOC – May 2031- July 7 2031

Noise impacts from construction would depend on the type of activity being undertaken and the distance to the receptor location.

Table NOI-6 shows typical noise levels produced by the types of construction equipment that are expected to be used for Project construction.

TABLE NOI-6
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Type of Equipment	L_{max} at 50 feet, dBA	Acoustical Usage factor (%)
Bore/Drill Rig	79	20
Concrete Mixer Truck	79	40
Crane	81	16
Dump Truck	76	40
Excavator	81	40
Flat Bed Truck	74	40
Grader	85	40
Paver	77	50

SOURCE: FHWA, 2017.

Construction noise impacts are most severe if construction activities take place during noise-sensitive hours (i.e., early morning, evening, or nighttime hours), in areas immediately adjoining noise-sensitive land uses, and/or when construction duration lasts over extended periods of time. The operation of each piece of off-road equipment at the Project site would not be constant throughout the day, as equipment would be turned off when not in use. This is accounted for in the acoustical usage factor for each equipment type, also shown in Table NOI-6. Over a typical workday, equipment would operate at different locations on the Project site and would not always operate concurrently. Although the City restricts construction hours to between 7:00 a.m. and 7:00 p.m. on weekdays and 9 a.m. and 5 p.m. on weekends, the Project would primarily limit construction activities to the hours of 8:00 a.m. to 5:00 p.m. on weekdays. Extended hours of construction (i.e., between 7 a.m. and 7 p.m. on weekdays as allowed by the City code) are anticipated to occur in limited instances to accommodate "continuous pour" events during construction, when an entire component would be constructed and a constant pour of concrete would be needed to complete the task (e.g., for the foundation slab, and roof). No work is anticipated to occur between the hours of 10:00 p.m. and 7:00 a.m. or on weekends and holidays. Therefore, project construction hours would comply with City code requirements.

ESA modeled the project's potential construction noise levels from the Federal Highway Administration's Roadway Construction Noise Model (RCNM). The noise analysis estimates daytime construction noise levels that the closest sensitive receptors would be exposed to. There are no quantitative standards for construction noise specified by the City of Pacifica General Plan, municipal code, or North Coast County Water District. In the absence of local numeric construction noise thresholds, this analysis uses the FTA's daytime 1-hour L_{eq} level of 90 dBA to evaluate the significance of potential construction noise levels (FTA, 2018). Consistent with the methodology recommended by the FTA in its *Transit Noise and Vibration Assessment Manual* (FTA 2018), the two noisiest pieces of equipment used for Project construction are assumed to be operating simultaneously at the center of the Project construction area, which is approximately 350 feet from the nearest sensitive residential receptors. **Table NOI-7** summarizes the modeled construction noise levels associated with the project.

TABLE NOI-7
ESTIMATED CONSTRUCTION NOISE LEVELS

	Construction Activity	
	Standard Construction	**Concrete Pours**
Sensitive Receptor	Residential	Residential
Loudest Two Pieces of Construction Equipment	Excavator / Grader	Concrete mixer truck b
Equipment Noise Level at 50 feet (Lmax)	85 dBA	85 dBA
Distance from receptor (feet)	350	350
Attenuated Noise Level (Leq) a	66 dBA	64 dBA
Noise Threshold	90 dBA	90 dBA
Exceeds Daytime Threshold	No	No

NOTES:
a. Attenuated noise level estimates assume a straight line between the center of the project site and the closest receptor and do not account for any differences in elevation or potential topographic shielding that may occur due to this elevation change.
b. Estimates combined noise levels of two concrete mixer trucks operating simultaneously during possible concrete "continuous pour" events.

SOURCE: RCNM

At 350 feet, the Project would generate1-hour daytime construction noise levels of 66 dBA for typical construction activities (e.g., grading) and 64 dBA for as needed "continuous pour" events. Both noise levels are well below the FTA's daytime 1-hour construction noise criteria. Therefore, noise impacts from construction equipment at the project site would not be significant.

In addition to construction equipment, noise would also be generated from construction vehicles transporting workers and materials to and from the Project site. The Project would generate approximately 13 worker trips per day during the earth work and final earthwork and paving phases, and 53 truck trips per day during the 40-day earthwork construction phase. Over the course of the typical 9-hour construction workday, the project would result in approximately 6 truck trips per hour. As noted, a possible exception would be concrete deliveries during "continuous pour" events during construction, when an entire component would be constructed and a constant pour of concrete would be needed to complete the task (e.g., for the foundation slab). These "continuous pour" events would be limited to approximately five days or less given the proposed tank would be constructed from concrete.

Off-site construction traffic Construction traffic would travel on Cabrillo Highway to Fassler Avenue to access the Project site. Existing traffic on Fassler Avenue is anticipated to consist of residential trips and trips to and from Terra Nova Highschool on Terra Nova Blvd. East of Terra Nova Boulevard, Fassler Avenue increases in grade, requiring additional engine power to reach the project site. Vehicle trips on Fassler Avenue east of Terra Nova Boulevard are minimal. Worker trips and haul truck trips would result in a temporary increase in traffic noise on Fassler Avenue of approximately 80 dBA during discrete truck trip events; however, this temporary increase in noise is estimated to occur once every ten minutes over no more than a 40-day period during daytime hours only. Although unlikely to occur, continuous concrete pour activities may also result in additional truck noise for less than five days. Each concrete truck trip is estimated to generate temporary traffic noise levels of 80 dBA to 90 dBA. The temporary, intermittent increase in haul truck and concrete truck trips would not exceed the FTA's 90 dBA L_{eq} daytime standard and, therefore, would not result in a significant impact.

Upon completion of Project construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Therefore, additional truck trips resulting from maintenance of the tanks and appurtenances would be minimal and the associated increase in vehicle noise would not be perceptible. Noise generated by Project maintenance would therefore result in a less-than-significant impact.

As the above analysis demonstrates, the Project would not generate a substantial temporary or permanent increase in noise levels in the vicinity of the Project in excess of applicable standards. This impact would be less than significant.

b) Result in the generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant. Construction activity can result in varying degrees of ground-borne vibration, depending on the type of soil, equipment, and methods employed. Operation of construction equipment can cause ground vibrations that spread through the ground and diminish in strength with distance. Buildings on the soil near the construction site respond to these vibrations with varying results, ranging from no perceptible effects at the lowest levels, low rumbling sounds and perceptible vibrations at moderate levels, and slight damage at the highest levels.

Equipment expected to be used for Project construction is shown in Table NOI-3. Construction vibration may generate perceptible vibration when impact equipment or heavy earth moving equipment are used; however, there are no structures of historical significance on or in the vicinity of the Project (refer to the Section 3.2.5, *Cultural Resources* for additional details about historic resources). The nearest structures are located 45 feet from the boundary of the Project site.

As shown in Tables NOI-2 and NOI-3, the FTA and Caltrans have adopted vibration standards that are used to evaluate potential impacts related to sensitive receiving land uses from vibration. The FTA identifies 0.2 in/sec PPV as the level at which potential damage could result to buildings of conventional construction. Caltrans identifies 0.24 in/sec PPV as the level at which vibration is distinctly perceivable to humans.

Of the equipment shown in Table NOI-4, the bore drill would be the highest vibration generating equipment used for Project construction. The FTA vibration analysis guidelines measure vibration levels from the nearest piece of construction equipment to the receptor (FTA 2018). Using this guidance, the nearest sensitive receptor is 45 feet from the project site. Based on typical construction equipment vibration levels provided by the FTA, at this distance, ground-borne vibration levels from the operation of a drill rig would attenuate to 0.04 in/sec PPV at the nearest sensitive receptor (FTA, 2018). This vibration level at the nearest receptor would be well below the building damage and human annoyance vibration thresholds of 0.2 in/sec and 0.24 in/sec, respectively. Therefore, operation of construction equipment would result in less-than-significant vibration impacts at nearby residences. Vibration impacts from other equipment used would be lower than those generated by the drill rig. Further, the operation and location of each piece of construction equipment at the Project site would not be constant throughout the day, equipment would be operating at different locations within the Project site and would not always be

operating concurrently. Consequently, vibration levels during the majority of the construction period at the nearest off-site residences would be much lower. Therefore, ground-borne vibration impacts during construction would be less than significant.

Once operational, the Project would not include any new sources of vibration. Therefore, the Project would have no operational impacts resulting from ground-borne noise and vibration.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels?

No Impact. The closest airport is San Francisco International Airport, approximately 4.5 miles east of the Project site. The Project site is well outside of the 65 CNEL noise contours for the airport (San Francisco International Airport, 2024). Therefore, Project occupants would not be exposed to excessive noise levels generated by aircraft, and there would be no impact with respect to this criterion.

References

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3.3.14 Population and Housing

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

Discussion

Would the Project:

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

No Impact. The Project would not include any new residential development or other infrastructure that would either directly or indirectly induce substantial unplanned population growth in the project area. The Project includes the construction of a new 1.2 MG water tank in the same parcel as the existing tank as well as driveway paving and other site improvements. The intent of the Project is to increase reliability of water supply and increase emergency and fire water storage capacity in the District's southern service area. The Project would not remove any existing barriers to growth that have not been accounted for in the City of Pacifica General Plan or other regional planning and forecasting documents (City of Pacifica, 2022). Therefore, the Project would not induce population growth and there would be no impact under this criterion.

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

No Impact. The Project does not involve demolition of existing housing or require the construction of housing elsewhere. Furthermore, the Project site would not cause physical displacement of existing population and housing even though there is residential housing in proximity. The Project would not cause a significant environmental impact due to unplanned or induced population growth and/or displaced population and housing. Therefore, the Project would not necessitate construction of replacement housing elsewhere and there would be no impact.

References

City of Pacifica, 2022. City of Pacifica General Plan 2040. Adopted July 2022. Available: https://cityofpacifica.egnyte.com/dl/vGfg0Mii2c. Accessed July 29, 2025.

3.3.15 Public Services

Issues:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES —				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Environmental Setting

Public services are those that are intended to serve and provide benefits to a community's welfare and livability. Public services include fire and police protection, schools, parks, and other public facilities (e.g., recreational facilities, hospitals). Additional discussion and analysis of public services may be found in Section XVII, Recreation; Section XIX, Utilities; and Section XX, Wildfire.

Fire Protection Services

The Project is not located in a Fire Hazard Severity Zone in a State Responsibility Area; however, the Project is located within a Local Responsibility Area (CAL FIRE 2024). Fire protection and medical emergency services in Pacifica are provided by the North County Fire Authority, a Joint Powers Authority (JPA) collaboration between the cities of Daly City, Brisbane, and Pacifica formed in 2003. There are two fire stations located in Pacifica, one each at the north and south ends of the City.[6] The nearest fire station is Fire Station 72 at 1100 Linda Mar Avenue in the Pacific Manor District, approximately 2.4 miles south of the Project.

Police Protection Services

Police protection services in Pacifica are provided by the Pacifica Police Department. There is one police station in Pacifica, located at 2075 Coast Highway, which is approximately 2.25 miles north of the Fassler tank location. The Police Department staffs approximately 1 officer per 1,000 residents and handles dispatch services on evenings and weekends for the Department of Public Works and the North Coast County Water District.[7]

Schools

The City of Pacifica is part of two school districts that consist of three high schools, five middle/junior high schools, and nine elementary schools Terra Nova High School is approximately 0.31 mile (1,650 feet) southeast of the Project site at 1450 Terra Nova Blvd. The Ortega School is located approximately

6 City of Pacifica, 2025. Fire. Available at: https://www.cityofpacifica.org/departments/fire. Accessed 3/21/2025.

7 City of Pacifica, 2022. City of Pacifica General Plan 2040. July. Available at: https://www.planpacifica.org/general-plan. Accessed April 11, 2025.

0.85 mile southwest of the Project site at 1283 Terra Nova Blvd. Cabrillo School is located approximately 1.10 mile southwest of the Project site at 601 Crespi Drive.[8]

Parks

The Project site is located on lands zoned for utility use and is adjacent to lands owned by the City zoned as "parks and accessible open space." The Project site is approximately 0.22 mile south of the GGNRA and is adjacent to, and includes portions of, the Ahni trail.

Libraries

Pacifica has two library branches; the Pacifica Sanchez Library located approximately 1.17 mile due south of the Project site at 1111 Terra Nova Blvd, and the Pacifica Sharp Park Library located approximately 2.25 miles northwest of the Project site at 104 Hilton Way.[9]

Regulatory Setting

Federal

There are no mandatory federal regulations that govern the provision of local public services.

State

Uniform Fire Code

The Uniform Fire Code includes regulations pertaining to construction, maintenance, and use of buildings. Topics addressed in the Uniform Fire Code include fire department access; fire hydrants, automatic storage and use; provisions intended to protect and assist fire responders; industrial processes; and many other general and specialized fire-safety requirements for new and existing buildings and their surrounding premises. The code contains specialized technical regulations related to fire, property, and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which include regulations for building standards (as set forth in the CBC); fire protection and notification systems; fire protection devises such as extinguishers and smoke alarms; high-rise building and childcare facility standards; and fire suppression training standards.

Division of Occupational Safety and Health

In accordance with California Code of Regulations, Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Equipment, the Division of Occupational Safety and Health has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

8 City of Pacifica, 2025. Schools. Available at: https://www.cityofpacifica.org/about-us/residents/schools. Accessed April 11, 2025.

9 City of Pacifica, 2025. Libraries. Available at: https://www.cityofpacifica.org/about-us/residents/libraries. Accessed April 11, 2025.

Essential Services Building Seismic Safety Act

The Essential Services Building Seismic Safety Act of 1986 (California Health and Safety Code, Sections 16000–16022) applies to fire stations, police stations, and other public facilities that respond to emergencies. This law is intended to ensure that essential-services buildings can continue to serve the public after a disaster and are designed and constructed to minimize fire hazards. In addition, these buildings and the nonstructural components vital to their operation must be able to resist, insofar as practical, the forces created by earthquakes, gravity, fire, and wind.

Emergency Response/Evacuation Plans

In 2008, Governor Schwarzenegger signed AB 38, the California Emergency Services Act, which merged the duties, powers, purposes, and responsibilities of the Governor's Office of Emergency Services and the Governor's Office of Homeland Security into a new cabinet-level agency called the California Emergency Management Agency (Cal EMA). The legislation authorizes Cal EMA to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the state withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster. Cal EMA serves as the lead state agency for emergency management and coordinates the state response to major emergencies in support of local government. The primary responsibility for emergency management resides with local government. SEMS provides the mechanism by which local government requests assistance from Cal EMA, and as such, Cal EMA maintains oversight of the state's mutual aid system. Cal EMA may task state agencies to perform work outside their day-to-day and statutory responsibilities and serves as the lead agency for obtaining federal resources.

Local

City of Pacifica General Plan 2040

The City of Pacifica General Plan 2040 contains the following policies and implementation programs applicable to public services.[10]

Public Safety and Emergency Management

Guiding Policies

SA-G-9: Emergency Response. Foster an efficient and coordinated response to emergencies and natural disasters.

SA-G-10: Public Awareness. Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures.

SA-G-11: Disaster Preparation. Make infrastructure investments, enforce regulations, and disseminate information that will improve disaster response and recovery, with the goal of minimizing damage to people and property.

[10] City of Pacifica 2022

Implementing Policies

***SA-I-108: Emergency Water Capacity*.** Work with the Water District to ensure that it has a plan and infrastructure for providing adequate water service and storage during and immediately after an emergency, including a major seismic event.

Discussion

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

a.i) Fire protection?

Less than Significant. As discussed in the Environmental Setting, there are numerous public services facilities surrounding the Project area and no additional housing or increase of population would occur as a result of the Project's implementation. The District proposes to replace the existing Fassler water tank with a larger water tank; in the event of a fire, this would result in more water being available for use in the vicinity of the Project site by the North County Fire Authority. This would be consistent with the City of Pacifica General Plan Guiding Policy SA-G-11, by making an infrastructure improvement that would improve disaster response and recovery. The Project would also be consistent with General Plan Policy SA-I-108 as it would support the goal of working with District to ensure that it has a plan and infrastructure for providing adequate water service and storage during and immediately after an emergency, including a major seismic event. The Project's impacts on fire services would be less than significant.

a.ii) Police protection?

a.iii) Schools?

a.iv) Parks?

a.v) Other public facilities?

No Impact. As discussed in the Environmental Setting, there are numerous public services facilities surrounding the Project area and no additional housing or increase of population would occur as a result of the Project's implementation. The Project represents no change in land use and is not anticipated to draw increased demand for additional public services**.** The Project would not include any housing or otherwise result in the need for new government facilities or altered government facilities, i.e. schools or libraries. Furthermore, the Project would not result in any significantly increased demand for additional public services that would require new or altered facilities, including fire and police protection.

As discussed in Section XVII, *Transportation*, the Project is not anticipated to permanently alter conditions for emergency response. There would be no adverse impact to public service response times or performance objectives attributable to the construction or operation of the Project. Therefore, because the Project would not include changes that would result in the need for any new public service facilities such as construction of new schools, parks, or fire stations, nor effect response times or otherwise impact public services, there would be no impact.

References

CAL FIRE (California Department of Forestry and Fire Protection), 2024. Fire hazard Severity Zone in State Responsibility Area. Available: https://calfire-forestry.maps.arcgis.com/apps/webappviewer/index.html?id=988d431a42b242b29d89597ab693d008. Accessed August 1, 2025.

3.3.16 Recreation

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
RECREATION —				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Environmental Setting

The Project would be constructed within the lands owned by the District, south of the GGNRA an 82,116-acre National Recreation Area which is a collection of landscapes throughout the Bay Area managed by the National Park Service. The Project site is south of Sweeney Ridge, at 1,470 acres, Sweeney Ridge is the largest public open space tract in the City of Pacifica. The park, reaching an elevation of 1,220 feet, offers views to Mount Tamalpais to the north, Mount Diablo to the east, Montara Mountain to the south, and the Farallon Islands to the west on clear days. The Project site runs along a portion of the Ahni Trail which starts at the eastern end of Fassler Avenue and runs through the Project site into the GGNRA, connecting to the Ahni Trail. The Ahni Trail is a 3.3 mile out and back trail utilized by hikers and mountain bikers that follows Sweeney Ridge and continues to the San Francisco Bay Discovery Site.

Recreation resources in the Project area outside of the Project site include various lands designated as "Other Protected Open Space" and "Partial Conservation with Development" in the City of Pacifica General Plan (City of Pacifica 2022). Additional recreation resources within a mile of the Project Site include: Terra Nova High School, Cabrillo Elementary School, Ortega Elementary School, and Vallemar Elementary School located approximately 0.31 miles southeast, 0.82 miles south, 0.95 miles southwest, and 1 mile northwest of the Project site which are designated as "School Playfield"; Oddstad Park approximately 0.71 miles south of the Project site; the Farallones View Trail approximately 0.22 miles north of the Project site; and a portion of Fassler Avenue which is designated as an "On-Street" trail which ends at the Ahni Trail Head mentioned above.

Regulatory Setting

Federal

Title 36 of the Code of Federal Regulations (Parks, Forests, and Public Property)

Section 1.1 Purpose. (a) The regulations in this chapter provide for the proper use, management, government, and protection of persons, property, and natural and cultural resources within areas under the jurisdiction of the NPS. (b) These regulations would be utilized to fulfill the statutory purposes of units of the National Park System: to conserve scenery, natural and historic objects, and wildlife, and to provide for the enjoyment of those resources in a manner that would leave them unimpaired for the enjoyment of future generations.

Golden Gate National Recreation Area (GGNRA) General Management Plan

The purpose of a general management plan /environmental impact statement (GMP/EIS) is to set forth a basic management philosophy for a park and to provide a frame work for future decision making. The National Parks and Recreation Act of 1978 (Public Law 95–625) requires the NPS to prepare and revise a GMP/EIS for each park that will include: (1) measures to preserve park resources, (2) indications of the types and general intensities of development associated with public enjoyment and use of the park, (3) identification of visitor carrying capacities, and (4) indications of potential external boundary modifications. NPS Director's Order 2: Park Planning requires a GMP/EIS to clearly describe the specific resource conditions and visitor experience to be achieved and identify the kinds of use, management, and development that will be appropriate in achieving and maintaining those conditions (NPS 2014a; NPS 2014b).

National Park Service 2006 Management Policies

The 2006 Management Policies state that the purpose of NPS interpretive and educational programs is to provide memorable educational and recreational experiences that will (1) help the public understand the meaning and relevance of park resources, and (2) foster development of a sense of stewardship. The programs do so by forging a connection between park resources, visitors, the community, and the National Park System (NPS, 2006).

State

No state statutes, regulations, plans, or policies govern this analysis pertaining to recreational resources.

Local

San Mateo County Trails Master Plan

The 2001 San Mateo County Trails Plan Update provides specific policies which are additions to and complement those in the General Plan. The General Plan policies combined with these policies serve as a guide for county action directed toward implementation of the County Trails Plan Map. However, it is recognized that the County must defer direct responsibility for implementation of many trail route segments identified on the County Trails Plan Map to the jurisdictions in which they are planned. These include but are not limited to: GGNRA, California State Parks, Mid-Peninsula Regional Open Space District, and cities. The County trails policies encourage coordinated decisions and actions by the cities, adjacent counties, and other trail providers to implement their particular segments of the Trails Plan in a way that is consistent with the County's vision (County of San Mateo 2001).

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to recreational resources, listed below (City of Pacifica 2022).

Open Space and Community Facilities Element

Guiding Policies

OC-G-5: Open Space Preservation. Preserve open space that protects natural resources, visual amenities, and public health and safety.

Discussion

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

Less than Significant. The Project would include replacing the existing Fassler Tank with a new a 1.2-million-gallon concrete water storage tank, installation of underground water conveyance pipes, site drainage facilities, a temporary trail safety barrier and partial trail expansion, tank appurtenances, groundwater level monitoring wells, perimeter fencing including chain-link removal and replacement, driveway paving, as well as installation of riprap, hydroseeding, and tree removal and planting.

As mentioned in Chapter 2, *Project Description*, the Ahni Trail runs parallel to the driveway leading to the Fassler Tank and would be maintained and separated from the driveway with concrete jersey barriers. A portion of the Trail would be regraded to provide adequate room for a construction vehicle, temporary construction partition, and 3' lane for Trail users. The tank site would be accessed from a steep gravel driveway beginning from the Ahni Trail Head parking lot and leading to the Fassler Tank. There is a vehicle gate separating the parking lot from the driveway. The existing gravel access road at the Trail parking lot would be maintained by the contractor during the construction duration to maintain access. Following completion of the other improvements the gravel driveway would be improved into a paved driveway.

As discussed in the *Environmental Setting* section, there are a number of open spaces, school playfields, and parks in the Project area. Further, as mentioned above, while the Ahni Trail would be modified during construction to provide a wider vehicle and pedestrian access way, access would be maintained during construction allowing for continued use. Additionally, the Farralones View Trail is nearby and also connects to the Ahni Trail which could provide alternate access to the Project area for recreationalists.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance and operations and maintenance would not affect continuing operation of the Ahni Trail following construction. As such, the Project would not 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 or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. Impacts would be less than significant.

References

City of Pacifica, 2022. City of Pacifica General Plan 2040. Adopted July 2022. Available: https://cityofpacifica.egnyte.com/dl/vGfg0Mii2c. Accessed July 29, 2025.

County of San Mateo, 2001. San Mateo County 2001 Trails Plan. San Mateo County California. Available: https://www.smcgov.org/media/72131/download?inline=. Accessed August 1, 2025.

NPS (National Park Service), 2006. Management Policies 2006. Available: https://www.nps.gov/orgs/1548/upload/ManagementPolicies2006.pdf. Accessed August 1, 2025.

____, 2014a. Golden Gate national Recreation Area Muir Woods National Monument Final General management Plan/Environmental Impact Statement. Volume 1. Available: https://marinconservationleague.jrdncrtv.com/advocacy/40-successes/advocacy/329-ggnra-gmp.html. Accessed August 1, 2025.

____, 2014b. Golden Gate national Recreation Area Muir Woods National Monument Final General management Plan/Environmental Impact Statement. Volume 2. Available: https://marinconservationleague.jrdncrtv.com/advocacy/40-successes/advocacy/329-ggnra-gmp.html. Accessed August 1, 2025.

3.3.17 Transportation

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

Environmental Setting

Three major routes connect the City of Pacifica to the rest of the region. State Route (SR) 1 traverses the west side of the City from north to south. SR 35 generally runs along the eastern edge of the City and is also a major north-south route. Sharp Park Road follows a southwest-northeast route through the center of Pacifica, connecting SR 1 with SR 35. It continues east of SR 35 in South San Francisco as Westborough Boulevard. Each of these major roadways intersect with Interstate-280, an eight-lane major regional freeway on the Peninsula located between one-half and two miles from the City of Pacifica. As the Project is located in the southern portion of the City, SR 1 would likely be the primary regional route which would be used for construction, operations, and maintenance related activities.

Fassler Avenue is designated as an "Arterial Roadway" and is the only road which provides direct access to the Project site, the road begins at a T-junction with SR 1 and terminates adjacent to the Project site.

The San Mateo County Transit District (SamTrans) provides bus service throughout San Mateo County and into San Francisco and Palo Alto. SamTrans provides local service in Pacifica as well as service to and from BART and Caltrain stations. There are no public transit services which have stops within or immediately adjacent to the Project site; however, the City's General Plan shows that there are two stops within walking distance from the Project site. This includes two local service routes, Route 14 which has a stop along Terra Nova Boulevard and Route 16 Which has a stop along Fassler Avenue (City of Pacifica 2022).

The Project would be constructed within the land owned by the District. The Project is also approximately 500 feet from the Ahni Trail Head which starts at the Eastern end of Fassler Avenue and runs through the Project site into the GGNRA. The Farallones View Trail and Ahni Trail are located approximately 0.22 mile north of the Project site.

The Ahni Trail is an unpaved trail which provides access to bikes and connects to Fassler Avenue allowing access to the GGNRA. There are no other existing bicycle facilities near the Project site; however, portions of Fassler Avenue are designated in the City's General Plan as proposed bicycle network improvement areas and locations for a Class IV and Class III trail (City of Pacifica 2022).

Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern this analysis.

State

California Department of Transportation

The California Department of Transportation (Caltrans) manages interregional transportation, including management and construction of the California highway system. In addition, Caltrans is responsible for permitting encroachments and regulation of the use of state roadways. There is one facility that falls under Caltrans' jurisdiction near the Project area, Highway 1; however, a Caltrans encroachment permit would not be required for the Project.

California Transportation Plan 2050

The California Transportation Plan (CTP) 2050 is the State's statutorily fiscally unconstrained long-range transportation roadmap for positive change that: provides a unifying and foundational policy framework for making effective, transparent, and transformational transportation decisions in California; addresses the varied transportation needs of urban, suburban, rural, and Tribal communities; and emphasizes implementation and identifies a timeline, roles, and responsibilities for each plan recommendation. The CTP does not contain projects, but policies and strategies required to close the gap between what the regional transportation plans aim to achieve and how much more is required to meet 2050 goals (Caltrans, 2021).

Senate Bill 743

Senate Bill (SB) 743 (SB 743), which became effective September 2013, initiated reforms to the CEQA Guidelines to establish new criteria for determining the significance of transportation impacts that "promote the reduction of greenhouse gas emissions, the development of multi-modal transportation networks, and a diversity of land uses." Specifically, SB 743 directed the Governor's Office of Planning and Research to update the CEQA Guidelines to replace automobile delay—as described solely by Level of Service or similar measures of vehicular capacity or traffic congestion—with VMT as the recommended metric for determining the significance of transportation impacts.

To advise lead agencies how to evaluate transportation impacts consistent with Senate Bill 743, the Governor's Office of Planning and Research (OPR) published the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (OPR, 2018). OPR's advisory contains technical recommendations regarding assessment of VMT, including thresholds of significance and mitigation measures.

The Office of Planning and Research has updated the CEQA Guidelines by adding a new section 15064.3 to the Guidelines, which became effective statewide July 1, 2020. CEQA Guidelines section 15064.3(a) defines vehicle miles travelled (VMT) as the amount and distance of automobile travel attributable to a project. CEQA Guidelines section 15064.3, subdivision (b), establishes criteria for evaluating a project's transportation impacts under CEQA. CEQA Guidelines section 15064.3(b)(1) states that for land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. As noted above, a lead agency has the discretion to choose the most appropriate methodology to evaluate VMT, including whether to express the change in absolute terms, per capita, per household, or any other measure.

Local

Plan Bay Area 2050

Plan Bay Area 2050 was prepared by Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission (MTC) to serve as the Bay Area's sustainable communities' strategy in accordance with SB 375. Adopted October 2021, Plan Bay Area 2050 provides an update to the region's long range transportation plan and sustainable communities strategy. Plan Bay Area includes ABAG's projections about housing, jobs, and population growth through 2050 based on historic and current trends, local land use plans, and the vision for housing construction to meet job demand within the region and support the Regional Housing Needs Allocation (RHNA). The plan provides a road map for accommodating this projected growth and connects it all to a transportation investment strategy that strives to move the Bay Area toward key regional goals for the environment, economy, and social equity. The land use vision in Plan Bay Area 2050 is advisory; adherence by each local jurisdiction is not compulsory. However, local transportation models must be consistent with the regional transportation model and some funding allocated by the Metropolitan Transportation Commission is based on consistency with Plan Bay Area (ABAG and MTC 2021).

San Mateo County Comprehensive Bicycle and Pedestrian Plan

The Countywide Bicycle and Pedestrian Plan provides a framework to help the City/County Association of Governments of San Mateo County (C/CAG) improve walking and bicycling conditions in the County of San Mateo. By recommending a connected network of biking and walking facilities based on the best practices in the field, the Plan aims to make biking and walking safer and more comfortable for all, and improve health, accessibility, and livability throughout the County (C/CAG 2021).

2023 San Mateo County Congestion Management Program

The 2023 Congestion Management Program (CMP) Update, prepared by the C/CAG, fulfills the State-mandated biennial requirement and outlines the county's strategy for monitoring and addressing traffic congestion. It assesses Level of Service, identifies performance metrics such as travel times and transit ridership, and supports Transportation Demand Management strategies. The CMP incorporates a tiered Land Use Impact Analysis Program and confirms that no roadway segments currently require deficiency plans. It also includes a seven-year Capital Improvement Program, aligns with regional modeling requirements, and details related programs. Compliance with CMP requirements is essential for jurisdictions to remain eligible for State and Federal transportation funding C/CAG 2023).

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to transportation services, listed below (City of Pacifica 2022).

Circulation Element

Guiding Policies

CI-G-4: Level of Service (LOS) for all Modes of Travel. Assess the performance of the transportation system by measuring how well pedestrians, bicycles, and transit vehicles as well as automobiles are able to move within and through the community.

CI-G-5: Vehicle Miles Traveled. Strive to reduce overall vehicle miles travelled by developing higher-density, mixed use areas, designing pedestrian-oriented streets, and improving transit options and efficiency.

CI-G-13: Recreational Access. Provide recreational access to coastal resources and public open space in keeping with Pacifica's natural environment, with links to regional trails and bicycle corridors.

Implementing Policies

CI-I-16: LOS for Pedestrians, Cyclists and Transit Users. Strive to maintain LOS C or better for pedestrians, cyclists, and transit users on all roadways, and impose mitigation measures as needed to achieve multi-modal service objectives.

CI-I-17: Vehicle Level of Service on Roadways Included in the Congestion Management Program. Accept an LOS E on SR 1 and SR 35, consistent with the C/CAG Congestion Management Program (CMP), in planning improvements.

CI-I-18: Vehicle Level of Service for Other Roadways and Intersections. For all roadways and intersections not included in the CMP network, strive to maintain LOS D for vehicles during peak periods. Allow level of service to exceed this threshold under the following circumstances:

- Constraints on development as would be required to achieve or maintain these standards would adversely impede achievement of this Plan's economic, land use and community development, and environmental goals and policies;
- Mitigation of congestion would negatively affect transit, bicycle or pedestrian circulation, or would conflict with General Plan goals for these alternative modes of circulation, for example by increasing crossing distances, increasing pedestrian safety risk, or restricting bicycle or transit access;
- Traffic congestion is a result of an effort to promote transit ridership and/or access, including the development of higher-density development in mixed use areas; or
- A demonstrated significant increase in transit ridership, carpooling, bicycling, and/or walking is achieved.

CI-I-25 Emergency Access. Require all developers to incorporate emergency access needs consistent with Title 10 of the Municipal Code.

City of Pacifica Pedestrian and Bicycle Master Plan

The City of Pacifica Bicycle and Pedestrian Master Plan Update 2020 establishes a long-term vision for improving walking and bicycling in the City of Pacifica through policy, program, and project recommendations. The Plan includes goals related to safety, connectivity, safe routes to school, and creating a culture that promotes biking and walking. The Plan recommends 34.5 miles of new and upgraded miles of on-street bicycle facilities and off-street shared-use paths and pedestrian improvements at 49 locations. Recognizing that the City has limited resources, the Plan prioritizes 14 bicycle projects and 16 locations for pedestrian improvements (City of Pacifica 2020).

Discussion

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

Less than Significant. The Project would result in the temporary addition of Project-related vehicles to local roadways over the 326 workday construction period. All equipment and materials would be transported to the site on public highways, local roads, and via the existing Project access road using standard transport vehicles. As discussed in the Environmental Setting section, the primary Project roadways would be SR 1, which would provide regional access to the Project site, and Fassler Avenue which would provide local access. Highway 1 is designated as a "Freeway and Multilane Highway" while Fassler Avenue is designated as an "Arterial Road," as such, trucks are an allowed use according to the City of Pacifica General Plan (City of Pacifica 2022).

As discussed in Chapter 2, Project Description, the Project would require approximately 1,050 truck trips for hauling in addition to those produced from the arrival and departure of construction workers. Whenever possible, construction haul trips to and from the Project site would occur during non-commuter peak hours of 8:00 AM to 5:00 PM weekdays. No work on weekends (Saturday/ Sunday) and holidays (e.g., Thanksgiving, Christmas) are anticipated. A possible exception would be concrete deliveries during "continuous pour" events during construction, when an entire component would be constructed and a constant pour of concrete would be needed to complete the task.

The majority of traffic would occur from the daily arrival and departure of workers and hauling of materials. The addition of worker round trips and hauling along local roads would be temporary, conclude with construction activities, and would not substantially affect circulation capacity; therefore, the trips would not substantially or permanently affect the capacity of the local roadways. Traffic control is not anticipated to be required along local roadways as the Project site is located along a gravel access road held under an existing easement. All worker parking would be accommodated at the staging area on-site; however, carpooling may be required, which would reduce the number of overall trips.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; these activities cannot be reliably anticipated or scheduled at this time. Additional truck trips resulting from maintenance of the tank and appurtenances would be minimal and Project-generated traffic from operations and maintenance would generally be infrequent; therefore, the Project operations and maintenance would not result in long-term degradation in operating conditions on local roadways used for Project operations and maintenance.

The County of San Mateo CMP monitors the local multi-modal transportation networks level of service (LOS) on roadways, bicycle and pedestrian facilities and transit services, and identifies improvements to the performance of this multi-modal system (C/CAG 2023). Congestion management programs and LOS standards established by congestion management agencies are intended to monitor and address long-term traffic conditions related to future development that generate permanent (on-going) traffic increases, and do not apply to temporary impacts associated with construction projects. As described above, following

construction, traffic increases associated with Project operation and maintenance would be minimal compared to existing conditions and would generally be infrequent. The Project would be operated and maintained by existing staff and would not require additional workers. Thus, there would not be a substantial increase in vehicle trips resulting from the Project.

Further, the Project would not conflict with adopted policies, plans, or programs related to public transit or alternative modes of transportation. As mentioned in the *Environmental Setting* section, there are bus stops in the vicinity of the Project area, but these are not located within or adjacent to the Project site; and as previously mentioned no road or land closures would be required as part of the Project. The Ahni Trail provides pedestrian and bicycle recreational access and runs parallel to the Project access road through the western edge of the Project site leading to the Fassler Tank. The Trail would be maintained and separated from the driveway with concrete jersey barriers during construction. Further, a portion of the Trail would be regraded to provide adequate room for construction vehicle access, a temporary construction partition from pedestrians, and an improved 3' lane for Trail users. During construction activities the Ahni Trail would remain operational; following the completion of construction activities the Trail would continue to operate under existing conditions and Project operation and maintenance would not affect the ongoing use of the Ahni Trail. The Project would not decrease the performance or safety of this facility and Project activities would not disrupt services along local public transit, bicycle, or pedestrian routes.

The Project would not conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. Impacts on the local circulation system would be less than significant.

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

Less than Significant. In accordance with Senate Bill (SB) 743, the new CEQA Guidelines Section 15064.3, subdivision (b) was adopted in December 2018 by the California Natural Resources Agency. These revisions to the CEQA Guidelines criteria for determining the significance of transportation impacts are primarily focused on projects within transit priority areas and shifts the focus from driver delay to a reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled (VMT) is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person.

Effective July 1, 2020, the County of San Mateo has transitioned to using VMT instead of LOS as the metric for determining transportation-related impacts under CEQA. However, the County has not yet adopted VMT screening criteria and thresholds (County of San Mateo 2020), therefore, the statewide guidance as documented in the Technical Advisory on Evaluating Transportation Impacts in CEQA (OPR 2018) would apply to the Project. Additionally, as noted in SB 743, local agencies may still use LOS to determine local impacts, and the County of San Mateo still requires projects to determine local impacts based on LOS. Therefore, both LOS and VMT analyses must be completed prior to Project approval (County of San Mateo 2025). However, while LOS can still be used to measure impacts related to vehicular delay, changes in LOS no longer constitute a significant environmental impact under CEQA (County of San Mateo 2020).

According to the Technical Advisory, absent substantial evidence indicating that a project would generate a potentially significant level of VMT or inconsistency with a Sustainable Communities Strategy or general plan, projects that generate fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact.

The standards outlined in the Technical Advisory direct the impact analysis to address a project's additional permanent automobile trips or VMT (i.e., project operations) in lieu of an existing model or method (OPR 2018). Because Project construction would be temporary (i.e., not permanent), construction activities do not necessitate analysis under CEQA Guidelines Section 15064.3(b).

However, as mentioned previously, the County of San Mateo also requires an analysis of LOS on Project roadways. The City of Pacifica General Plan notes that the intersection of SR 1 and Fassler Avenue currently operates at LOS D during AM and PM peak Hours and the stretch of Fassler Avenue from the intersection to Ebken Street operates at LOS A during AM and PM Peak Hours. LOS A is generally described as "free-flowing traffic conditions" while LOS D is generally described as "approaching unstable traffic flow" (City of Pacifica 2022). While the Project may result in temporary decreases in the LOS on Project roadways due to trips generated from hauling, worker trips, and material and vehicle transport, these impacts would be temporary and following Project construction LOS would generally be expected to return to pre-Project conditions.

As described above, following construction, traffic increases associated with Project operation and maintenance would be minimal compared to existing conditions and would generally be infrequent. The Project would be operated and maintained by existing staff and would not require additional workers. Thus, as compared to existing conditions there would not be a substantial increase in vehicle trips resulting from the Project; therefore, the Project would result in a negligible change in VMT and any new trips created from development of the Project would be far fewer than the 110 trip per day threshold. Considering the minimal number of as-needed trips for inspection and maintenance, Project operations would not result in a significant increase in relative VMT. Therefore, Project operations would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b). This impact would be less than significant.

As mentioned previously, the County of San Mateo also requires an analysis of LOS on Project roadways. The City of Pacifica General Plan notes that the intersection of SR 1 and Fassler Avenue currently operates at LOS D during AM and PM peak Hours and the stretch of Fassler Avenue from the intersection to Ebken Street operates at LOS A during AM and PM Peak Hours. LOS A is generally described as "free-flowing traffic conditions" while LOS D is generally described as "approaching unstable traffic flow" (City of Pacifica 2022). As described above, following construction, traffic increases associated with Project operation and maintenance would be minimal compared to existing conditions and would generally be infrequent. The Project would be operated and maintained by existing staff and would not require additional workers. Thus, as compared to existing conditions there would not be a substantial increase in vehicle trips resulting from the Project which could result in an inadequate LOS and impacts from Project operation and maintenance would be less than significant.

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

No Impact. The Project would use existing local roads and access roads for construction activities. The Project does not include the construction or design of any roadway infrastructure that would cause a safety risk to vehicle operations. The Project would not adversely alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features associated with large equipment transport. In addition, the Project would not permanently introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system.

As discussed in the Environmental Setting section, the primary Project roadways would be SR 1, which would provide regional access to the Project site, and Fassler Avenue which would provide local access. SR 1 is designated as a "Freeway and Multilane Highway" while Fassler Avenue is designated as an "Arterial Road," as such, trucks are an allowed use according to the City of Pacifica General Plan (City of Pacifica 2022). Additionally, the use of large trucks for construction activities would be temporary and would cease following the completion of Project construction.

As mentioned above, the Ahni Trail provides pedestrian and bicycle recreational access and runs parallel to the Project access road through the western edge of the Project site leading to the Fassler Tank. The Trail would be maintained and separated from the driveway with concrete jersey barriers during construction. A portion of the Trail would be regraded to provide adequate room for construction vehicle access, a temporary construction partition, and an improved 3' lane for Trail users. During construction activities the Ahni Trail would remain operational; following the completion of construction activities the Trail would continue to operate under existing conditions and Project operation and maintenance would not have any impact on the ongoing use of the Ahni Trail.

The existing driveway would be improved from a gravel roadway and would be paved following the installation of the new Fassler Tank and other site improvements; however, no significant changes are being made to its alignment, and the roadway is not open to public vehicle access.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Therefore, additional truck trips resulting from maintenance of the tank and appurtenances would be minimal and similar to existing operation and maintenance activities. As such, there would be no impacts due to geometric design or incompatible uses.

d) Result in inadequate emergency access?

Less than Significant. The Project would not change the configuration of the Project area's road network, and would not require temporary lane closures which would create reduced traffic capacity issues. As described above, construction would cause a less-than-significant increase in congestion on area roadways, though slow-moving construction-related vehicles could temporarily interfere with emergency response to the Project site (e.g., emergency service vehicles traveling behind the slow-moving truck). However, all vehicles are required by law to yield to responding emergency vehicles that have warning apparatus in operation, and it is not considered likely that heavy construction-related traffic would result

in permanent impacts to emergency access as these activities would be temporary and cease following the completion of construction.

The Ahni Trail provides pedestrian and bicycle recreational access to the GGNRA and runs parallel to the Project access road through the western edge of the Project site leading to the Fassler Tank. The Trail would be maintained and separated from the driveway with concrete jersey barriers during construction. Further, a portion of the Trail would be regraded to provide adequate room for construction vehicle access, a temporary construction partition, and an improved 3-foot lane for Trail users. During construction activities the Ahni Trail would remain operational; following the completion of construction activities the Trail would continue to operate under existing conditions and Project operation and maintenance would not have a significant impact on the ongoing use of the Ahni Trail. The existing driveway would also be improved which would involve paving the driveway; however, this driveway is not open to public vehicle access and the improvements would likely result in improvements to emergency access. Therefore, the Project would not result in permanent impacts which could result in inadequate emergency access and impacts would be less than significant.

References

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3.3.18 Tribal Cultural Resources

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
TRIBAL CULTURAL RESOURCES —				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or	☐	☒	☐	☐
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Environmental Setting

This section examines the potential impacts of the Project related to tribal cultural resources. For the purposes of this analysis, the term *tribal cultural resource* is defined as follows:

> *Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are listed, or determined to be eligible for listing, in the National Register of Historic Places (National Register), California Register of Historical Resources (California Register), or a local register of historical resources.*

Section V, *Cultural Resources*, provides a summary of the cultural resource studies completed for the Project. Much of the background context and methods used for the analysis of potential Project impacts on tribal cultural resources and cultural resources are the same. Therefore, to avoid redundancy, the information presented in Section V is not repeated here.

On April 24, 2025, ESA contacted the Native American Heritage Commission (NAHC) to request a search of the NAHC's Sacred Lands File (SLF) and a list of Native American representatives who may be interested in the Project. On April 29, 2025, the NAHC replied indicating that the SLF search was positive for sacred lands in the Project vicinity and included a list of 18 Native American representatives from 7 tribes who may have knowledge of tribal cultural resources at the Project sites or may otherwise be interested in the Project. The list included the Amah Mutsun Tribal Band, Amah Mutsun Tribal Band of Mission San Juan Bautista, Costanoan Rumsen Carmel Tribe, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Tribe of the San Francisco Bay Area (Muwekma Ohlone), the Ohlone Indian Tribe, and Wuksachi Indian Tribe-Eshom Valley Band.

On July 29, 2025, the District sent formal invitations via email to the Native American representatives whose contact information was provided by the NAHC. The emailed letters provided information on the Project and solicited input from the recipients.

On July 29, 2025, the Muwekma Ohlone responded to the District via email, acknowledging receipt of the Project notification email and advising of the Tribe's available services should the District make a request. It was unclear whether the Tribe was requesting government-to-government consultation under AB 52. The District responded to the Muwekma Ohlone on August 11, 2025, requesting clarification. On August 12, 2025, Muwekma Ohlone responded, thanking the District for their email response and did not request AB 52 tribal consultation.

No other Tribes responded to the tribal consultation efforts within 30 days, and no additional responses have been received to date.

Regulatory Framework

State

California Public Resources Code

Tribal Consultation (Assembly Bill 52)

In 2014, the California Legislature enacted Assembly Bill 52, which added provisions to the PRC regarding the evaluation of impacts on tribal cultural resources under CEQA, and requirements to consult with California Native American Tribes. In particular, Assembly Bill 52 requires lead agencies to analyze project impacts on tribal cultural resources separately from archaeological resources (PRC Sections 21074 and 21083.09). Assembly Bill 52 defines "tribal cultural resources" in PRC Section 21074 and requires lead agencies to engage in additional consultation procedures with respect to California Native American Tribes (PRC Sections 21080.3.1, 21080.3.2, and 21082.3).

Specifically, PRC Section 21084.3 states the following:

a) Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource.

b) If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2, the following are examples of mitigation measures that, if feasible, may be considered to avoid or minimize the significant adverse impacts:

1) Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

2) Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

(A) Protecting the cultural character and integrity of the resource.

(B) Protecting the traditional use of the resource.

(C) Protecting the confidentiality of the resource.

3) Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

4) Protecting the resource.

Assembly Bill 52–compliant tribal consultation is required to determine whether there are tribal cultural resources that may be affected by a project.

Discussion

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is

a.i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources. Code Section 5020.1(k), or

Less than Significant with Mitigation. Based on the results of the tribal outreach efforts, no known tribal cultural resources listed or determined eligible for listing in the California Register, or included in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k), pursuant to PRC Section 21074(a)(1), would be affected by the Project.

However, if any previously unrecorded archaeological resource were identified during ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts of the Project on the resource could be potentially significant. The potentially significant impact would be reduced to a less-than-significant level with the implementation of **Mitigation Measures CUL-1: Cultural Resources Awareness Training, Mitigation Measure CUL-2: Inadvertent Discovery of Cultural Resources, and Mitigation Measure CUL-3: Inadvertent Discovery of Human Remains.**

Mitigation Measures CUL-1, CUL-2, and CUL-3 (see Section V, *Cultural Resources*)

a.ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less than Significant with Mitigation. Based on the results of tribal outreach efforts, the District did not determine that a resource could potentially be affected by the Project to be a tribal cultural resource significant pursuant to criteria set forth in PRC Section 5024.1(c). Therefore, the Project is not anticipated to affect any such resources.

However, if any previously unrecorded archaeological resource were identified during ground-disturbing construction activities and were found to qualify as a tribal cultural resource pursuant to PRC Section 21074(a)(1) (determined to be eligible for listing in the California Register or in a local register of historical resources), any impacts of the Project on the resource could be potentially significant. Any such potentially significant impacts would be reduced to a less-than-significant level by implementing Mitigation **Measure CUL-1: Cultural Resources Awareness Training, Mitigation Measure CUL-2:**

Inadvertent Discovery of Cultural Resources, and **Mitigation Measure CUL-3: Inadvertent Discovery of Human Remains.**

Mitigation Measures CUL-1, CUL-2, and CUL-3 (see Section V, *Cultural Resources*)

References

NAHC (Native American Heritage Commission). 2025. Letter to Melissa Grijalva-Foreman, Environmental Science Associates, from Mathew Lin. "Re: Fassler Tank Replacement - D201500591.09 Project, San Mateo County." April 29, 2025

3.3.19 Utilities and Service Systems

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
UTILITIES AND SERVICE SYSTEMS — Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

Environmental Setting

The Project site is located on land owned by the District. There is a joint utility easement along the adjoining site access road which is shared between AT&T, PG&E, and the District. There is also a 15' wide waterline easement along the Northwest side of the tank site which contains a transmission main no longer in service. There are no wastewater treatment or sanitary services onsite.

Water Service: The District provides water service in the Project area and is the primary water supplier. The District uses the Project site to store and transmit water to the surrounding neighborhood.

Storm Drainage: Stormwater runoff from the Project site impervious areas would be treated and infiltrated in three biotreatment basins. Stormwater from pervious areas including stormwater running onto the project site would be diverted around the Project site and surface flow down the hill (Water Works Engineers 2024).

Solid Waste: For this development, the Project would use Recology of the Coast for the disposal of recyclable materials. The Project would contact Recology of the Coast prior to the request service start date to guarantee bin availability and a service schedule. To contact Recology of the Coast, phone calls can be made to (650) 355-9000. All other construction refuse would be disposed of at Corinda Los Trancos Landfill (Ox Mountain). Ox Mountain is a Class III Municipal Solid Waste Landfill which accepts all types of solid waste and is prohibited from accepting hazardous waste and is the only operating landfill in San Mateo County. The landfill is located at 12310 San Mateo Rd (Hwy 92), Half Moon Bay, CA 94019 (San Mateo County Health 2025).

Electricity and Communications: Pacific Gas and Electric Company (PG&E) is an electricity provider for residents and businesses in the City of Pacifica, and is the electricity provider for the Project site.

Regulatory Setting

Federal

There are no federal regulatory plans, policies, or programs relating to utilities and service systems that would be applicable to the Project.

State

Assembly Bill 939

The California Integrated Waste Management Act of 1989, or AB 939, established the California Integrated Waste Management Board (CalRecycle), which required all California counties to prepare Integrated Waste Management Plans and mandated that local jurisdictions divert from the landfill at least 50 percent of solid waste generated beginning January 1, 2000.

Assembly Bill 341

AB 341 sets forth the requirements of the statewide mandatory commercial recycling program for businesses that generate four or more cubic yards of commercial solid waste per week and multi-family dwellings with five or more units in California. AB 341 sets a statewide goal for 75 percent disposal reduction by the year 2020.

Assembly Bill 1826

AB 1826 sets forth the requirements of the statewide mandatory commercial organics recycling program for businesses and multi-family dwellings with five or more units that generate two or more cubic yards of commercial solid waste per week. AB 1826 sets a statewide goal of 50 percent reduction in organic waste disposed by the year 2020.

Senate Bill 1383

SB 1383 establishes targets to achieve a 50 percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2020 and a 75 percent reduction by 2025. The bill grants CalRecycle the regulatory authority required to achieve the organic waste disposal reduction targets and establishes an additional target that at least 20 percent of currently disposed edible food is recovered for human consumption by 2025.

California Green Building Standards Code Compliance for Construction, Waste Reduction, Disposal and Recycling

In January 2023, the State of California adopted the most recent version of the California Green Building Standards Code ("CALGreen"), establishing mandatory green building standards for all new and qualifying remodeled structures in California. The code covers five categories: planning and design, energy efficiency, water efficiency and conservation, material conservation and resources efficiency, and indoor environmental quality. These standards include the following mandatory set of measures, as well as more rigorous voluntary guidelines, for new construction projects to achieve specific green building performance levels: (1) reducing indoor water use by 20 percent; (2) reducing wastewater by 20 percent; (3) recycling and/or salvaging 65 percent of nonhazardous construction and demolition debris, or meeting the local construction

and demolition waste management ordinance, whichever is more stringent; and (4) providing readily accessible areas for recycling by occupants.

Local

City of Pacifica Municipal Code

Chapter 2 of the Municipal Code prohibits the occupation, opening, tearing up, and/or excavation of any roadway, street, thoroughfare, sidewalk, parking strip, and public easement without a permit from the City. Pursuant to Section 7-2.201(d), excavation work by the District is exempt from this requirement, provided that the District shall have entered into an agreement with the City with respect to excavations in the City.

Discussion

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

Less than Significant with Mitigation. The Project would replace an existing 0.5 million gallon water (MG) tank with a 1.2 MG tank. While this would expand the holding capacity of the existing tank, no change or expansion of the existing service area is proposed. No other water facilities would be affected, and new or expanded water facilities would not be needed to serve the Project during construction or operation; there would be no impact. The Project would incorporate new stormwater retention bioswales for onsite stormwater treatment, which would not constitute an expansion of the existing storm water drainage system in the Project area or vicinity. The site has an existing power connection used for tank operation and security lighting; no expansion of the existing electrical service is proposed. No natural gas, wastewater treatment, or telecommunications facilities are proposed. The Project would not require additional staff or otherwise increase demand for utilities once operational. Therefore, Project operations would not require or result in the construction of new or expanded utilities; there would be no impact.

However, Project construction could result in the temporary or permanent need to relocate existing utilities, if present, during construction of the replacement water line. As discussed in Chapter 2, Project Description, the Project proposes to construct a new underground water line in an existing utility easement. While the construction contractor is required by State law to conform to applicable Cal OSHA Construction Safety orders, the implementation of **Mitigation Measure UT-1, Coordinate with Utility Providers, and Develop Utility Avoidance Plan** would avoid potential impacts by requiring the District to locate and avoid utilities in the existing utilities easement during construction, reducing impacts to a less-than-significant level.

> **Mitigation Measure UT-1: Coordination with Utility Providers and Develop Utility Avoidance Plan**
>
> Prior to start of construction, the District shall coordinate with appropriate utility providers to determine the location of utilities and incorporate into construction specifications the requirement that the contractor develop a plan to avoid utilities during construction. The Plan shall be approved by the District and submitted to the appropriate utility providers, to include but may not be limited to: sewer, gas, electricity, telephone, and cable. If it is determined that no utilities are present, additional avoidance measures shall not be needed.

The Project would not generate an increase in demand for any utility, and new facilities or the expansion of existing facilities would not be required; there would be no impact. However, the Project may require the temporary or permanent relocation of utilities, which could result in a potentially significant impact. Implementation of Mitigation Measure UT-1, Coordination with Utility Providers and Develop Utility Avoidance Plan would reduce the impact on utilities to less than significant with mitigation.

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

No Impact. The Project is a water supply storage project and would not in and of itself generate demand for water. Intermittent use of potable water for drinking needs would be required for the 20 onsite construction workers, but the Project would have sufficient water supplies to serve their needs. Because the Project would not result in a change in water use or consumption, the Project would not affect water supplies or the availability to serve reasonably foreseeable future development during normal, dry, and multiple dry years. For this reason, the Project would have no impact on water supplies.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. The Project would not generate wastewater or disrupt wastewater services during construction or operation. Temporary wastewater facilities would be provided for the 20 on-site construction workers for the duration of construction, and there would not be a new source of wastewater discharge. The Project would not generate wastewater and therefore, would have no impact on wastewater capacity.

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?

Less than Significant. The California Integrated Waste Management Act of 1989 established the goal of diverting at least 75 percent of generated waste (based on per capita disposal rates) in California by 2020. In addition, the 2022 California Green Building Code (adopted by reference by the City of Pacifica) requires all construction and demolition projects to reuse or recycle at least 65 percent of materials generated.

Solid waste would generated by the Project construction would be recycled or disposed of at a landfill and comply with local management and reduction statutes related to solid waste. The Project construction debris could be recycled or disposed of at the Ox Mountain Landfill in Half Moon Bay. The landfill is permitted to accept 3,598 tons per day (2,570 CY) materials daily and has a remaining capacity of 17,240,000 CY (CalRecycle, 2026) Ox Mountain Landfill accepts and recycles concrete and asphalt, clean soil, construction and demolition debris, and other materials (CalRecycle, 2026) Given the volume and type of solid waste generated during construction, and the remaining capacity at Ox Mountain Landfill, the Project would not generate solid waste in excess of State or local standards, or of the capacity of local infrastructure, or otherwise impairing attainment of solid waste reduction goals. For these reasons, the Project impact would be less than significant.

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

Less than Significant. Construction debris would be disposed of at the Ox Mountain landfill, and the Project would not generate solid waste during operations. The types of solid waste generated from Project construction would be consistent with Recology of the Coast and Ox Mountain permit requirements and could be recycled; the remaining volume of solid waste would be negligible and would not reduce Ox Mountain Landfill's capacity. For these reasons, Project construction and operation would comply with goals set by the City of Pacifica and San Mateo County, federal, and state reduction statutes and regulations related to solid waste and the Project's impact would be less than significant.

References

CalRecycle, 2026. SWIS Facility/Site Activity Details Corinda Los Trancos Landfill (Ox Mtn) (41-AA-0002). Available at: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1561?siteID=3223. Accessed June 9, 2026.

San Mateo County Health. Solid Waste Program. 2025. Available at: https://www.smchealth.org/solidwaste. Accessed March 6, 2025.

Water Works Engineers. 2024. North Coast County Water District Fassler Tank Preliminary Design Report. September.

3.3.20 Wildfire

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

Environmental Setting

The Project site is located on a slope above a residential neighborhood in the City of Pacifica, California, it slopes downward from north to south, from approximately 700 feet AMSL at the tank location to 600 feet AMSL at the Ahni Trail Head 500 feet away. Natural slopes generally slope down to the southwest. Slopes range from approximately 28 to 66 percent (Brown and Caldwell 2023). The Project site includes portions of the Ahni Trail and is surrounded by the open space used for recreational uses. Existing improvements include the existing Fassler Tank that would be replaced under the Project, and an associated access road and developed habitat. Undeveloped portions of the site support scrub vegetation, annual grasslands, and sparsely vegetated areas (see Section IV, *Biological Resources*). Site specific wind conditions are unknown but the City of Pacifica's General Plan notes that wind patterns in the area are subject to strong ocean winds heading inland, i.e. from west to east (City of Pacifica 2022).

Within California, fire hazard severity zones are designated by the California Department of Forestry and Fire Protection (CAL FIRE). CAL FIRE uses a five-tiered ranking system to assess the threat to people based on fuel hazard, wildland fire potential, and housing density. The Project is not located in a Fire Hazard Severity Zone in a State Responsibility Area; however, the Project is located within a Local Responsibility Area and is within an area designated as having a High Fire Hazard Severity (CAL FIRE 2024; CAL FIRE 2025).

Fire protection and medical emergency services in the City of Pacifica are provided by the North County Fire Authority, a Joint Powers Authority collaboration between the cities of Daly City, Brisbane, and Pacifica formed in 2003. There are two fire stations located in the City of Pacifica, one each at the north and south ends of the City (City of Pacifica 2022). The nearest fire station is Fire Station 72 at 1100 Linda Mar Avenue in the Pacific Manor District, approximately 2.4 miles south of the Project.

Regulatory Setting

Federal

No federal statutes, regulations, plans, or policies govern this analysis.

State

California State Emergency Plan

Pursuant to the Emergency Services Act (Government Code Section 8550 et seq.), California has developed an Emergency Plan to coordinate emergency services provided by federal, state, and local governmental agencies and private persons (Cal OES 2023a). Response to hazardous materials incidents is one part of this plan. Rapid response to incidents involving wildfire and other natural and/or human-caused incidents is an important part of the plan, which is administered by the Governor's Office of Emergency Services (OES). OES coordinates the responses of other agencies, including the U.S. Environmental Protection Agency, California Environmental Protection Agency, California Highway Patrol, California Department of Fish and Wildlife, the nine regional water quality control boards, the local air districts, and local agencies. For example, the California Environmental Protection Agency Fire and Rescue Branch coordinates all interregional and state agency activity related to mutual aid under the California Fire Service and Rescue Mutual Aid Plan; this mutual aid and multiagency coordination mitigates the effects of fire and other disasters, whether they are natural or human-caused (Cal OES 2023b).

2024 Strategic Fire Plan for California

Developed by CAL FIRE the Strategic Plan outlines goals and objectives to implement CAL FIRE's overall policy direction and vision. The 2018 Plan demonstrates CAL FIRE's focus on: 1) fire prevention and suppression activities to protect lives, property, and ecosystem services; and 2) natural resource management to maintain the State's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation (CAL FIRE, 2018a). Unit Plans are developed and updated to implement the programs and goals of the 2018 Plan. Through the Strategic Plan, CAL FIRE implements and enforces the policies and regulations and carries forth the mandates of the Governor and the Legislature.

California Department of Forestry and Fire Protection

Title 14 of the California Code of Regulations (CCR), Division 1.5, establishes regulations for CAL FIRE in SRAs where CAL FIRE is responsible for wildfire protection. These regulations constitute the basic wildland fire protection standards of the California Board of Forestry and Fire Protection. They have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction, and development in SRAs. Additionally, Title 14, Division 1.5, Chapter 7, Subchapter 2 sets forth the minimum standards for emergency access and egress (Article 2), signage (Article 3), water supply (Article 4), and fuel modification standards (Article 5) for lands within SRAs.

Fire Hazards Severity Zones – Public Resources Code Sections 4201-4204

California Public Resources Code Sections 4201 through 4204 require CAL FIRE to prepare fire hazard severity zone maps for all lands within State Responsibility Areas, and to make recommendations for such zones in Local Responsibility Areas. Each zone is to embrace relatively homogeneous lands and is to be

based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified as a major cause of wildfire spread.

California Attorney General's Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act

The Office of the Attorney General released the guidance document Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act guidance on October 10, 2022 (State of California, Office of the Attorney General, 2022). While it does not have the force of law or promulgated regulation, the guidance does provide suggestions for how best to comply with CEQA when analyzing and mitigating a proposed project's impacts on wildfire ignition risk, emergency access, and evacuation. This document does not impose additional requirements on local governments or alter any applicable laws or regulations. Rather, it is intended to provide general direction to lead agencies as they consider the effects of wildfire on development projects.

Public Resources Code

The Public Resources Code includes fire safety provisions that are deemed necessary by the director or agency with primary responsibility for fire protection in the area. During the fire hazard season,[11] these regulations restrict the use of equipment that may produce a spark, flame, or fire; require the use of spark arrestors on equipment that has an internal combustion engine; specify requirements for the safe use of gasoline-powered tools in fire hazard areas; and specify fire-suppression equipment that must be provided on-site for various types of work in fire-prone areas.

2022 California Fire Code

The most recent fire code, the 2022 California Fire Code with a July 2024 supplement, is contained within the California Code of Regulations Title 24, Part 9. Based on the International Fire Code, the California Fire Code was created by the California Buildings Standards Commission and uses a hazards classification system to determine the appropriate measures to incorporate to protect life and property. It provides an enforceable set of regulations consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and explosion; dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; and hazardous conditions in the use or occupancy of buildings or premises. It also contains provisions to assist emergency response personnel.

Local

Santa Cruz County-San Mateo County Community Wildfire Protection Plan

The San Mateo - Santa Cruz County Community Wildfire Protection Plan (CWPP) identifies significant wildfire risks in both counties and outlines strategies to mitigate these risks while promoting ecosystem resilience and protecting life and property. Originally initiated in 2008 following the Summit Fire, the CWPP was developed collaboratively by CAL FIRE, the local Resource Conservation Districts, and community stakeholders. It was updated in 2018 to reflect current conditions and priorities (CAL FIRE 2018b).

[11] Fires are a year-round possibility in California; however, the peak fire season in Northern California usually begins in June or July and continues through late October or November (Western Fire Chiefs' Association 2025).

County of San Mateo Emergency Operations Plan

The Emergency Operations Plan establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations within the County of San Mateo Operational Area (County of San Mateo 2015). It provides information on the County emergency management structure of how and when the Emergency Operations Center staff is activated. The overall objective of emergency management is to ensure the effective coordination of response forces and resources in preparing for and responding to situations associated with natural disasters, technological incidents and national security emergencies.

2021 Multijurisdictional Local Hazard Mitigation Plan

The 2021 Multijurisdictional Local Hazard Mitigation Plan defines measures to reduce risks from natural disasters in the County of San Mateo planning area, which consists of the entire county, including unincorporated areas, incorporated cities, and special purpose districts. The Plan complies with federal and state hazard mitigation planning requirements to establish eligibility for funding under Federal Emergency Management Agency grant programs for all planning partners. It updates the County's previous plan, the 2016 San Mateo County Hazard Mitigation Plan. The Plan is divided into two volumes, Volume 1 (County of San Mateo 2021a) broadly focuses on the County as a whole, while Volume 2 (County of San Mateo 2021b) focuses on specific cities, towns, and special purpose districts. The District annex in Chapter 29 of the San Mateo County LHMP Volume 2 is a jurisdiction specific section that supplements the countywide mitigation plan with details tailored to District's infrastructure, risks, capabilities, and mitigation priorities.

City of Pacifica General Plan 2040

The City of Pacifica's General Plan includes a comprehensive set of both strategies and policies related to wildfire risk, listed below (City of Pacifica 2022).

Safety Element

Guiding Policies

SA-G-8: Fire Prevention. Protect Pacifica residents and businesses from potential wild-land fire hazards.

SA-G-9: Emergency Response. Foster an efficient and coordinated response to emergencies and natural disasters.

SA-G-10: Public Awareness. Support continuing public awareness of hazards, including avoidance, disaster preparedness, and emergency response procedures.

SA-G-11: Disaster Preparation. Make infrastructure investments, enforce regulations, and disseminate information that will improve disaster response and recovery, with the goal of minimizing damage to people and property.

Implementing Policies

SA-I-92: Adequate Peak Load Water Supply. Work with the North Coast County Water District to maintain adequate water supply for firefighting, including capacity for peak load under a reasonable worst case wildland fire scenario, to be determined by the NCFA.

SA-I-108: Emergency Water Capacity. Work with the Water District to ensure that it has a plan and infrastructure for providing adequate water service and storage during and immediately after an emergency, including a major seismic event.

Discussion

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

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

Less than Significant. As discussed in Section 2.5, *Project Construction*, Project construction is anticipated to take 326 workdays that would begin in April 2030 and be completed by July 2031. The site would be accessed from an existing access road beginning from the Ahni Trail Head parking lot and leading to the Fassler Tank. The existing access road at the Trail parking lot would be maintained by the contractor during the construction duration to maintain adequate access.

Further, as discussed in Section XVII, *Transportation*, Fassler Avenue and State Route 1 (SR1) would be the primary Project roadways used during construction activities. In addition to worker arrival and departure trips and construction vehicle and equipment delivery and removal, the Project would require 1,050 truck trips for hauling of materials. Whenever possible, construction traffic trips to and from the Project site would occur during non-commuter peak hours of 8:00 AM to 5:00 PM weekdays. A possible exception would be concrete deliveries during "continuous pour" events during construction, when an entire component would be constructed and a constant pour of concrete would be needed to complete the task. Trips generated from construction would be temporary and would cease following the completion of construction activities.

The Project would require minimal maintenance, and it is anticipated that no new staff would be required for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; therefore, maintenance of the tank and appurtenances would be minimal.

While Fassler Avenue and SR1 would be the Primary Project roadways, the Project would not require any road closures and traffic generated by the Project is not expected to cause congestion such that the Project would impair or physically interfere with an adopted emergency response plan or evacuation plan (see Section XVII, *Transportation)*. Further, as discussed in Chapter 2, *Project Description*, a system-wide storage evaluation was performed to assess the District's storage capacity which recommended replacing the existing tank with a new 1.2-million-gallon tank to increase emergency and fire storage in Pressure Zone 24 and other zones in the southern portion of the District. As such, the Project would allow for an increase in fire prevention and emergency response in the Project area. Impacts related to impairment or physical interference of an emergency response or evacuation plan would be less than significant.

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?

Less than Significant. The Project would be constructed within land owned by the District and would include: replacing the existing Fassler Tank with a new a 1.2-million-gallon concrete water storage tank, installation of underground water conveyance pipes, site drainage facilities, a temporary trail safety barrier and partial trail expansion, tank appurtenances, groundwater level monitoring wells, perimeter fencing including chain-link removal and replacement, driveway paving, as well as installation of riprap, hydroseeding, and tree removal and planting.

The Project does not include the addition of structures that are intended for occupation and therefore, would not expose occupants to increased risks associated with wildfire. However, there are single-family residences located adjacent to the Project site near the Ahni Trail Head approximately 500 feet from the Fassler Tank. Therefore, the following analysis focuses on the potential for Project construction and operation to increase the exposure of these communities to wildfire risks

As discussed in the *Environmental Setting* section, the Project is located within a Local Responsibility Area and is within an area designated as having a High Fire Hazard Severity (CAL FIRE 2025). Additionally, the Project site is along a ridgeline and contains steep slopes between approximately 28 to 66 percent which can exacerbate wildfire risks (Brown and Caldwell 2023), however slopes generally rise towards the east away from developed urban areas. As discussed in the General Plan, local wind conditions generally come from the Pacific Ocean heading inland. Therefore, wind conditions at the Project site would generally also blow uphill away from developed urban areas; the General Plan notes that the City of Pacifica generally has better air quality conditions compared to surrounding areas due to local wind patterns, similarly in the event of a fire pollutants would likely be blown away from developed areas reducing the potential for nearby occupants to be exposed to pollutants (City of Pacifica 2022).

The use of construction equipment, the possible temporary on-site storage of fuels and/or other flammable construction chemicals, and ongoing operations and maintenance could pose an increased fire risk resulting in injury to workers or the public during construction, operations, and maintenance. However, contractors and staff would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the risk of wildland fires during construction, operations, and maintenance would be less than significant. Further, the Project would need to comply with the California Fire Code, specifically Chapter 7A which addresses the wildland fire threat to structures by requiring the use of fire-resistant materials and construction techniques for projects located in Fire Hazard Severity Zones or any Urban Wildland Interface fire area. Additionally, as discussed above, a system-wide storage evaluation was performed to assess the District's storage capacity which recommended replacing the existing tank with a new 1.2-million-gallon tank to increase emergency and fire storage in Pressure Zone 24 and other zones in the southern portion of the District. As such, the Project would allow for an increase in fire prevention and response in the Project area.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe

inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; therefore, maintenance of the tank and appurtenances would be minimal.

As previously mentioned, contractors and staff would be required to comply with hazardous materials storage and fire prevention regulations, the Project would comply with Chapter 7A of the California Fire Code which would minimize potential for fire creation by ensuring fire-resistant materials and construction technique are used, and the Project would allow for increased local fire prevention thereby reducing the potential of the uncontrolled spread of wildfire. As such, impacts from increased risk of wildland fires would be less than significant.

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?

Less than Significant. The Project would include: replacing the existing Fassler Tank with a new a 1.2-million-gallon concrete water storage tank, installation of underground water conveyance pipes, site drainage facilities, a temporary trail safety barrier and partial trail expansion, tank appurtenances, groundwater level monitoring wells, perimeter fencing including chain-link removal and replacement, driveway paving, as well as installation of riprap, hydroseeding, and tree removal and planting. The Project does not include the construction of new roads, fuel breaks, or power lines.

As discussed above, a system-wide storage evaluation was performed to assess the District's storage capacity which recommended replacing the existing tank with a new 1.2-million-gallon tank to increase emergency and fire storage in Pressure Zone 24 and other zones in the southern portion of the District. As such, the Project would allow for an increase in fire prevention and response in the Project area.

The installation of the new Fassler Tank and appurtenances would not exacerbate fire risk or result in temporary or ongoing impacts on the environment as compared to existing conditions as the Project would be to replace the existing Fassler Tank and would not introduce new facilities where none previously existed. The Project would include the installation of new water conveyance pipes and groundwater level monitoring wells; however, these would be installed underground which would reduce any associated fire risk. Further, the Project would install new stormwater management features such as bioretention basins, hydroseed disturbed areas, and plant replacement trees if needed; however, plantings would be hand irrigated and would generally consist of native plants, and as such, would generally be low-fire risk. The temporary trail safety barrier and partial trail expansion, driveway paving, and the installation of riprap and replacement fencing are not expected to affect wildfire risk.

Upon completion of construction, the Project would require minimal maintenance. It is anticipated that no new staff would be required specifically for operations or to perform routine maintenance. Primary operations and maintenance activities would include water quality sampling, instrument checks, pipe inspection, tank cleaning, and landscaping cleanup. Major repair activities would be episodic and occur only as needed; therefore, maintenance of the tank and appurtenances would be minimal.

Further, contractors and staff would be required to comply with hazardous materials storage and fire protection regulations, which would minimize potential for fire creation, and ensure that the risk of wildland fires during construction, operations, and maintenance would be less than significant.

Compliance with all applicable fire prevention requirements and increased local fire prevention capabilities from installation of the Project would reduce fire risk, and this impact would be less than significant.

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?

Less than Significant. As discussed in Section VII, *Geology and Soils,* Section IX *Hazards and Hazardous Materials*, and Section X, *Hydrology and Water* Quality, the Project site is along a steeply sloped area and in an area that could be susceptible to landslides. However, the Project includes several erosion and sedimentation control measures, compliance of which would be required during construction (i.e., a Stormwater Pollution Prevention Plan [SWPPP] and the City of Pacifica's standard construction practices pursuant to Chapter 12 of the Municipal Code, Storm Water Management and Discharge Control).

Further, the District has designed the Project to minimize land disturbance and impervious surface coverage and has incorporated bioretention basins into the Project design to retain stormwater flows and minimize potential runoff from the proposed impervious surfaces, consistent with requirements of Provision C.3 of the San Francisco Bay RWQCB Municipal Regional Stormwater NPDES Permit. Additionally, no waste or discharge would be generated at the Project site, unless resulting from an unanticipated major repair or overflow event. During these events, consistent with Section 6-12.202 of the City of Pacifica's Stormwater Ordinance, water would discharge into a catch basin west of the proposed tank and convey the water to the existing drain/overflow discharge outfall. The drainage flows towards Rockaway Beach through an unnamed drainage channel. A tank wall drain would surround the tank and convey water that collects in the ground near the tank walls away to the drainage outfall.

The Project design features, in conjunction with the required erosion and sedimentation control measures, would reduce any potential impact related to runoff and drainage changes. Therefore, the Project would not result in changes to runoff or drainage patterns which could exacerbate downslope or downstream flooding and thereby expose people or structures to associated risks, and the impact would be less than significant.

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3.3.21 Mandatory Findings of Significance

Issues:	*Potentially Significant Impact*	*Less Than Significant with Mitigation Incorporated*	*Less Than Significant Impact*	*No Impact*
MANDATORY FINDINGS OF SIGNIFICANCE — Does the project:				
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) 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) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

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

The Project would involve construction activities to replace an outdated water tank with a new 1.2 MG tank along with associated infrastructure in the same parcel. The Project would increase water supply reliability and emergency and fire water storage capacity. The Project would not: substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce or restrict the range of rare or endangered plants or animals; or, eliminate important examples of the major periods of California history or prehistory. As discussed in the analyses provided in this Initial Study, adherence to federal, State, and local regulations, and proposed **Mitigation Measures AIR-1**, **BIO-1** through **BIO-3**, **CUL-1** through **CUL-3**, **GEO-1**, and **UT-1** would reduce all potentially significant impacts to air quality, biological, cultural / tribal, greenhouse gas, and utilities resources as well as to other issue areas analyzed, to less-than-significant levels with mitigation incorporated.

b) 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)?

As noted throughout this document, the potential impacts of the Project are primarily temporary and short-term construction-related impacts and are site-specific. As noted above, all of the potential direct

and indirect impacts of the Project were determined to be fully avoided or reduced to less than significant with incorporation of **Mitigation Measures AIR-1**, **BIO-1** through **BIO-3**, **CUL-1** through **CUL-3**, **GEO-1**, and **UT-1**. There are also no other Projects in the roadways providing access to the site that would occur at the same time. As a result, the potential impacts of the Project are not significant.

c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

The potential impacts of the Project are temporary, short-term, and site-specific. These impacts are all localized to the Project area and include limited adverse effects on biological, cultural, greenhouse gas, energy and geological resources. However, the Project would not include any activities or uses that may cause substantial adverse effects on human beings, either directly or indirectly, or on the physical environment. Compliance with applicable local, State, and federal standards, as well as incorporation of project mitigation measures, would result in less-than significant impacts with mitigation incorporated.

CHAPTER 4
List of Preparers

4.1 Lead Agency

North Coast County Water District

Adrianne Carr, General Manager
Stephanie Dalton, Administrative Services Manager

4.2 Consultants

Environmental Science Associates (ESA)

Dave Davis / Meryka Dirks, Project Director
Stephen Doyle, Project Manager, Energy, Geology, Hydrology, Transportation, Social Resource Sections
Joneil Manansala, Air Quality, Greenhouse Gas Emissions, Noise
Liza Ryan, Biological Resources
Melissa Grijalva-Foreman, Cultural Resources, Tribal Cultural Resources
Rudy Reyes, Aesthetics, Hazards, Mineral, Wildfire, Social Resource Sections

EKI Environment & Water, Inc.

Jonathan Sutter, PE, Principal Engineer

Water Works Engineers

Cindy Bertsch, Senior Civil Engineer

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Appendix A
Air Quality and Greenhouse Gas Modeling

Fassler Tank Replacement Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Fassler Tank Replacement
Construction Start Date	6/1/2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	4.60
Precipitation (days)	43.0
Location	1186 Fassler Ave, Pacifica, CA 94044, USA
County	San Mateo
City	Pacifica
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1225
EDFZ	1
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
General Light Industry	1.00	1000sqft	2.00	5,476	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.06	1.72	13.4	14.5	0.04	0.52	1.30	1.65	0.48	0.32	0.64	—	6,303	6,303	0.69	0.66	8.08	6,524
Mit.	1.09	0.95	8.59	20.3	0.04	0.25	1.30	1.42	0.24	0.32	0.43	—	6,303	6,303	0.69	0.66	8.08	6,524
% Reduced	47%	45%	36%	-40%	—	52%	—	14%	51%	—	32%	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.09	1.74	13.9	14.5	0.04	0.55	1.30	1.65	0.51	0.32	0.64	—	6,297	6,297	0.69	0.66	0.21	6,511
Mit.	1.09	0.95	8.91	20.3	0.04	0.25	1.30	1.42	0.24	0.32	0.43	—	6,297	6,297	0.69	0.66	0.21	6,511
% Reduced	48%	46%	36%	-40%	—	54%	—	14%	53%	—	32%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.87	0.73	5.52	6.12	0.02	0.22	0.16	0.28	0.20	0.04	0.20	—	1,592	1,592	0.10	0.08	0.40	1,597
Mit.	0.43	0.38	2.60	8.64	0.02	0.10	0.16	0.21	0.09	0.04	0.10	—	1,592	1,592	0.10	0.08	0.40	1,597
% Reduced	51%	48%	53%	-41%	—	55%	—	26%	54%	—	53%	—	—	—	—	—	—	—

Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.13	1.01	1.12	< 0.005	0.04	0.03	0.05	0.04	0.01	0.04	—	264	264	0.02	0.01	0.07	264
Mit.	0.08	0.07	0.47	1.58	< 0.005	0.02	0.03	0.04	0.02	0.01	0.02	—	264	264	0.02	0.01	0.07	264
% Reduced	51%	48%	53%	-41%	—	55%	—	26%	54%	—	53%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.92	1.12	13.1	12.8	0.04	0.35	1.30	1.65	0.32	0.32	0.64	—	6,303	6,303	0.69	0.66	8.08	6,524
2027	2.06	1.72	13.4	14.5	0.04	0.52	0.10	0.55	0.48	0.02	0.49	—	3,746	3,746	0.15	0.03	0.26	3,760
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	2.09	1.74	13.9	14.5	0.04	0.55	1.30	1.65	0.51	0.32	0.64	—	6,297	6,297	0.69	0.66	0.21	6,511
2027	2.06	1.72	13.4	14.5	0.04	0.52	0.03	0.55	0.48	0.01	0.49	—	3,745	3,745	0.15	0.03	< 0.005	3,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.57	0.42	3.60	3.70	0.01	0.12	0.16	0.28	0.11	0.04	0.15	—	1,386	1,386	0.10	0.08	0.40	1,412
2027	0.87	0.73	5.52	6.12	0.02	0.22	0.02	0.24	0.20	< 0.005	0.20	—	1,592	1,592	0.06	0.01	0.03	1,597
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.10	0.08	0.66	0.68	< 0.005	0.02	0.03	0.05	0.02	0.01	0.03	—	229	229	0.02	0.01	0.07	234
2027	0.16	0.13	1.01	1.12	< 0.005	0.04	< 0.005	0.04	0.04	< 0.005	0.04	—	264	264	0.01	< 0.005	< 0.005	264

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.08	0.45	8.59	16.6	0.04	0.12	1.30	1.42	0.12	0.32	0.43	—	6,303	6,303	0.69	0.66	8.08	6,524
2027	1.09	0.95	6.50	20.3	0.04	0.25	0.10	0.28	0.24	0.02	0.24	—	3,746	3,746	0.15	0.03	0.26	3,760
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.09	0.95	8.91	20.3	0.04	0.25	1.30	1.42	0.24	0.32	0.43	—	6,297	6,297	0.69	0.66	0.21	6,511
2027	1.09	0.95	6.51	20.3	0.04	0.25	0.03	0.28	0.24	0.01	0.24	—	3,745	3,745	0.15	0.03	< 0.005	3,759
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.28	0.19	2.00	5.43	0.01	0.05	0.16	0.21	0.05	0.04	0.08	—	1,386	1,386	0.10	0.08	0.40	1,412
2027	0.43	0.38	2.60	8.64	0.02	0.10	0.02	0.12	0.09	< 0.005	0.10	—	1,592	1,592	0.06	0.01	0.03	1,597
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.05	0.03	0.36	0.99	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	229	229	0.02	0.01	0.07	234
2027	0.08	0.07	0.47	1.58	< 0.005	0.02	< 0.005	0.02	0.02	< 0.005	0.02	—	264	264	0.01	< 0.005	< 0.005	264

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.79	0.66	4.31	4.49	0.02	0.15	—	0.15	0.14	—	0.14	—	1,598	1,598	0.06	0.01	—	1,603

Demoliti	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.07	0.47	0.49	< 0.005	0.02	—	0.02	0.01	—	0.01	—	175	175	0.01	< 0.005	—	176
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.09	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.24	81.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.38	8.38	< 0.005	< 0.005	0.01	8.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.41
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Demolition (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.30	0.27	2.25	8.05	0.02	0.06	—	0.06	0.06	—	0.06	—	1,598	1,598	0.06	0.01	—	1,603
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.25	0.88	< 0.005	0.01	—	0.01	0.01	—	0.01	—	175	175	0.01	< 0.005	—	176
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.02	0.29	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.7	80.7	< 0.005	< 0.005	0.24	81.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.38	8.38	< 0.005	< 0.005	0.01	8.50
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.39	1.39	< 0.005	< 0.005	< 0.005	1.41

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Mobilization (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.71	0.60	3.84	4.24	0.01	0.13	—	0.13	0.12	—	0.12	—	1,536	1,536	0.06	0.01	—	1,542
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	0.07	0.42	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	168	168	0.01	< 0.005	—	169
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.9	27.9	< 0.005	< 0.005	—	28.0
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.5	60.5	< 0.005	< 0.005	0.18	60.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.29	6.29	< 0.005	< 0.005	0.01	6.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.4. Mobilization (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.21	1.79	7.79	0.01	0.05	—	0.05	0.04	—	0.04	—	1,536	1,536	0.06	0.01	—	1,542
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.20	0.85	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	168	168	0.01	< 0.005	—	169
Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.04	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.9	27.9	< 0.005	< 0.005	—	28.0

Dust From Material Movement	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.01	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.5	60.5	< 0.005	< 0.005	0.18	60.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.29	6.29	< 0.005	< 0.005	0.01	6.38
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.04	1.04	< 0.005	< 0.005	< 0.005	1.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.5. Earthwork (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.00	7.01	8.13	0.02	0.30	—	0.30	0.27	—	0.27	—	2,166	2,166	0.09	0.02	—	2,173
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.19	1.00	7.01	8.13	0.02	0.30	—	0.30	0.27	—	0.27	—	2,166	2,166	0.09	0.02	—	2,173
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.77	0.89	< 0.005	0.03	—	0.03	0.03	—	0.03	—	237	237	0.01	< 0.005	—	238
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.14	0.16	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.3	39.3	< 0.005	< 0.005	—	39.4
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.30	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.70	0.10	6.03	4.27	0.02	0.05	0.97	1.02	0.05	0.27	0.31	—	4,036	4,036	0.60	0.64	7.78	4,249
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.3	95.3	< 0.005	< 0.005	0.01	96.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.70	0.09	6.35	4.27	0.02	0.05	0.97	1.02	0.05	0.27	0.31	—	4,036	4,036	0.60	0.64	0.20	4,241
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.01	10.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.08	0.01	0.69	0.47	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	442	442	0.07	0.07	0.37	465
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.73	1.73	< 0.005	< 0.005	< 0.005	1.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.13	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	73.2	73.2	0.01	0.01	0.06	77.0

3.6. Earthwork (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.32	2.53	12.0	0.02	0.07	—	0.07	0.07	—	0.07	—	2,166	2,166	0.09	0.02	—	2,173
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.32	2.53	12.0	0.02	0.07	—	0.07	0.07	—	0.07	—	2,166	2,166	0.09	0.02	—	2,173
Dust From Material Movement	—	—	—	—	—	—	0.23	0.23	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.28	1.32	< 0.005	0.01	—	0.01	0.01	—	0.01	—	237	237	0.01	< 0.005	—	238

Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.24	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	39.3	39.3	< 0.005	< 0.005	—	39.4
Dust From Material Movement	—	—	—	—	—	—	< 0.005	< 0.005	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.36	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.30	101
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.70	0.10	6.03	4.27	0.02	0.05	0.97	1.02	0.05	0.27	0.31	—	4,036	4,036	0.60	0.64	7.78	4,249
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	95.3	95.3	< 0.005	< 0.005	0.01	96.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.70	0.09	6.35	4.27	0.02	0.05	0.97	1.02	0.05	0.27	0.31	—	4,036	4,036	0.60	0.64	0.20	4,241
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.5	10.5	< 0.005	< 0.005	0.01	10.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.08	0.01	0.69	0.47	< 0.005	0.01	0.10	0.11	0.01	0.03	0.03	—	442	442	0.07	0.07	0.37	465
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.73	1.73	< 0.005	< 0.005	< 0.005	1.76
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.13	0.09	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	73.2	73.2	0.01	0.01	0.06	77.0

3.7. Tank Construction (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.08	1.73	13.8	14.4	0.04	0.55	—	0.55	0.51	—	0.51	—	3,704	3,704	0.15	0.03	—	3,717
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.19	0.16	1.25	1.30	< 0.005	0.05	—	0.05	0.05	—	0.05	—	333	333	0.01	< 0.005	—	335
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.03	0.03	0.23	0.24	< 0.005	0.01	—	0.01	0.01	—	0.01	—	55.2	55.2	< 0.005	< 0.005	—	55.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.5	17.5	< 0.005	< 0.005	< 0.005	17.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.3	25.3	< 0.005	< 0.005	< 0.005	26.5
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.61
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.40
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Tank Construction (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.94	6.47	20.2	0.04	0.25	—	0.25	0.24	—	0.24	—	3,704	3,704	0.15	0.03	—	3,717
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.58	1.82	< 0.005	0.02	—	0.02	0.02	—	0.02	—	333	333	0.01	< 0.005	—	335
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.11	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	55.2	55.2	< 0.005	< 0.005	—	55.4
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.5	17.5	< 0.005	< 0.005	< 0.005	17.8
Vendor	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.3	25.3	< 0.005	< 0.005	< 0.005	26.5

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	< 0.005	1.61
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.28	2.28	< 0.005	< 0.005	< 0.005	2.39
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.38	0.38	< 0.005	< 0.005	< 0.005	0.40
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Tank Construction (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	1.71	13.4	14.4	0.04	0.52	—	0.52	0.48	—	0.48	—	3,703	3,703	0.15	0.03	—	3,716
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.05	1.71	13.4	14.4	0.04	0.52	—	0.52	0.48	—	0.48	—	3,703	3,703	0.15	0.03	—	3,716
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.72	0.60	4.71	5.07	0.01	0.18	—	0.18	0.17	—	0.17	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.86	0.93	< 0.005	0.03	—	0.03	0.03	—	0.03	—	216	216	0.01	< 0.005	—	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.2	18.2	< 0.005	< 0.005	0.05	18.3
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.8	24.8	< 0.005	< 0.005	0.05	25.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	< 0.005	17.3
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.8	24.8	< 0.005	< 0.005	< 0.005	25.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.08	6.08	< 0.005	< 0.005	0.01	6.11
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.73	8.73	< 0.005	< 0.005	0.01	9.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.01	1.01	< 0.005	< 0.005	< 0.005	1.01
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Tank Construction (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.94	6.47	20.2	0.04	0.25	—	0.25	0.24	—	0.24	—	3,703	3,703	0.15	0.03	—	3,716
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.08	0.94	6.47	20.2	0.04	0.25	—	0.25	0.24	—	0.24	—	3,703	3,703	0.15	0.03	—	3,716
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.38	0.33	2.28	7.13	0.01	0.09	—	0.09	0.08	—	0.08	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.42	1.30	< 0.005	0.02	—	0.02	0.02	—	0.02	—	216	216	0.01	< 0.005	—	217
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.2	18.2	< 0.005	< 0.005	0.05	18.3
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.8	24.8	< 0.005	< 0.005	0.05	25.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	< 0.005	17.3
Vendor	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.8	24.8	< 0.005	< 0.005	< 0.005	25.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.08	6.08	< 0.005	< 0.005	0.01	6.11
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.73	8.73	< 0.005	< 0.005	0.01	9.13
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.01	1.01	< 0.005	< 0.005	< 0.005	1.01
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.45	1.45	< 0.005	< 0.005	< 0.005	1.51
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Final Earthwork and Paving (2027) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.16	0.97	6.62	8.14	0.02	0.28	—	0.28	0.26	—	0.26	—	2,166	2,166	0.09	0.02	—	2,173
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	0.80	0.98	< 0.005	0.03	—	0.03	0.03	—	0.03	—	261	261	0.01	< 0.005	—	262
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.15	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	43.2	43.2	< 0.005	< 0.005	—	43.4
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.34	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.0	99.0	< 0.005	< 0.005	0.26	99.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.3	11.3	< 0.005	< 0.005	0.01	11.4
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Final Earthwork and Paving (2027) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.35	0.32	2.53	12.0	0.02	0.07	—	0.07	0.07	—	0.07	—	2,166	2,166	0.09	0.02	—	2,173
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.31	1.45	< 0.005	0.01	—	0.01	0.01	—	0.01	—	261	261	0.01	< 0.005	—	262
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.26	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	43.2	43.2	< 0.005	< 0.005	—	43.4
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.34	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.0	99.0	< 0.005	< 0.005	0.26	99.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.3	11.3	< 0.005	< 0.005	0.01	11.4

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.87	1.87	< 0.005	< 0.005	< 0.005	1.88
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	6/1/2026	7/26/2026	5.00	40.0	—
Mobilization	Site Preparation	7/27/2026	9/20/2026	5.00	40.0	—

Earthwork	Grading	9/21/2026	11/15/2026	5.00	40.0	—
Tank Construction	Building Construction	11/16/2026	6/29/2027	5.00	162	—
Final Earthwork and Paving	Paving	6/30/2027	8/30/2027	5.00	44.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Demolition	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Demolition	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Mobilization	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Mobilization	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Mobilization	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Earthwork	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Earthwork	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Earthwork	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Earthwork	Graders	Diesel	Average	1.00	8.00	148	0.41
Tank Construction	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Tank Construction	Bore/Drill Rigs	Diesel	Average	1.00	8.00	83.0	0.50
Tank Construction	Cement and Mortar Mixers	Diesel	Average	12.0	8.00	10.0	0.56
Tank Construction	Cranes	Diesel	Average	1.00	8.00	367	0.29
Tank Construction	Other Construction Equipment	Diesel	Average	1.00	8.00	82.0	0.42
Final Earthwork and Paving	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Final Earthwork and Paving	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38

Final Earthwork and Paving	Off-Highway Trucks	Diesel	Average	1.00	8.00	376	0.38
Final Earthwork and Paving	Graders	Diesel	Average	1.00	8.00	148	0.41

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Demolition	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Demolition	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
Mobilization	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Mobilization	Dumpers/Tenders	Diesel	Average	1.00	8.00	16.0	0.38
Mobilization	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
Earthwork	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Earthwork	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Earthwork	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
Earthwork	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Tank Construction	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38
Tank Construction	Bore/Drill Rigs	Diesel	Tier 4 Final	1.00	8.00	83.0	0.50
Tank Construction	Cement and Mortar Mixers	Diesel	Average	12.0	8.00	10.0	0.56
Tank Construction	Cranes	Diesel	Tier 4 Final	1.00	8.00	367	0.29
Tank Construction	Other Construction Equipment	Diesel	Tier 4 Final	1.00	8.00	82.0	0.42
Final Earthwork and Paving	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Final Earthwork and Paving	Dumpers/Tenders	Diesel	Average	2.00	8.00	16.0	0.38
Final Earthwork and Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	376	0.38

Final Earthwork and Paving	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Mobilization	—	—	—	—
Mobilization	Worker	7.50	11.7	LDA,LDT1,LDT2
Mobilization	Vendor	—	8.40	HHDT,MHDT
Mobilization	Hauling	0.00	20.0	HHDT
Mobilization	Onsite truck	—	—	HHDT
Earthwork	—	—	—	—
Earthwork	Worker	12.5	11.7	LDA,LDT1,LDT2
Earthwork	Vendor	—	8.40	HHDT,MHDT
Earthwork	Hauling	52.5	20.0	HHDT
Earthwork	Onsite truck	—	—	HHDT
Tank Construction	—	—	—	—
Tank Construction	Worker	2.30	11.7	LDA,LDT1,LDT2
Tank Construction	Vendor	0.90	8.40	HHDT,MHDT
Tank Construction	Hauling	0.00	20.0	HHDT
Tank Construction	Onsite truck	—	—	HHDT
Final Earthwork and Paving	—	—	—	—
Final Earthwork and Paving	Worker	12.5	11.7	LDA,LDT1,LDT2

Final Earthwork and Paving	Vendor	—	8.40	HHDT,MHDT
Final Earthwork and Paving	Hauling	0.00	20.0	HHDT
Final Earthwork and Paving	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	10.0	11.7	LDA,LDT1,LDT2
Demolition	Vendor	—	8.40	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT
Mobilization	—	—	—	—
Mobilization	Worker	7.50	11.7	LDA,LDT1,LDT2
Mobilization	Vendor	—	8.40	HHDT,MHDT
Mobilization	Hauling	0.00	20.0	HHDT
Mobilization	Onsite truck	—	—	HHDT
Earthwork	—	—	—	—
Earthwork	Worker	12.5	11.7	LDA,LDT1,LDT2
Earthwork	Vendor	—	8.40	HHDT,MHDT
Earthwork	Hauling	52.5	20.0	HHDT
Earthwork	Onsite truck	—	—	HHDT
Tank Construction	—	—	—	—
Tank Construction	Worker	2.30	11.7	LDA,LDT1,LDT2
Tank Construction	Vendor	0.90	8.40	HHDT,MHDT
Tank Construction	Hauling	0.00	20.0	HHDT
Tank Construction	Onsite truck	—	—	HHDT
Final Earthwork and Paving	—	—	—	—
Final Earthwork and Paving	Worker	12.5	11.7	LDA,LDT1,LDT2

Final Earthwork and Paving	Vendor	—	8.40	HHDT,MHDT
Final Earthwork and Paving	Hauling	0.00	20.0	HHDT
Final Earthwork and Paving	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Ton of Debris)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	0.00	—
Mobilization	0.00	0.00	0.00	0.00	—
Earthwork	0.00	16,800	20.1	0.00	—
Final Earthwork and Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt

General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.73	annual days of extreme heat
Extreme Precipitation	8.95	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	28.7	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A

Extreme Precipitation	3	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	10.6
AQ-PM	14.4
AQ-DPM	3.25
Drinking Water	17.8
Lead Risk Housing	20.2
Pesticides	3.93
Toxic Releases	30.8
Traffic	58.0
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	22.1
Haz Waste Facilities/Generators	22.0
Impaired Water Bodies	33.2
Solid Waste	52.9
Sensitive Population	—
Asthma	31.7
Cardio-vascular	5.00
Low Birth Weights	38.5
Socioeconomic Factor Indicators	—
Education	17.8
Housing	23.4
Linguistic	47.7

Poverty	9.85
Unemployment	4.23

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	83.53650712
Employed	71.97484922
Median HI	80.50814834
Education	—
Bachelor's or higher	64.6862569
High school enrollment	100
Preschool enrollment	50.86616194
Transportation	—
Auto Access	43.30809701
Active commuting	59.45078917
Social	—
2-parent households	75.88861799
Voting	93.81496215
Neighborhood	—
Alcohol availability	80.50814834
Park access	81.35506224
Retail density	26.26716284
Supermarket access	65.40485051
Tree canopy	95.983575
Housing	—
Homeownership	77.15898884

Housing habitability	75.59348133
Low-inc homeowner severe housing cost burden	31.83626331
Low-inc renter severe housing cost burden	73.00141152
Uncrowded housing	55.74233286
Health Outcomes	—
Insured adults	92.95521622
Arthritis	0.0
Asthma ER Admissions	71.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	63.0
Cognitively Disabled	62.4
Physically Disabled	50.9
Heart Attack ER Admissions	89.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0

Climate Change Exposures	—
Wildfire Risk	0.3
SLR Inundation Area	0.0
Children	67.0
Elderly	14.2
English Speaking	53.5
Foreign-born	28.6
Outdoor Workers	46.4
Climate Change Adaptive Capacity	—
Impervious Surface Cover	89.7
Traffic Density	7.2
Traffic Access	23.0
Other Indices	—
Hardship	21.2
Other Decision Support	—
2016 Voting	87.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	5.00
Healthy Places Index Score for Project Location (b)	87.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Project Specific Information: 2 Acres Site, BSF = area of tank floor
Construction: Construction Phases	Project Specific Information Construction Schedule
Construction: Off-Road Equipment	Project Specific Information Construction Equipment
Construction: Dust From Material Movement	Total Material Exported adjusted for CalEEMod total haul trips to result in 1,050 trips

Fassler Tank Replacement

Source: CalEEMod - Fassler Tank Replacement (1) | 06/17/2025

Project Construction Schedule

Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase
Demolition	6/1/2026	7/26/2026	5	40
Site Preparation	7/27/2026	9/20/2026	5	40
Grading	9/21/2026	11/15/2026	5	40
Building Construction	11/16/2026	6/29/2027	5	162
Paving	6/30/2027	8/30/2027	5	44

Start/End	Total Workdays Per Year	
12/31/2026	2026	154
1/1/2027	2027	172
	Total	**326**

Fassler Tank Replacement Air Quality Construction Emissions: UNMITIGATED

Source: CalEEMod - Fassler Tank Replacement (1) | 06/17/2025

Average Daily Construction-related Criteria Pollutant Emissions				
Project Construction Year	**Average Daily Emissions (pounds per day)**			
	ROG	**NOX**	**Exhaust PM10**	**Exhaust PM2.5**
2026	1.04	8.57	0.26	0.26
2027	1.51	11.74	0.47	0.47
BAAQMD Thresholds of Significance	*54*	*54*	*82*	*54*
Threshold Exceeded?	**No**	**No**	**No**	**No**

Conversions

Year	Days
1	365
Tons	Pounds
1	2000

Fassler Tank Replacement Air Quality Construction Emissions: MITIGATED Tier 4 Final

Source: CalEEMod - Fassler Tank Replacement (1) | 06/17/2025

Average Daily Construction-related Criteria Pollutant Emissions				
Project Construction Year	**Average Daily Emissions (pounds per day)**			
	ROG	**NOX**	**Exhaust PM10**	**Exhaust PM2.5**
2026	0.39	4.68	0.13	0.13
2027	0.81	5.47	0.23	0.23
BAAQMD Thresholds of Significance	*54*	*54*	*82*	*54*
Threshold Exceeded?	**No**	**No**	**No**	**No**

Conversions

Year	Days
1	365
Tons	Pounds
1	2000

```
*         AERMOD (24142 ):          C:\Fassler Tank\Fassl ########
*         AERMET (          18081):     8:39:01
*         MODELIN( OPTIONS  USED:     RegDFAUL CONC      ELEV      FLGPOL  RURAL     ADJ_U*
*         PLOT     FILE     OF        PERIOD   VALUES    AVERAGEI ACROSS          0 YEARS     FOR       SOURCE    GROUP:    CNST
*         FOR      A        TOTAL     OF                 27 RECEPTORS.
*         FORMAT:  (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)
*         X        Y        AVERAGE   CONC     ZELEV     ZHILL     ZFLAG   AVE       GRP       NUM       HRS       NET       ID
*         ________ ________ ________  _______  _______   _______   ______  ________  ________  ________
546179.87 546179.9 4161112   1.05636    82.81    247.69       1.5 PERIOD  CNST        43824
546169.75 546169.8 4161092   1.00341    83.27    247.69       1.5 PERIOD  CNST        43824
546201.12 546201.1 4161112   1.01482    83.18    247.69       1.5 PERIOD  CNST        43824
546188.64 546188.6 4161092   0.97324    83.32    247.69       1.5 PERIOD  CNST        43824
546005.97   546006 4161475  45.39567   182.92    247.69       1.5 PERIOD  CNST        43824
545971.45 545971.5 4161496  42.15323   182.77    247.69       1.5 PERIOD  CNST        43824
545993.67 545993.7 4161455  35.95341   180.82    247.69       1.5 PERIOD  CNST        43824
545999.62 545999.6 4161466  42.12553   182.08    247.69       1.5 PERIOD  CNST        43824
545961.53 545961.5 4161481  34.73678   181.52    247.69       1.5 PERIOD  CNST        43824
545956.77 545956.8 4161465   28.6262   179.48    247.69       1.5 PERIOD  CNST        43824
545985.33 545985.3 4161437  26.80473   178.31    247.69       1.5 PERIOD  CNST        43824
545973.83 545973.8 4161427  22.22811   176.57    247.69       1.5 PERIOD  CNST        43824
545946.45 545946.5 4161449  21.01139   175.56    247.69       1.5 PERIOD  CNST        43824
545958.75 545958.8 4161416   17.6304   174.58    247.69       1.5 PERIOD  CNST        43824
545943.67 545943.7 4161411  14.77232   172.81    247.69       1.5 PERIOD  CNST        43824
545922.25 545922.3 4161445  14.19116   168.95    247.69       1.5 PERIOD  CNST        43824
545906.38 545906.4 4161451  11.80834   166.11    247.69       1.5 PERIOD  CNST        43824
545927.41 545927.4 4161411  12.59136   170.95    247.69       1.5 PERIOD  CNST        43824
545908.76 545908.8 4161416  10.45225   168.34    247.69       1.5 PERIOD  CNST        43824
545890.11 545890.1 4161459   9.97532   163.78    247.69       1.5 PERIOD  CNST        43824
545874.64 545874.6 4161458   8.41734   161.75    247.69       1.5 PERIOD  CNST        43824
545886.94 545886.9 4161422   8.45701   164.66    247.69       1.5 PERIOD  CNST        43824
545874.64 545874.6 4161425   7.56859   162.41    247.69       1.5 PERIOD  CNST        43824
545858.77 545858.8 4161427   6.59987   160.59    247.69       1.5 PERIOD  CNST        43824
545844.88 545844.9 4161430   5.95899   159.67    247.69       1.5 PERIOD  CNST        43824
545859.16 545859.2 4161461   7.30486   160.22    247.69       1.5 PERIOD  CNST        43824
545845.67 545845.7 4161465   6.55975   159.86    247.69       1.5 PERIOD  CNST        43824
**        CONCUNIT ug/m^3
**        DEPUNIT  g/m^2
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*         AERMOD  (24142     ):          C:\Fassler Tank\Fassl ########
*         AERMET  (           18081):       8:39:01
*         MODELIN( OPTIONS  USED:       RegDFAUL CONC      ELEV      FLGPOL  RURAL    ADJ_U*
*         PLOT      FILE    OF          PERIOD   VALUES    AVERAGEI ACROSS          0 YEARS    FOR       SOURCE    GROUP:    HAUL
*         FOR       A       TOTAL       OF                    27 RECEPTORS.
*         FORMAT:  (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)
*         X         Y       AVERAGE     CONC      ZELEV     ZHILL     ZFLAG   AVE       GRP       NUM       HRS       NET       ID
*
          546179.9  4161112   1.4391      82.81     247.69        1.5 PERIOD  HAUL        43824
          546169.8  4161092   1.28016     83.27     247.69        1.5 PERIOD  HAUL        43824
          546201.1  4161112   1.444       83.18     247.69        1.5 PERIOD  HAUL        43824
          546188.6  4161092   1.28108     83.32     247.69        1.5 PERIOD  HAUL        43824
            546006  4161475  44.74869    182.92     247.69        1.5 PERIOD  HAUL        43824
          545971.5  4161496  39.23918    182.77     247.69        1.5 PERIOD  HAUL        43824
          545993.7  4161455  59.90622    180.82     247.69        1.5 PERIOD  HAUL        43824
          545999.6  4161466  52.94273    182.08     247.69        1.5 PERIOD  HAUL        43824
          545961.5  4161481   53.0157    181.52     247.69        1.5 PERIOD  HAUL        43824
          545956.8  4161465  72.07223    179.48     247.69        1.5 PERIOD  HAUL        43824
          545985.3  4161437  67.70916    178.31     247.69        1.5 PERIOD  HAUL        43824
          545973.8  4161427  80.63282    176.57     247.69        1.5 PERIOD  HAUL        43824
          545946.5  4161449  84.41592    175.56     247.69        1.5 PERIOD  HAUL        43824
          545958.8  4161416  89.70484    174.58     247.69        1.5 PERIOD  HAUL        43824
          545943.7  4161411  93.75415    172.81     247.69        1.5 PERIOD  HAUL        43824
          545922.3  4161445  85.10266    168.95     247.69        1.5 PERIOD  HAUL        43824
          545906.4  4161451   76.3513    166.11     247.69        1.5 PERIOD  HAUL        43824
          545927.4  4161411    101.47    170.95     247.69        1.5 PERIOD  HAUL        43824
          545908.8  4161416   105.926    168.34     247.69        1.5 PERIOD  HAUL        43824
          545890.1  4161459  65.81141    163.78     247.69        1.5 PERIOD  HAUL        43824
          545874.6  4161458  78.05486    161.75     247.69        1.5 PERIOD  HAUL        43824
          545886.9  4161422  110.7007    164.66     247.69        1.5 PERIOD  HAUL        43824
          545874.6  4161425  117.4343    162.41     247.69        1.5 PERIOD  HAUL        43824
          545858.8  4161427  117.8436    160.59     247.69        1.5 PERIOD  HAUL        43824
          545844.9  4161430  124.1861    159.67     247.69        1.5 PERIOD  HAUL        43824
          545859.2  4161461  79.72096    160.22     247.69        1.5 PERIOD  HAUL        43824
          545845.7  4161465  73.36789    159.86     247.69        1.5 PERIOD  HAUL        43824
**        CONCUNIT ug/m^3
**        DEPUNIT  g/m^2
```

Fassler Tank Replacement
All Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days				Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	91	123.00	0.00	214	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027	0	242.00	0.00	242	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.01E-03	6.25E-07	3.80E-04	6.25E-07
2027	1/1/2027	8/30/2027	1.72E-03	3.00E-08	7.69E-04	3.00E-08

Risk Factors

	Abbreviation	UOM	3rd Trimester	0<2	2<16
Daily Breathing Rate (95th %'ile)	DBR	L/kg-day	361	1090	572
Fraction Of Time At Home	FAH	unitless	1	1	0.72
Exposure Frequency	EF	days/year	0.96	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	10	3
Inhalation Absorption Factor	A	unitless	1	1	1
Conversion Factor	CF_1	m^3/L	0.001	0.001	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001	0.001	0.001
Cancer Potency Factor (diesel exha	CPF	$mg/kg\text{-}day^{-1}$	1.1	1.1	1.1
Averaging Time (for residential exp	AT	years	70.00	70.00	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	3rd Trimester	0<2	2<16
Construction	2026	DBR*FAH*EF *ED*ASF*A* CF/AT	0.012	0.050	0.000
	2027		0.000	0.099	0.000

Risk Calculation Part 1, R1

Year		3rd Trimester	0<2	2<16
2026	IF*CPF*CF	1.36E-05	5.53E-05	0.00E+00
2027		0.00E+00	1.09E-04	0.00E+00

MAX	Cancer R sk	UTM X	UTM Y
Unmitigated	11.7	546005.97	4161474.87
Mitigated	4.99	546005.97	4161474.87

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546005.97_4161	546005.97	4161474.87	4.59E-02	7.80E-02	1.73E-02	3.49E-02
545971.45_4161	545971.45	4161495.5	4.26E-02	7.24E-02	1.60E-02	3.24E-02
545993.67_4161	545993.67	4161455.03	3.64E-02	6.17E-02	1.37E-02	2.77E-02
545999.62_4161	545999.62	4161466.14	4.26E-02	7.23E-02	1.60E-02	3.24E-02
545961.53_4161	545961.53	4161480.82	3.51E-02	5.97E-02	1.32E-02	2.67E-02
545956.77_4161	545956.77	4161465.34	2.90E-02	4.92E-02	1.09E-02	2.20E-02
545985.33_4161	545985.33	4161437.17	2.71E-02	4.60E-02	1.02E-02	2.06E-02
545973.83_4161	545973.83	4161426.86	2.25E-02	3.82E-02	8.49E-03	1.71E-02
545946.45_4161	545946.45	4161449.47	2.13E-02	3.61E-02	8.03E-03	1.62E-02
545958.75_4161	545958.75	4161415.75	1.79E-02	3.03E-02	6.75E-03	1.36E-02
545943.67_4161	545943.67	4161410.59	1.50E-02	2.54E-02	5.67E-03	1.14E-02
545922.25_4161	545922.25	4161445.11	1.44E-02	2.44E-02	5.44E-03	1.09E-02
545906.38_4161	545906.38	4161451.46	1.20E-02	2.03E-02	4.53E-03	9.08E-03
545927.41_4161	545927.41	4161411.39	1.28E-02	2.16E-02	4.84E-03	9.69E-03
545908.76_4161	545908.76	4161415.75	1.06E-02	1.80E-02	4.03E-03	8.04E-03
545890.11_4161	545890.11	4161459.39	1.01E-02	1.71E-02	3.83E-03	7.67E-03
545874.64_4161	545874.64	4161458.2	8.56E-03	1.45E-02	3.24E-03	6.48E-03
545886.94_4161	545886.94	4161422.1	8.62E-03	1.45E-02	3.28E-03	6.51E-03
545874.64_4161	545874.64	4161425.27	7.72E-03	1.30E-02	2.95E-03	5.82E-03
545858.77_4161	545858.77	4161426.86	6.74E-03	1.13E-02	2.58E-03	5.08E-03
545844.88_4161	545844.88	4161430.03	6.10E-03	1.02E-02	2.34E-03	4.59E-03
545859.16_4161	545859.16	4161460.58	7.43E-03	1.25E-02	2.82E-03	5.62E-03
545845.67_4161	545845.67	4161464.55	6.68E-03	1.13E-02	2.54E-03	5.05E-03

Unmitigated Cancer Risk, Risk Calculation Part 2

$\sum R1*C_{DPM}$			
3rd Trimester	0<2	2<16	Total
6.23E-07	1.10E-05	0.00E+00	11.65
5.78E-07	1.02E-05	0.00E+00	10.82
4.93E-07	8.74E-06	0.00E+00	9.23
5.78E-07	1.02E-05	0.00E+00	10.81
4.77E-07	8.44E-06	0.00E+00	8.92
3.93E-07	6.96E-06	0.00E+00	7.35
3.68E-07	6.52E-06	0.00E+00	6.88
3.05E-07	5.40E-06	0.00E+00	5.71
2.89E-07	5.11E-06	0.00E+00	5.40
2.42E-07	4.29E-06	0.00E+00	4.53
2.03E-07	3.59E-06	0.00E+00	3.80
1.95E-07	3.45E-06	0.00E+00	3.65
1.62E-07	2.87E-06	0.00E+00	3.03
1.73E-07	3.06E-06	0.00E+00	3.24
1.44E-07	2.54E-06	0.00E+00	2.69
1.37E-07	2.43E-06	0.00E+00	2.56
1.16E-07	2.05E-06	0.00E+00	2.16
1.17E-07	2.06E-06	0.00E+00	2.18
1.05E-07	1.84E-06	0.00E+00	1.95
9.15E-08	1.61E-06	0.00E+00	1.70
8.27E-08	1.45E-06	0.00E+00	1.54
1.01E-07	1.78E-06	0.00E+00	1.88
9.05E-08	1.60E-06	0.00E+00	1.69

Mitigated Cancer Risk, Risk Calculation Part 2

$\sum R1*C_{DPM}$			
3rd Trimester	0<2	2<16	Total
2.34E-07	4.76E-06	0.00E+00	4.99
2.17E-07	4.42E-06	0.00E+00	4.64
1.86E-07	3.77E-06	0.00E+00	3.95
2.17E-07	4.42E-06	0.00E+00	4.63
1.79E-07	3.64E-06	0.00E+00	3.82
1.48E-07	3.00E-06	0.00E+00	3.15
1.39E-07	2.81E-06	0.00E+00	2.95
1.15E-07	2.33E-06	0.00E+00	2.45
1.09E-07	2.20E-06	0.00E+00	2.31
9.15E-08	1.85E-06	0.00E+00	1.94
7.69E-08	1.55E-06	0.00E+00	1.63
7.38E-08	1.49E-06	0.00E+00	1.56
6.15E-08	1.24E-06	0.00E+00	1.30
6.57E-08	1.32E-06	0.00E+00	1.39
5.47E-08	1.10E-06	0.00E+00	1.15
5.19E-08	1.05E-06	0.00E+00	1.10
4.40E-08	8.85E-07	0.00E+00	0.93
4.45E-08	8.90E-07	0.00E+00	0.93
4.00E-08	7.97E-07	0.00E+00	0.84
3.50E-08	6.96E-07	0.00E+00	0.73
3.17E-08	6.29E-07	0.00E+00	0.66
3.83E-08	7.68E-07	0.00E+00	0.81
3.44E-08	6.90E-07	0.00E+00	0.72

Fassler Tank Replacement
All Receptors - Construction Hazard Index Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days				Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	91	274.00	0.00	365	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027	0	365.00	0.00	365	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	5.93E-04	3.66E-07	2.23E-04	3.66E-07
2027	1/1/2027	8/30/2027	1.14E-03	1.99E-08	5.10E-04	1.99E-08

Risk Factors

	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m^3	5

MAX	HI	UTM X	UTM Y
Unmitigated	0.01	545961.53	4161480.82
Mitigated	0.00	545961.53	4161480.82

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546005.97_4161	546005.97	4161474.87	6.26E-04	1.20E-03	2.36E-04	5.39E-04
545971.45_4161	545971.45	4161495.5	5.95E-04	1.14E-03	2.24E-04	5.12E-04
545993.67_4161	545993.67	4161455.03	6.02E-04	1.16E-03	2.26E-04	5.18E-04
545999.62_4161	545999.62	4161466.14	5.77E-04	1.11E-03	2.17E-04	4.96E-04
545961.53_4161	545961.53	4161480.82	2.69E-02	5.17E-02	1.01E-02	2.32E-02
545956.77_4161	545956.77	4161465.34	2.50E-02	4.80E-02	9.40E-03	2.15E-02
545985.33_4161	545985.33	4161437.17	2.13E-02	4.09E-02	8.03E-03	1.83E-02
545973.83_4161	545973.83	4161426.86	2.50E-02	4.80E-02	9.40E-03	2.15E-02
545946.45_4161	545946.45	4161449.47	2.06E-02	3.96E-02	7.75E-03	1.77E-02
545958.75_4161	545958.75	4161415.75	1.70E-02	3.26E-02	6.40E-03	1.46E-02
545943.67_4161	545943.67	4161410.59	1.59E-02	3.05E-02	5.99E-03	1.37E-02
545922.25_4161	545922.25	4161445.11	1.32E-02	2.53E-02	4.98E-03	1.13E-02
545906.38_4161	545906.38	4161451.46	1.25E-02	2.39E-02	4.71E-03	1.07E-02
545927.41_4161	545927.41	4161411.39	1.05E-02	2.01E-02	3.96E-03	8.99E-03
545908.76_4161	545908.76	4161415.75	8.79E-03	1.68E-02	3.32E-03	7.54E-03
545890.11_4161	545890.11	4161459.39	8.44E-03	1.62E-02	3.19E-03	7.24E-03
545874.64_4161	545874.64	4161458.2	7.02E-03	1.34E-02	2.66E-03	6.02E-03
545886.94_4161	545886.94	4161422.1	7.50E-03	1.43E-02	2.84E-03	6.42E-03
545874.64_4161	545874.64	4161425.27	6.23E-03	1.19E-02	2.37E-03	5.33E-03
545858.77_4161	545858.77	4161426.86	5.93E-03	1.14E-02	2.24E-03	5.09E-03
545844.88_4161	545844.88	4161430.03	5.02E-03	9.59E-03	1.90E-03	4.29E-03
545859.16_4161	545859.16	4161460.58	5.05E-03	9.63E-03	1.92E-03	4.31E-03
545845.67_4161	545845.67	4161464.55	4.53E-03	8.62E-03	1.73E-03	3.86E-03

Unmitigated HI Risk

	C_{DPM}/REL		
	2026	2027	Max
546005.97_4161	1.25E-04	2.41E-04	0.00
545971.45_4161	1.19E-04	2.29E-04	0.00
545993.67_4161	1.20E-04	2.31E-04	0.00
545999.62_4161	1.15E-04	2.22E-04	0.00
545961.53_4161	5.38E-03	1.03E-02	0.01
545956.77_4161	5.00E-03	9.60E-03	0.01
545985.33_4161	4.27E-03	8.19E-03	0.01
545973.83_4161	5.00E-03	9.59E-03	0.01
545946.45_4161	4.12E-03	7.91E-03	0.01
545958.75_4161	3.40E-03	6.52E-03	0.01
545943.67_4161	3.18E-03	6.10E-03	0.01
545922.25_4161	2.64E-03	5.06E-03	0.01
545906.38_4161	2.50E-03	4.79E-03	0.00
545927.41_4161	2.10E-03	4.02E-03	0.00
545908.76_4161	1.76E-03	3.36E-03	0.00
545890.11_4161	1.69E-03	3.23E-03	0.00
545874.64_4161	1.40E-03	2.69E-03	0.00
545886.94_4161	1.50E-03	2.87E-03	0.00
545874.64_4161	1.25E-03	2.38E-03	0.00
545858.77_4161	1.19E-03	2.27E-03	0.00
545844.88_4161	1.00E-03	1.92E-03	0.00
545859.16_4161	1.01E-03	1.93E-03	0.00
545845.67_4161	9.06E-04	1.72E-03	0.00

Mitigated HI Risk

	C_{DPM}/REL		
	2026	2027	Max
546005.97_4161	4.71E-05	1.08E-04	0.00
545971.45_4161	4.48E-05	1.02E-04	0.00
545993.67_4161	4.53E-05	1.04E-04	0.00
545999.62_4161	4.34E-05	9.93E-05	0.00
545961.53_4161	2.02E-03	4.63E-03	0.00
545956.77_4161	1.88E-03	4.30E-03	0.00
545985.33_4161	1.61E-03	3.67E-03	0.00
545973.83_4161	1.88E-03	4.30E-03	0.00
545946.45_4161	1.55E-03	3.54E-03	0.00
545958.75_4161	1.28E-03	2.92E-03	0.00
545943.67_4161	1.20E-03	2.73E-03	0.00
545922.25_4161	9.96E-04	2.27E-03	0.00
545906.38_4161	9.42E-04	2.14E-03	0.00
545927.41_4161	7.92E-04	1.80E-03	0.00
545908.76_4161	6.65E-04	1.51E-03	0.00
545890.11_4161	6.38E-04	1.45E-03	0.00
545874.64_4161	5.31E-04	1.20E-03	0.00
545886.94_4161	5.68E-04	1.28E-03	0.00
545874.64_4161	4.73E-04	1.07E-03	0.00
545858.77_4161	4.49E-04	1.02E-03	0.00
545844.88_4161	3.80E-04	8.59E-04	0.00
545859.16_4161	3.85E-04	8.63E-04	0.00
545845.67_4161	3.46E-04	7.72E-04	0.00

Fassler Tank Replacement
All Receptors - Construction Annual Average $PM_{2.5}$ Concentration

Haul Truck Trip Lengths

	Haul	Vendor	Worker	
Trip Length	20	8.4	11.7	miles
	32187	13518	18829	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor	Worker
Haul	0.01	0.03	0.02

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days				Total Unmitigated $PM_{2.5}$ (tons)				Total Mitigated $PM_{2.5}$ (tons)			
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips
2026	6/1/2026	12/31/2026	91	274.00	0.00	365	1.95E-02	6.15E-03	3.36E-05	1.20E-03	7.85E-03	6.15E-03	3.36E-05	1.20E-03
2027	1/1/2027	8/30/2027	0	365.00	0.00	365	3.64E-02	0.00E+00	1.21E-04	7.95E-04	1.67E-02	0.00E+00	1.21E-04	7.95E-04

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	5.60E-04	3.23E-06	2.26E-04	3.23E-06
2027	1/1/2027	8/30/2027	1.05E-03	6.43E-07	4.80E-04	6.43E-07

MAX	PM2.5	UTM X	UTM Y	Year
Unmitigated	0.05	545961.53	4161480.82	2027
Mitigated	0.02	545961.53	4161480.82	2027

Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

			Unmitigated		Mitigated		Unmitigated		Mitigated	
							$PM_{2.5}$ Concentration		$PM_{2.5}$ Concentration	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027	Max	Max Year	Max	Max Year
546005.97_4161	546005.97	4161474.87	5.96E-04	1.11E-03	2.43E-04	5.08E-04	1.11E-03	2027	5.08E-04	2027
545971.45_4161	545971.45	4161495.5	5.66E-04	1.05E-03	2.31E-04	4.82E-04	1.05E-03	2027	4.82E-04	2027
545993.67_4161	545993.67	4161455.03	5.73E-04	1.06E-03	2.34E-04	4.88E-04	1.06E-03	2027	4.88E-04	2027
545999.62_4161	545999.62	4161466.14	5.49E-04	1.02E-03	2.24E-04	4.68E-04	1.02E-03	2027	4.68E-04	2027
545961.53_4161	545961.53	4161480.82	2.55E-02	4.76E-02	1.04E-02	2.18E-02	4.76E-02	2027	2.18E-02	2027
545956.77_4161	545956.77	4161465.34	2.37E-02	4.42E-02	9.64E-03	2.02E-02	4.42E-02	2027	2.02E-02	2027
545985.33_4161	545985.33	4161437.17	2.03E-02	3.77E-02	8.31E-03	1.73E-02	3.77E-02	2027	1.73E-02	2027
545973.83_4161	545973.83	4161426.86	2.37E-02	4.42E-02	9.68E-03	2.02E-02	4.42E-02	2027	2.02E-02	2027
545946.45_4161	545946.45	4161449.47	1.96E-02	3.64E-02	8.01E-03	1.67E-02	3.64E-02	2027	1.67E-02	2027
545958.75_4161	545958.75	4161415.75	1.63E-02	3.00E-02	6.70E-03	1.38E-02	3.00E-02	2027	1.38E-02	2027
545943.67_4161	545943.67	4161410.59	1.52E-02	2.81E-02	6.27E-03	1.29E-02	2.81E-02	2027	1.29E-02	2027
545922.25_4161	545922.25	4161445.11	1.27E-02	2.33E-02	5.28E-03	1.07E-02	2.33E-02	2027	1.07E-02	2027
545906.38_4161	545906.38	4161451.46	1.20E-02	2.21E-02	5.02E-03	1.01E-02	2.21E-02	2027	1.01E-02	2027
545927.41_4161	545927.41	4161411.39	1.02E-02	1.85E-02	4.27E-03	8.51E-03	1.85E-02	2027	8.51E-03	2027
545908.76_4161	545908.76	4161415.75	8.57E-03	1.55E-02	3.64E-03	7.14E-03	1.55E-02	2027	7.14E-03	2027
545890.11_4161	545890.11	4161459.39	8.22E-03	1.49E-02	3.48E-03	6.86E-03	1.49E-02	2027	6.86E-03	2027
545874.64_4161	545874.64	4161458.2	6.86E-03	1.24E-02	2.91E-03	5.71E-03	1.24E-02	2027	5.71E-03	2027
545886.94_4161	545886.94	4161422.1	7.37E-03	1.33E-02	3.17E-03	6.10E-03	1.33E-02	2027	6.10E-03	2027
545874.64_4161	545874.64	4161425.27	6.19E-03	1.10E-02	2.70E-03	5.08E-03	1.10E-02	2027	5.08E-03	2027
545858.77_4161	545858.77	4161426.86	5.80E-03	1.05E-02	2.47E-03	4.83E-03	1.05E-02	2027	4.83E-03	2027
545844.88_4161	545844.88	4161430.03	4.96E-03	8.87E-03	2.15E-03	4.09E-03	8.87E-03	2027	4.09E-03	2027
545859.16_4161	545859.16	4161460.58	5.09E-03	8.93E-03	2.27E-03	4.13E-03	8.93E-03	2027	4.13E-03	2027
545845.67_4161	545845.67	4161464.55	4.62E-03	8.00E-03	2.09E-03	3.71E-03	8.00E-03	2027	3.71E-03	2027

Fassler Tank Replacement
School Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days			Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date		Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026		214	214	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027		242	242	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.01E-03	6.25E-07	3.80E-04	6.25E-07
2027	1/1/2027	8/30/2027	1.72E-03	3.00E-08	7.69E-04	3.00E-08

Risk Factors

	Abbreviation	UOM	Age 2<16
8HR Breathing Rate (95th %'ile)	8HR-BR	L/kg-day	520
Modeling Adjustment Factor	MAF	unitless	4.2
Exposure Frequency	EF	days/year	0.49
Age Sensitivity Factor	ASF	unitless	3
Inhalation Absorption Factor	A	unitless	1
Conversion Factor	CF_1	m^3/L	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001
Cancer Potency Factor (diesel exhau	CPF	$mg/kg\text{-}day^{-1}$	1.1
Averaging Time (for residential expo	AT	years	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	Age 2<16
Construction	2026	DBR*MAF*EF *ED*ASF*A*C F/AT	0.027
	2027		0.031

Risk Calculation Part 1, R1

Year		Age 2<16
2026	IF*CPF*CF	2.98E-05
2027		3.37E-05

	Cancer Risk	UTM X	UTM Y
Unmitigated	0.09	546179.87	4161112.13
Mitigated	0.04	546179.87	4161112.13

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546179.87_41611	546179.87	4161112.13	1.07E-03	1.81E-03	4.02E-04	8.13E-04
546169.75_41610	546169.75	4161091.9	1.01E-03	1.72E-03	3.82E-04	7.72E-04
546201.12_41611	546201.12	4161112.47	1.03E-03	1.74E-03	3.86E-04	7.81E-04
546188.64_41610	546188.64	4161092.23	9.84E-04	1.67E-03	3.70E-04	7.49E-04

Unmitigated		Mitigated	
$\sum R1*C_{DPM}$		$\sum R1*C_{DPM}$	
Age 2<16	Total Child	Age 2<16	Total Child
9.29E-08	0.09	3.93E-08	0.04
8.82E-08	0.09	3.73E-08	0.04
8.92E-08	0.09	3.78E-08	0.04
8.56E-08	0.09	3.62E-08	0.04

Fassler Tank Replacement
School Receptors - Construction Hazard Index Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days		Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	365.00	365	5.06E-02	0.00E+00	7.90E-04	1.12E-03	3.51E-05	3.36E-05
2027	1/1/2027	8/30/2027	365.0	365	7.28E-03	0.00E+00	9.64E-05	1.28E-03	0.00E+00	4.13E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.45E-03	7.34E-07	3.23E-05	4.49E-08
2027	1/1/2027	8/30/2027	2.10E-04	8.95E-08	3.68E-05	3.84E-08

Risk Factors

	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m^3	5

MAX	HI	UTM X	UTM Y
Unmitigated	0.00	595291.74	4093725.14
Mitigated	0.00	595291.74	4093725.14

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
595291.74_40937	595291.74	4093725.14	1.54E-03	2.21E-04	3.42E-05	3.90E-05
595308.34_40937	595308.34	4093748.8	1.46E-03	2.10E-04	3.25E-05	3.70E-05
595613.25_40937	595613.25	4093736.57	1.48E-03	2.13E-04	3.29E-05	3.74E-05
595623.96_40937	595623.96	4093762.98	1.42E-03	2.04E-04	3.15E-05	3.59E-05

Unmitigated HI Risk

C_{DPM}/REL		
2026	2027	Max
3.08E-04	4.43E-05	0.0003075255
2.92E-04	4.21E-05	0.0002920981
2.95E-04	4.25E-05	0.0002954415
2.83E-04	4.08E-05	0.0002833212

Mitigated HI Risk

C_{DPM}/REL		
2026	2026	Max
6.84E-06	7.79E-06	7.79118E-06
6.50E-06	7.40E-06	7.39998E-06
6.57E-06	7.49E-06	7.48527E-06
6.30E-06	7.18E-06	7.17778E-06

Fassler Tank Replacement
School Receptors - Construction Annual Average $PM_{2.5}$ Concentration

Haul Truck Trip Lengths

	Haul	Vendor	Worker	
Trip Length	20	8.4	11.7	miles
	32187	13518	18829	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor	Worker
Haul	0.01	0.03	0.02

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days		Total Unmitigated $PM_{2.5}$ (tons)				Total Mitigated $PM_{2.5}$ (tons)			
Construction Year	Start Date	End Date	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips
2026	6/1/2026	12/31/2026	365.00	365	1.95E-02	6.15E-03	3.36E-05	1.20E-03	7.85E-03	6.15E-03	3.36E-05	1.20E-03
2027	1/1/2027	8/30/2027	365.00	365	3.64E-02	0.00E+00	1.21E-04	7.95E-04	1.67E-02	0.00E+00	1.21E-04	7.95E-04

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	5.60E-04	3.23E-06	2.26E-04	3.23E-06
2027	1/1/2027	8/30/2027	1.05E-03	6.43E-07	4.80E-04	6.43E-07

MAX	PM2.5	UTM X	UTM Y	Year
Unmitigated	0.00	546179.87	4161112.13	2027
Mitigated	0.00	546179.87	4161112.13	2027

Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546179.87_4161	546179.87	4161112.13	5.96E-04	1.11E-03	2.43E-04	5.08E-04
546169.75_4161	546169.75	4161091.9	5.66E-04	1.05E-03	2.31E-04	4.82E-04
546201.12_4161	546201.12	4161112.47	5.73E-04	1.06E-03	2.34E-04	4.88E-04
546188.64_4161	546188.64	4161092.23	5.49E-04	1.02E-03	2.24E-04	4.68E-04

Unmitigated

$PM_{2.5}$ Concentration	
Max	Max Year
1.11E-03	2027
1.05E-03	2027
1.06E-03	2027
1.02E-03	2027

Mitigated

$PM_{2.5}$ Concentration	
Max	Max Year
5.08E-04	2027
4.82E-04	2027
4.88E-04	2027
4.68E-04	2027

Fassler Tank Replacement
Worker Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days		Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	Age 16<70	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	214.00	214	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027	242.00	242	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.01E-03	6.25E-07	3.80E-04	6.25E-07
2027	1/1/2027	8/30/2027	1.72E-03	3.00E-08	7.69E-04	3.00E-08

Risk Factors

	Abbreviation	UOM	Age 16<70
8HR Breathing Rate (95th %'ile)	8HR-BR	L/kg-day	230
Modeling Adjustment Factor	MAF	unitless	4.2
Exposure Frequency	EF	days/year	0.49
Age Sensitivity Factor	ASF	unitless	1
Inhalation Absorption Factor	A	unitless	1
Conversion Factor	CF_1	m^3/L	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001
Cancer Potency Factor (diesel exha	CPF	$mg/kg\text{-}day^{-1}$	1.1
Averaging Time (for residential exp	AT	years	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	Age 16<70
Construction	2026	DBR*MAF*EF*ED*ASF*A*CF/AT	0.004
	2027		0.005

Risk Calculation Part 1, R1

Year		Age 16<70
2026	IF*CPF*CF	4.39E-06
2027		4.96E-06

	Cancer Risk	UTM X	UTM Y
Unmitigated	0.0137	546179.87	4161112.13
Mitigated	0.0058	546179.87	4161112.13

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated		$\sum R1*C_{DPM}$	$\sum R1*C_{DPM}$
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027	Total Unmitigated Adult	Total MitigatedAdult
546179.87_4161:	546179.87	4161112.13	1.07E-03	1.81E-03	4.02E-04	8.13E-04	0.0137	0.0058
546169.75_4161(	546169.75	4161091.9	1.01E-03	1.72E-03	3.82E-04	7.72E-04	0.0130	0.0055
546201.12_4161:	546201.12	4161112.47	1.03E-03	1.74E-03	3.86E-04	7.81E-04	0.0132	0.0056
546188.64_4161(	546188.64	4161092.23	9.84E-04	1.67E-03	3.70E-04	7.49E-04	0.0126	0.0053

```
*          AERMOD  (24142     ):          C:\Fassler Tank\Fassl ########
*          AERMET  (           18081):       8:39:01
*          MODELIN( OPTIONS    USED:       RegDFAUL CONC       ELEV       FLGPOL  RURAL     ADJ_U*
*          PLOT    FILE        OF          PERIOD   VALUES     AVERAGEI ACROSS             0 YEARS     FOR       SOURCE    GROUP:    CNST
*          FOR     A           TOTAL       OF                      27 RECEPTORS.
*          FORMAT: (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)
*          X       Y           AVERAGE     CONC       ZELEV      ZHILL      ZFLAG    AVE         GRP         NUM       HRS       NET       ID
*          ________ _________ _________ _______  _______  _______  _______  _________ _________ _________
546179.87 546179.9  4161112    1.05636     82.81    247.69        1.5 PERIOD   CNST          43824
546169.75 546169.8  4161092    1.00341     83.27    247.69        1.5 PERIOD   CNST          43824
546201.12 546201.1  4161112    1.01482     83.18    247.69        1.5 PERIOD   CNST          43824
546188.64 546188.6  4161092    0.97324     83.32    247.69        1.5 PERIOD   CNST          43824
546005.97   546006  4161475   45.39567    182.92    247.69        1.5 PERIOD   CNST          43824
545971.45 545971.5  4161496   42.15323    182.77    247.69        1.5 PERIOD   CNST          43824
545993.67 545993.7  4161455   35.95341    180.82    247.69        1.5 PERIOD   CNST          43824
545999.62 545999.6  4161466   42.12553    182.08    247.69        1.5 PERIOD   CNST          43824
545961.53 545961.5  4161481   34.73678    181.52    247.69        1.5 PERIOD   CNST          43824
545956.77 545956.8  4161465    28.6262    179.48    247.69        1.5 PERIOD   CNST          43824
545985.33 545985.3  4161437   26.80473    178.31    247.69        1.5 PERIOD   CNST          43824
545973.83 545973.8  4161427   22.22811    176.57    247.69        1.5 PERIOD   CNST          43824
545946.45 545946.5  4161449   21.01139    175.56    247.69        1.5 PERIOD   CNST          43824
545958.75 545958.8  4161416    17.6304    174.58    247.69        1.5 PERIOD   CNST          43824
545943.67 545943.7  4161411   14.77232    172.81    247.69        1.5 PERIOD   CNST          43824
545922.25 545922.3  4161445   14.19116    168.95    247.69        1.5 PERIOD   CNST          43824
545906.38 545906.4  4161451   11.80834    166.11    247.69        1.5 PERIOD   CNST          43824
545927.41 545927.4  4161411   12.59136    170.95    247.69        1.5 PERIOD   CNST          43824
545908.76 545908.8  4161416   10.45225    168.34    247.69        1.5 PERIOD   CNST          43824
545890.11 545890.1  4161459    9.97532    163.78    247.69        1.5 PERIOD   CNST          43824
545874.64 545874.6  4161458    8.41734    161.75    247.69        1.5 PERIOD   CNST          43824
545886.94 545886.9  4161422    8.45701    164.66    247.69        1.5 PERIOD   CNST          43824
545874.64 545874.6  4161425    7.56859    162.41    247.69        1.5 PERIOD   CNST          43824
545858.77 545858.8  4161427    6.59987    160.59    247.69        1.5 PERIOD   CNST          43824
545844.88 545844.9  4161430    5.95899    159.67    247.69        1.5 PERIOD   CNST          43824
545859.16 545859.2  4161461    7.30486    160.22    247.69        1.5 PERIOD   CNST          43824
545845.67 545845.7  4161465    6.55975    159.86    247.69        1.5 PERIOD   CNST          43824
**          CONCUNIT ug/m^3
**          DEPUNIT  g/m^2
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*         AERMOD  (24142     ):          C:\Fassler Tank\Fassl ########
*         AERMET  (           18081):       8:39:01
*         MODELIN( OPTIONS  USED:     RegDFAUL CONC      ELEV       FLGPOL  RURAL    ADJ_U*
*         PLOT      FILE    OF        PERIOD   VALUES    AVERAGEI ACROSS          0 YEARS    FOR       SOURCE   GROUP:   HAUL
*         FOR       A       TOTAL     OF                    27 RECEPTORS.
*         FORMAT:  (3(1X,F13.5),3(1X,F8.2),2X,A6,2X,A8,2X,I8.8,2X,A8)
*         X         Y       AVERAGE   CONC     ZELEV     ZHILL     ZFLAG   AVE      GRP      NUM      HRS      NET      ID
*         ________  ________  ________  ______   ______    ______    ______  ________ ________ ________
          546179.9  4161112    1.4391    82.81   247.69       1.5  PERIOD  HAUL      43824
          546169.8  4161092   1.28016    83.27   247.69       1.5  PERIOD  HAUL      43824
          546201.1  4161112     1.444    83.18   247.69       1.5  PERIOD  HAUL      43824
          546188.6  4161092   1.28108    83.32   247.69       1.5  PERIOD  HAUL      43824
            546006  4161475  44.74869   182.92   247.69       1.5  PERIOD  HAUL      43824
          545971.5  4161496  39.23918   182.77   247.69       1.5  PERIOD  HAUL      43824
          545993.7  4161455  59.90622   180.82   247.69       1.5  PERIOD  HAUL      43824
          545999.6  4161466  52.94273   182.08   247.69       1.5  PERIOD  HAUL      43824
          545961.5  4161481   53.0157   181.52   247.69       1.5  PERIOD  HAUL      43824
          545956.8  4161465  72.07223   179.48   247.69       1.5  PERIOD  HAUL      43824
          545985.3  4161437  67.70916   178.31   247.69       1.5  PERIOD  HAUL      43824
          545973.8  4161427  80.63282   176.57   247.69       1.5  PERIOD  HAUL      43824
          545946.5  4161449  84.41592   175.56   247.69       1.5  PERIOD  HAUL      43824
          545958.8  4161416  89.70484   174.58   247.69       1.5  PERIOD  HAUL      43824
          545943.7  4161411  93.75415   172.81   247.69       1.5  PERIOD  HAUL      43824
          545922.3  4161445  85.10266   168.95   247.69       1.5  PERIOD  HAUL      43824
          545906.4  4161451   76.3513   166.11   247.69       1.5  PERIOD  HAUL      43824
          545927.4  4161411    101.47   170.95   247.69       1.5  PERIOD  HAUL      43824
          545908.8  4161416   105.926   168.34   247.69       1.5  PERIOD  HAUL      43824
          545890.1  4161459  65.81141   163.78   247.69       1.5  PERIOD  HAUL      43824
          545874.6  4161458  78.05486   161.75   247.69       1.5  PERIOD  HAUL      43824
          545886.9  4161422  110.7007   164.66   247.69       1.5  PERIOD  HAUL      43824
          545874.6  4161425  117.4343   162.41   247.69       1.5  PERIOD  HAUL      43824
          545858.8  4161427  117.8436   160.59   247.69       1.5  PERIOD  HAUL      43824
          545844.9  4161430  124.1861   159.67   247.69       1.5  PERIOD  HAUL      43824
          545859.2  4161461  79.72096   160.22   247.69       1.5  PERIOD  HAUL      43824
          545845.7  4161465  73.36789   159.86   247.69       1.5  PERIOD  HAUL      43824
**        CONCUNIT ug/m^3
**        DEPUNIT  g/m^2
```

Fassler Tank Replacement
All Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days				Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	91	123.00	0.00	214	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027	0	242.00	0.00	242	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.01E-03	6.25E-07	3.80E-04	6.25E-07
2027	1/1/2027	8/30/2027	1.72E-03	3.00E-08	7.69E-04	3.00E-08

Risk Factors

	Abbreviation	UOM	3rd Trimester	0<2	2<16
Daily Breathing Rate (95th %'ile)	DBR	L/kg-day	361	1090	572
Fraction Of Time At Home	FAH	unitless	1	1	0.72
Exposure Frequency	EF	days/year	0.96	0.96	0.96
Age Sensitivity Factor	ASF	unitless	10	10	3
Inhalation Absorption Factor	A	unitless	1	1	1
Conversion Factor	CF_1	m^3/L	0.001	0.001	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001	0.001	0.001
Cancer Potency Factor (diesel exha	CPF	$mg/kg\text{-}day^{-1}$	1.1	1.1	1.1
Averaging Time (for residential exp	AT	years	70.00	70.00	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	3rd Trimester	0<2	2<16
Construction	2026	DBR*FAH*EF *ED*ASF*A* CF/AT	0.012	0.050	0.000
	2027		0.000	0.099	0.000

Risk Calculation Part 1, R1

Year		3rd Trimester	0<2	2<16
2026	IF*CPF*CF	1.36E-05	5.53E-05	0.00E+00
2027		0.00E+00	1.09E-04	0.00E+00

MAX	Cancer R sk	UTM X	UTM Y
Unmitigated	11.7	546005.97	4161474.87
Mitigated	4.99	546005.97	4161474.87

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546005.97_4161	546005.97	4161474.87	4.59E-02	7.80E-02	1.73E-02	3.49E-02
545971.45_4161	545971.45	4161495.5	4.26E-02	7.24E-02	1.60E-02	3.24E-02
545993.67_4161	545993.67	4161455.03	3.64E-02	6.17E-02	1.37E-02	2.77E-02
545999.62_4161	545999.62	4161466.14	4.26E-02	7.23E-02	1.60E-02	3.24E-02
545961.53_4161	545961.53	4161480.82	3.51E-02	5.97E-02	1.32E-02	2.67E-02
545956.77_4161	545956.77	4161465.34	2.90E-02	4.92E-02	1.09E-02	2.20E-02
545985.33_4161	545985.33	4161437.17	2.71E-02	4.60E-02	1.02E-02	2.06E-02
545973.83_4161	545973.83	4161426.86	2.25E-02	3.82E-02	8.49E-03	1.71E-02
545946.45_4161	545946.45	4161449.47	2.13E-02	3.61E-02	8.03E-03	1.62E-02
545958.75_4161	545958.75	4161415.75	1.79E-02	3.03E-02	6.75E-03	1.36E-02
545943.67_4161	545943.67	4161410.59	1.50E-02	2.54E-02	5.67E-03	1.14E-02
545922.25_4161	545922.25	4161445.11	1.44E-02	2.44E-02	5.44E-03	1.09E-02
545906.38_4161	545906.38	4161451.46	1.20E-02	2.03E-02	4.53E-03	9.08E-03
545927.41_4161	545927.41	4161411.39	1.28E-02	2.16E-02	4.84E-03	9.69E-03
545908.76_4161	545908.76	4161415.75	1.06E-02	1.80E-02	4.03E-03	8.04E-03
545890.11_4161	545890.11	4161459.39	1.01E-02	1.71E-02	3.83E-03	7.67E-03
545874.64_4161	545874.64	4161458.2	8.56E-03	1.45E-02	3.24E-03	6.48E-03
545886.94_4161	545886.94	4161422.1	8.62E-03	1.45E-02	3.28E-03	6.51E-03
545874.64_4161	545874.64	4161425.27	7.72E-03	1.30E-02	2.95E-03	5.82E-03
545858.77_4161	545858.77	4161426.86	6.74E-03	1.13E-02	2.58E-03	5.08E-03
545844.88_4161	545844.88	4161430.03	6.10E-03	1.02E-02	2.34E-03	4.59E-03
545859.16_4161	545859.16	4161460.58	7.43E-03	1.25E-02	2.82E-03	5.62E-03
545845.67_4161	545845.67	4161464.55	6.68E-03	1.13E-02	2.54E-03	5.05E-03

Unmitigated Cancer Risk, Risk Calculation Part 2

	$\sum R1*C_{DPM}$			
	3rd Trimester	0<2	2<16	Total
546005.97_4161	6.23E-07	1.10E-05	0.00E+00	11.65
545971.45_4161	5.78E-07	1.02E-05	0.00E+00	10.82
545993.67_4161	4.93E-07	8.74E-06	0.00E+00	9.23
545999.62_4161	5.78E-07	1.02E-05	0.00E+00	10.81
545961.53_4161	4.77E-07	8.44E-06	0.00E+00	8.92
545956.77_4161	3.93E-07	6.96E-06	0.00E+00	7.35
545985.33_4161	3.68E-07	6.52E-06	0.00E+00	6.88
545973.83_4161	3.05E-07	5.40E-06	0.00E+00	5.71
545946.45_4161	2.89E-07	5.11E-06	0.00E+00	5.40
545958.75_4161	2.42E-07	4.29E-06	0.00E+00	4.53
545943.67_4161	2.03E-07	3.59E-06	0.00E+00	3.80
545922.25_4161	1.95E-07	3.45E-06	0.00E+00	3.65
545906.38_4161	1.62E-07	2.87E-06	0.00E+00	3.03
545927.41_4161	1.73E-07	3.06E-06	0.00E+00	3.24
545908.76_4161	1.44E-07	2.54E-06	0.00E+00	2.69
545890.11_4161	1.37E-07	2.43E-06	0.00E+00	2.56
545874.64_4161	1.16E-07	2.05E-06	0.00E+00	2.16
545886.94_4161	1.17E-07	2.06E-06	0.00E+00	2.18
545874.64_4161	1.05E-07	1.84E-06	0.00E+00	1.95
545858.77_4161	9.15E-08	1.61E-06	0.00E+00	1.70
545844.88_4161	8.27E-08	1.45E-06	0.00E+00	1.54
545859.16_4161	1.01E-07	1.78E-06	0.00E+00	1.88
545845.67_4161	9.05E-08	1.60E-06	0.00E+00	1.69

Mitigated Cancer Risk, Risk Calculation Part 2

	$\sum R1*C_{DPM}$			
	3rd Trimester	0<2	2<16	Total
546005.97_4161	2.34E-07	4.76E-06	0.00E+00	4.99
545971.45_4161	2.17E-07	4.42E-06	0.00E+00	4.64
545993.67_4161	1.86E-07	3.77E-06	0.00E+00	3.95
545999.62_4161	2.17E-07	4.42E-06	0.00E+00	4.63
545961.53_4161	1.79E-07	3.64E-06	0.00E+00	3.82
545956.77_4161	1.48E-07	3.00E-06	0.00E+00	3.15
545985.33_4161	1.39E-07	2.81E-06	0.00E+00	2.95
545973.83_4161	1.15E-07	2.33E-06	0.00E+00	2.45
545946.45_4161	1.09E-07	2.20E-06	0.00E+00	2.31
545958.75_4161	9.15E-08	1.85E-06	0.00E+00	1.94
545943.67_4161	7.69E-08	1.55E-06	0.00E+00	1.63
545922.25_4161	7.38E-08	1.49E-06	0.00E+00	1.56
545906.38_4161	6.15E-08	1.24E-06	0.00E+00	1.30
545927.41_4161	6.57E-08	1.32E-06	0.00E+00	1.39
545908.76_4161	5.47E-08	1.10E-06	0.00E+00	1.15
545890.11_4161	5.19E-08	1.05E-06	0.00E+00	1.10
545874.64_4161	4.40E-08	8.85E-07	0.00E+00	0.93
545886.94_4161	4.45E-08	8.90E-07	0.00E+00	0.93
545874.64_4161	4.00E-08	7.97E-07	0.00E+00	0.84
545858.77_4161	3.50E-08	6.96E-07	0.00E+00	0.73
545844.88_4161	3.17E-08	6.29E-07	0.00E+00	0.66
545859.16_4161	3.83E-08	7.68E-07	0.00E+00	0.81
545845.67_4161	3.44E-08	6.90E-07	0.00E+00	0.72

Fassler Tank Replacement
All Receptors - Construction Hazard Index Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days				Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	91	274.00	0.00	365	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027	0	365.00	0.00	365	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	5.93E-04	3.66E-07	2.23E-04	3.66E-07
2027	1/1/2027	8/30/2027	1.14E-03	1.99E-08	5.10E-04	1.99E-08

Risk Factors

	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m^3	5

MAX	HI	UTM X	UTM Y
Unmitigated	0.01	545961.53	4161480.82
Mitigated	0.00	545961.53	4161480.82

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546005.97_4161	546005.97	4161474.87	6.26E-04	1.20E-03	2.36E-04	5.39E-04
545971.45_4161	545971.45	4161495.5	5.95E-04	1.14E-03	2.24E-04	5.12E-04
545993.67_4161	545993.67	4161455.03	6.02E-04	1.16E-03	2.26E-04	5.18E-04
545999.62_4161	545999.62	4161466.14	5.77E-04	1.11E-03	2.17E-04	4.96E-04
545961.53_4161	545961.53	4161480.82	2.69E-02	5.17E-02	1.01E-02	2.32E-02
545956.77_4161	545956.77	4161465.34	2.50E-02	4.80E-02	9.40E-03	2.15E-02
545985.33_4161	545985.33	4161437.17	2.13E-02	4.09E-02	8.03E-03	1.83E-02
545973.83_4161	545973.83	4161426.86	2.50E-02	4.80E-02	9.40E-03	2.15E-02
545946.45_4161	545946.45	4161449.47	2.06E-02	3.96E-02	7.75E-03	1.77E-02
545958.75_4161	545958.75	4161415.75	1.70E-02	3.26E-02	6.40E-03	1.46E-02
545943.67_4161	545943.67	4161410.59	1.59E-02	3.05E-02	5.99E-03	1.37E-02
545922.25_4161	545922.25	4161445.11	1.32E-02	2.53E-02	4.98E-03	1.13E-02
545906.38_4161	545906.38	4161451.46	1.25E-02	2.39E-02	4.71E-03	1.07E-02
545927.41_4161	545927.41	4161411.39	1.05E-02	2.01E-02	3.96E-03	8.99E-03
545908.76_4161	545908.76	4161415.75	8.79E-03	1.68E-02	3.32E-03	7.54E-03
545890.11_4161	545890.11	4161459.39	8.44E-03	1.62E-02	3.19E-03	7.24E-03
545874.64_4161	545874.64	4161458.2	7.02E-03	1.34E-02	2.66E-03	6.02E-03
545886.94_4161	545886.94	4161422.1	7.50E-03	1.43E-02	2.84E-03	6.42E-03
545874.64_4161	545874.64	4161425.27	6.23E-03	1.19E-02	2.37E-03	5.33E-03
545858.77_4161	545858.77	4161426.86	5.93E-03	1.14E-02	2.24E-03	5.09E-03
545844.88_4161	545844.88	4161430.03	5.02E-03	9.59E-03	1.90E-03	4.29E-03
545859.16_4161	545859.16	4161460.58	5.05E-03	9.63E-03	1.92E-03	4.31E-03
545845.67_4161	545845.67	4161464.55	4.53E-03	8.62E-03	1.73E-03	3.86E-03

Unmitigated HI Risk

	C_{DPM}/REL		
	2026	2027	Max
546005.97_4161	1.25E-04	2.41E-04	0.00
545971.45_4161	1.19E-04	2.29E-04	0.00
545993.67_4161	1.20E-04	2.31E-04	0.00
545999.62_4161	1.15E-04	2.22E-04	0.00
545961.53_4161	5.38E-03	1.03E-02	0.01
545956.77_4161	5.00E-03	9.60E-03	0.01
545985.33_4161	4.27E-03	8.19E-03	0.01
545973.83_4161	5.00E-03	9.59E-03	0.01
545946.45_4161	4.12E-03	7.91E-03	0.01
545958.75_4161	3.40E-03	6.52E-03	0.01
545943.67_4161	3.18E-03	6.10E-03	0.01
545922.25_4161	2.64E-03	5.06E-03	0.01
545906.38_4161	2.50E-03	4.79E-03	0.00
545927.41_4161	2.10E-03	4.02E-03	0.00
545908.76_4161	1.76E-03	3.36E-03	0.00
545890.11_4161	1.69E-03	3.23E-03	0.00
545874.64_4161	1.40E-03	2.69E-03	0.00
545886.94_4161	1.50E-03	2.87E-03	0.00
545874.64_4161	1.25E-03	2.38E-03	0.00
545858.77_4161	1.19E-03	2.27E-03	0.00
545844.88_4161	1.00E-03	1.92E-03	0.00
545859.16_4161	1.01E-03	1.93E-03	0.00
545845.67_4161	9.06E-04	1.72E-03	0.00

Mitigated HI Risk

	C_{DPM}/REL		
	2026	2027	Max
546005.97_4161	4.71E-05	1.08E-04	0.00
545971.45_4161	4.48E-05	1.02E-04	0.00
545993.67_4161	4.53E-05	1.04E-04	0.00
545999.62_4161	4.34E-05	9.93E-05	0.00
545961.53_4161	2.02E-03	4.63E-03	0.00
545956.77_4161	1.88E-03	4.30E-03	0.00
545985.33_4161	1.61E-03	3.67E-03	0.00
545973.83_4161	1.88E-03	4.30E-03	0.00
545946.45_4161	1.55E-03	3.54E-03	0.00
545958.75_4161	1.28E-03	2.92E-03	0.00
545943.67_4161	1.20E-03	2.73E-03	0.00
545922.25_4161	9.96E-04	2.27E-03	0.00
545906.38_4161	9.42E-04	2.14E-03	0.00
545927.41_4161	7.92E-04	1.80E-03	0.00
545908.76_4161	6.65E-04	1.51E-03	0.00
545890.11_4161	6.38E-04	1.45E-03	0.00
545874.64_4161	5.31E-04	1.20E-03	0.00
545886.94_4161	5.68E-04	1.28E-03	0.00
545874.64_4161	4.73E-04	1.07E-03	0.00
545858.77_4161	4.49E-04	1.02E-03	0.00
545844.88_4161	3.80E-04	8.59E-04	0.00
545859.16_4161	3.85E-04	8.63E-04	0.00
545845.67_4161	3.46E-04	7.72E-04	0.00

Fassler Tank Replacement
All Receptors - Construction Annual Average $PM_{2.5}$ Concentration

Haul Truck Trip Lengths

	Haul	Vendor	Worker	
Trip Length	20	8.4	11.7	miles
	32187	13518	18829	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor	Worker
Haul	0.01	0.03	0.02

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days				Total Unmitigated $PM_{2.5}$ (tons)				Total Mitigated $PM_{2.5}$ (tons)			
Construction Year	Start Date	End Date	3rd Trimester	Age 0<2	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips
2026	6/1/2026	12/31/2026	91	274.00	0.00	365	1.95E-02	6.15E-03	3.36E-05	1.20E-03	7.85E-03	6.15E-03	3.36E-05	1.20E-03
2027	1/1/2027	8/30/2027	0	365.00	0.00	365	3.64E-02	0.00E+00	1.21E-04	7.95E-04	1.67E-02	0.00E+00	1.21E-04	7.95E-04

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	5.60E-04	3.23E-06	2.26E-04	3.23E-06
2027	1/1/2027	8/30/2027	1.05E-03	6.43E-07	4.80E-04	6.43E-07

MAX	PM2.5	UTM X	UTM Y	Year
Unmitigated	0.05	545961.53	4161480.82	2027
Mitigated	0.02	545961.53	4161480.82	2027

Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

			Unmitigated		Mitigated		Unmitigated		Mitigated	
							$PM_{2.5}$ Concentration		$PM_{2.5}$ Concentration	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027	Max	Max Year	Max	Max Year
546005.97_4161	546005.97	4161474.87	5.96E-04	1.11E-03	2.43E-04	5.08E-04	1.11E-03	2027	5.08E-04	2027
545971.45_4161	545971.45	4161495.5	5.66E-04	1.05E-03	2.31E-04	4.82E-04	1.05E-03	2027	4.82E-04	2027
545993.67_4161	545993.67	4161455.03	5.73E-04	1.06E-03	2.34E-04	4.88E-04	1.06E-03	2027	4.88E-04	2027
545999.62_4161	545999.62	4161466.14	5.49E-04	1.02E-03	2.24E-04	4.68E-04	1.02E-03	2027	4.68E-04	2027
545961.53_4161	545961.53	4161480.82	2.55E-02	4.76E-02	1.04E-02	2.18E-02	4.76E-02	2027	2.18E-02	2027
545956.77_4161	545956.77	4161465.34	2.37E-02	4.42E-02	9.64E-03	2.02E-02	4.42E-02	2027	2.02E-02	2027
545985.33_4161	545985.33	4161437.17	2.03E-02	3.77E-02	8.31E-03	1.73E-02	3.77E-02	2027	1.73E-02	2027
545973.83_4161	545973.83	4161426.86	2.37E-02	4.42E-02	9.68E-03	2.02E-02	4.42E-02	2027	2.02E-02	2027
545946.45_4161	545946.45	4161449.47	1.96E-02	3.64E-02	8.01E-03	1.67E-02	3.64E-02	2027	1.67E-02	2027
545958.75_4161	545958.75	4161415.75	1.63E-02	3.00E-02	6.70E-03	1.38E-02	3.00E-02	2027	1.38E-02	2027
545943.67_4161	545943.67	4161410.59	1.52E-02	2.81E-02	6.27E-03	1.29E-02	2.81E-02	2027	1.29E-02	2027
545922.25_4161	545922.25	4161445.11	1.27E-02	2.33E-02	5.28E-03	1.07E-02	2.33E-02	2027	1.07E-02	2027
545906.38_4161	545906.38	4161451.46	1.20E-02	2.21E-02	5.02E-03	1.01E-02	2.21E-02	2027	1.01E-02	2027
545927.41_4161	545927.41	4161411.39	1.02E-02	1.85E-02	4.27E-03	8.51E-03	1.85E-02	2027	8.51E-03	2027
545908.76_4161	545908.76	4161415.75	8.57E-03	1.55E-02	3.64E-03	7.14E-03	1.55E-02	2027	7.14E-03	2027
545890.11_4161	545890.11	4161459.39	8.22E-03	1.49E-02	3.48E-03	6.86E-03	1.49E-02	2027	6.86E-03	2027
545874.64_4161	545874.64	4161458.2	6.86E-03	1.24E-02	2.91E-03	5.71E-03	1.24E-02	2027	5.71E-03	2027
545886.94_4161	545886.94	4161422.1	7.37E-03	1.33E-02	3.17E-03	6.10E-03	1.33E-02	2027	6.10E-03	2027
545874.64_4161	545874.64	4161425.27	6.19E-03	1.10E-02	2.70E-03	5.08E-03	1.10E-02	2027	5.08E-03	2027
545858.77_4161	545858.77	4161426.86	5.80E-03	1.05E-02	2.47E-03	4.83E-03	1.05E-02	2027	4.83E-03	2027
545844.88_4161	545844.88	4161430.03	4.96E-03	8.87E-03	2.15E-03	4.09E-03	8.87E-03	2027	4.09E-03	2027
545859.16_4161	545859.16	4161460.58	5.09E-03	8.93E-03	2.27E-03	4.13E-03	8.93E-03	2027	4.13E-03	2027
545845.67_4161	545845.67	4161464.55	4.62E-03	8.00E-03	2.09E-03	3.71E-03	8.00E-03	2027	3.71E-03	2027

Fassler Tank Replacement
School Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days			Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date		Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026		214	214	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027		242	242	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.01E-03	6.25E-07	3.80E-04	6.25E-07
2027	1/1/2027	8/30/2027	1.72E-03	3.00E-08	7.69E-04	3.00E-08

Risk Factors

	Abbreviation	UOM	Age 2<16
8HR Breathing Rate (95th %'ile)	8HR-BR	L/kg-day	520
Modeling Adjustment Factor	MAF	unitless	4.2
Exposure Frequency	EF	days/year	0.49
Age Sensitivity Factor	ASF	unitless	3
Inhalation Absorption Factor	A	unitless	1
Conversion Factor	CF_1	m^3/L	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001
Cancer Potency Factor (diesel exhau	CPF	$mg/kg\text{-}day^{-1}$	1.1
Averaging Time (for residential expo	AT	years	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	Age 2<16
Construction	2026	DBR*MAF*EF *ED*ASF*A*C F/AT	0.027
	2027		0.031

Risk Calculation Part 1, R1

Year		Age 2<16
2026	IF*CPF*CF	2.98E-05
2027		3.37E-05

	Cancer Risk	UTM X	UTM Y
Unmitigated	0.09	546179.87	4161112.13
Mitigated	0.04	546179.87	4161112.13

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546179.87_41611	546179.87	4161112.13	1.07E-03	1.81E-03	4.02E-04	8.13E-04
546169.75_41610	546169.75	4161091.9	1.01E-03	1.72E-03	3.82E-04	7.72E-04
546201.12_41611	546201.12	4161112.47	1.03E-03	1.74E-03	3.86E-04	7.81E-04
546188.64_41610	546188.64	4161092.23	9.84E-04	1.67E-03	3.70E-04	7.49E-04

Unmitigated		Mitigated	
$\sum R1*C_{DPM}$		$\sum R1*C_{DPM}$	
Age 2<16	Total Child	Age 2<16	Total Child
9.29E-08	0.09	3.93E-08	0.04
8.82E-08	0.09	3.73E-08	0.04
8.92E-08	0.09	3.78E-08	0.04
8.56E-08	0.09	3.62E-08	0.04

Fassler Tank Replacement
School Receptors - Construction Hazard Index Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days		Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	365.00	365	5.06E-02	0.00E+00	7.90E-04	1.12E-03	3.51E-05	3.36E-05
2027	1/1/2027	8/30/2027	365.0	365	7.28E-03	0.00E+00	9.64E-05	1.28E-03	0.00E+00	4.13E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.45E-03	7.34E-07	3.23E-05	4.49E-08
2027	1/1/2027	8/30/2027	2.10E-04	8.95E-08	3.68E-05	3.84E-08

Risk Factors

	Abbreviation	UOM	
Chronic Inhalation	REL	ug/m^3	5

MAX	HI	UTM X	UTM Y
Unmitigated	0.00	595291.74	4093725.14
Mitigated	0.00	595291.74	4093725.14

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
595291.74_40937	595291.74	4093725.14	1.54E-03	2.21E-04	3.42E-05	3.90E-05
595308.34_40937	595308.34	4093748.8	1.46E-03	2.10E-04	3.25E-05	3.70E-05
595613.25_40937	595613.25	4093736.57	1.48E-03	2.13E-04	3.29E-05	3.74E-05
595623.96_40937	595623.96	4093762.98	1.42E-03	2.04E-04	3.15E-05	3.59E-05

Unmitigated HI Risk

C_{DPM}/REL		
2026	2027	Max
3.08E-04	4.43E-05	0.0003075255
2.92E-04	4.21E-05	0.0002920981
2.95E-04	4.25E-05	0.0002954415
2.83E-04	4.08E-05	0.0002833212

Mitigated HI Risk

C_{DPM}/REL		
2026	2026	Max
6.84E-06	7.79E-06	7.79118E-06
6.50E-06	7.40E-06	7.39998E-06
6.57E-06	7.49E-06	7.48527E-06
6.30E-06	7.18E-06	7.17778E-06

Fassler Tank Replacement
School Receptors - Construction Annual Average $PM_{2.5}$ Concentration

Haul Truck Trip Lengths

	Haul	Vendor	Worker	
Trip Length	20	8.4	11.7	miles
	32187	13518	18829	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor	Worker
Haul	0.01	0.03	0.02

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days		Total Unmitigated $PM_{2.5}$ (tons)				Total Mitigated $PM_{2.5}$ (tons)			
Construction Year	Start Date	End Date	Age 2<16	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips	Onsite Offroad	Haul Truck	Vendor Trips	Worker Trips
2026	6/1/2026	12/31/2026	365.00	365	1.95E-02	6.15E-03	3.36E-05	1.20E-03	7.85E-03	6.15E-03	3.36E-05	1.20E-03
2027	1/1/2027	8/30/2027	365.00	365	3.64E-02	0.00E+00	1.21E-04	7.95E-04	1.67E-02	0.00E+00	1.21E-04	7.95E-04

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	5.60E-04	3.23E-06	2.26E-04	3.23E-06
2027	1/1/2027	8/30/2027	1.05E-03	6.43E-07	4.80E-04	6.43E-07

MAX	PM2.5	UTM X	UTM Y	Year
Unmitigated	0.00	546179.87	4161112.13	2027
Mitigated	0.00	546179.87	4161112.13	2027

Particulate Matter concentration, $C_{PM2.5}$ (ug/m^3)

			Unmitigated		Mitigated	
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027
546179.87_4161	546179.87	4161112.13	5.96E-04	1.11E-03	2.43E-04	5.08E-04
546169.75_4161	546169.75	4161091.9	5.66E-04	1.05E-03	2.31E-04	4.82E-04
546201.12_4161	546201.12	4161112.47	5.73E-04	1.06E-03	2.34E-04	4.88E-04
546188.64_4161	546188.64	4161092.23	5.49E-04	1.02E-03	2.24E-04	4.68E-04

Unmitigated

$PM_{2.5}$ Concentration	
Max	Max Year
1.11E-03	2027
1.05E-03	2027
1.06E-03	2027
1.02E-03	2027

Mitigated

$PM_{2.5}$ Concentration	
Max	Max Year
5.08E-04	2027
4.82E-04	2027
4.88E-04	2027
4.68E-04	2027

Fassler Tank Replacement
Worker Receptors - Construction Cancer Risk

Haul Truck Trip Lengths

	Haul	Vendor	
Trip Length	20	8.4	miles
	32187	13518	meters

Haul Truck Adjustment Factor to Model

Source	Haul	Vendor
Haul	0.01	0.03

Modeled Routes

	Haul	
Trip Length	436.7	meters

from AERMOD

			Days		Total Unmitigated DPM (tons)			Total Mitigated DPM (tons)		
Construction Year	Start Date	End Date	Age 16<70	Calendar Days	Onsite Offroad	Haul Truck	Vendor Trips	Onsite Offroad	Haul Truck	Vendor Trips
2026	6/1/2026	12/31/2026	214.00	214	2.06E-02	9.26E-04	5.46E-06	7.74E-03	9.26E-04	5.46E-06
2027	1/1/2027	8/30/2027	242.00	242	3.96E-02	0.00E+00	2.14E-05	1.77E-02	0.00E+00	2.14E-05

			Total Unmitigated DPM (g/s)		Total Mitigated DPM (g/s)	
Construction Year	Start Date	End Date	CSTN	HAUL	CSTN	HAUL
2026	6/1/2026	12/31/2026	1.01E-03	6.25E-07	3.80E-04	6.25E-07
2027	1/1/2027	8/30/2027	1.72E-03	3.00E-08	7.69E-04	3.00E-08

Risk Factors

	Abbreviation	UOM	Age 16<70
8HR Breathing Rate (95th %'ile)	8HR-BR	L/kg-day	230
Modeling Adjustment Factor	MAF	unitless	4.2
Exposure Frequency	EF	days/year	0.49
Age Sensitivity Factor	ASF	unitless	1
Inhalation Absorption Factor	A	unitless	1
Conversion Factor	CF_1	m^3/L	0.001
Conversion Factor	CF_2	$\mu g/m^3$	0.001
Cancer Potency Factor (diesel exha	CPF	$mg/kg\text{-}day^{-1}$	1.1
Averaging Time (for residential exp	AT	years	70.00

Intake Factor for Inhalation, IF (m^3/kg-day)

	Year	Equation	Age 16<70
Construction	2026	DBR*MAF*EF*ED*ASF*A*CF/AT	0.004
	2027		0.005

Risk Calculation Part 1, R1

Year		Age 16<70
2026	IF*CPF*CF	4.39E-06
2027		4.96E-06

	Cancer Risk	UTM X	UTM Y
Unmitigated	0.0137	546179.87	4161112.13
Mitigated	0.0058	546179.87	4161112.13

Diesel Particulate Matter concentration, C_{DPM} (ug/m^3)

			Unmitigated		Mitigated		$\sum R1*C_{DPM}$	$\sum R1*C_{DPM}$
Lookup	X (UTM)	Y (UTM	2026	2027	2026	2027	Total Unmitigated Adult	Total MitigatedAdult
546179.87_4161:	546179.87	4161112.13	1.07E-03	1.81E-03	4.02E-04	8.13E-04	0.0137	0.0058
546169.75_4161(	546169.75	4161091.9	1.01E-03	1.72E-03	3.82E-04	7.72E-04	0.0130	0.0055
546201.12_4161:	546201.12	4161112.47	1.03E-03	1.74E-03	3.86E-04	7.81E-04	0.0132	0.0056
546188.64_4161(	546188.64	4161092.23	9.84E-04	1.67E-03	3.70E-04	7.49E-04	0.0126	0.0053

Appendix B
Biological Resources Technical Information

Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (San Francisco North (3712274) OR San Francisco South (3712264) OR San Mateo (3712253) OR Montara Mountain (3712254) OR Hunters Point (3712263))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAH01020	***Dicamptodon ensatus*** California giant salamander	None	None	G2G3	S2S3	SSC
AAABH01022	***Rana draytonii*** California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01054	***Rana boylii pop. 4*** foothill yellow-legged frog - central coast DPS	Threatened	Endangered	G3T2	S2	
ABNFD01020	***Nannopterum auritum*** double-crested cormorant	None	None	G5	S4	WL
ABNKD06030	***Falco columbarius*** merlin	None	None	G5	S3S4	WL
ABNKD06071	***Falco peregrinus anatum*** American peregrine falcon	Delisted	Delisted	G4T4	S3S4	
ABNME03041	***Laterallus jamaicensis coturniculus*** California black rail	None	Threatened	G3T1	S2	FP
ABNME05011	***Rallus obsoletus obsoletus*** California Ridgway's rail	Endangered	Endangered	G3T1	S2	FP
ABNNB03031	***Charadrius nivosus nivosus*** western snowy plover	Threatened	None	G3T3	S3	SSC
ABNNN06010	***Brachyramphus marmoratus*** marbled murrelet	Threatened	Endangered	G3	S2	
ABNSB10010	***Athene cunicularia*** burrowing owl	None	Candidate Endangered	G4	S2	SSC
ABPAU08010	***Riparia riparia*** bank swallow	None	Threatened	G5	S3	
ABPBX1201A	***Geothlypis trichas sinuosa*** saltmarsh common yellowthroat	None	None	G5T3	S3	SSC
ABPBXA301S	***Melospiza melodia pusillula*** Alameda song sparrow	None	None	G5T2T3	S2	SSC
ABPBXA301W	***Melospiza melodia samuelis*** San Pablo song sparrow	None	None	G5T2	S2	SSC
AFCAA01031	***Acipenser medirostris pop. 1*** green sturgeon - southern DPS	Threatened	None	G2T1	S1	SSC
AFCHA0209G	***Oncorhynchus mykiss irideus pop. 8*** steelhead - central California coast DPS	Threatened	None	G5T3Q	S3	SSC
AFCHB03040	***Spirinchus thaleichthys pop. 2*** longfin smelt - San Francisco Bay-Delta DPS	Endangered	Threatened	G5TNRQ	S1	
AFCJB25010	***Mylopharodon conocephalus*** hardhead	None	None	G3	S3	SSC

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AFCQN04010	***Eucyclogobius newberryi*** tidewater goby	Endangered	None	G3	S3	SSC
AMABA01072	***Sorex vagrans paludivagus*** Monterey vagrant shrew	None	None	G5T1	S2	
AMABB02032	***Scapanus latimanus insularis*** Angel Island mole	None	None	G5T1	S2?	
AMACC01090	***Myotis thysanodes*** fringed myotis	None	None	G4	S3	
AMACC05032	***Lasiurus cinereus*** hoary bat	None	None	G3G4	S4	
AMACC05080	***Lasiurus frantzii*** western red bat	None	None	G4	S3	SSC
AMACC08010	***Corynorhinus townsendii*** Townsend's big-eared bat	None	None	G4	S2	SSC
AMACC10010	***Antrozous pallidus*** pallid bat	None	None	G4	S3	SSC
AMACD04020	***Nyctinomops macrotis*** big free-tailed bat	None	None	G5	S3	SSC
AMAFD03042	***Dipodomys venustus venustus*** Santa Cruz kangaroo rat	None	None	G4T1	S1	
AMAFF02040	***Reithrodontomys raviventris*** salt-marsh harvest mouse	Endangered	Endangered	G1G2	S3	FP
AMAFF08082	***Neotoma fuscipes annectens*** San Francisco dusky-footed woodrat	None	None	G5T2T3	S2S3	SSC
AMAFH01031	***Zapus trinotatus orarius*** Point Reyes jumping mouse	None	None	G5T2	S2	SSC
AMAFJ01010	***Erethizon dorsatum*** North American porcupine	None	None	G5	S3	
AMAJC03010	***Eumetopias jubatus*** Steller sea lion	Delisted	None	G3	S2	
AMAJF04010	***Taxidea taxus*** American badger	None	None	G5	S3	SSC
AMAJF09012	***Enhydra lutris nereis*** southern sea otter	Threatened	None	G4T2	S3	FP
ARAAD02031	***Actinemys marmorata*** northwestern pond turtle	Proposed Threatened	None	G2	SNR	SSC
ARADB3613B	***Thamnophis sirtalis tetrataenia*** San Francisco gartersnake	Endangered	Endangered	G5T2Q	S2	FP
CTT37C10CA	***Northern Maritime Chaparral*** Northern Maritime Chaparral	None	None	G1	S1.2	
CTT42110CA	***Valley Needlegrass Grassland*** Valley Needlegrass Grassland	None	None	G3	S3.1	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
CTT42130CA	***Serpentine Bunchgrass*** Serpentine Bunchgrass	None	None	G2	S2.2	
CTT52110CA	***Northern Coastal Salt Marsh*** Northern Coastal Salt Marsh	None	None	G3	S3.2	
ICMAL01220	***Caecidotea tomalensis*** Tomales isopod	None	None	G2	S2S3	
IICOL02101	***Cicindela hirticollis gravida*** sandy beach tiger beetle	None	None	G5T2	S2	
IICOL55040	***Hydroporus leechi*** Leech's skyline diving beetle	None	None	G3	S2S3	
IICOL5V010	***Hydrochara rickseckeri*** Ricksecker's water scavenger beetle	None	None	G2?	S2?	
IICOL67020	***Lichnanthe ursina*** bumblebee scarab beetle	None	None	G2	S2	
IIHYM22010	***Dufourea stagei*** Stage's dufourine bee	None	None	G1G2	S1	
IIHYM24252	***Bombus occidentalis*** western bumble bee	None	Candidate Endangered	G3	S1	
IIHYM24260	***Bombus pensylvanicus*** American bumble bee	None	None	G3G4	S2	
IIHYM24380	***Bombus caliginosus*** obscure bumble bee	None	None	G2G3	S1S2	
IIHYM80010	***Trachusa gummifera*** San Francisco Bay Area leaf-cutter bee	None	None	G1	S1	
IILEE0G040	***Adela oplerella*** Opler's longhorn moth	None	None	G2	S2	
IILEPE2202	***Callophrys mossii bayensis*** San Bruno elfin butterfly	Endangered	None	G4T2	S2	
IILEPG8019	***Icaricia icarioides pheres*** Pheres blue butterfly	None	None	G5TX	SX	
IILEPG801A	***Icaricia icarioides missionensis*** Mission blue butterfly	Endangered	None	G5T2	S2	
IILEPJ608C	***Speyeria zerene myrtleae*** Myrtle's silverspot butterfly	Endangered	None	G5T1	S1	
IILEPJ6091	***Speyeria callippe callippe*** callippe silverspot butterfly	Endangered	None	G5T1	S1	
IILEPK4055	***Euphydryas editha bayensis*** Bay checkerspot butterfly	Threatened	None	G4G5T1	S3	
IILEPP2012	***Danaus plexippus plexippus pop. 1*** monarch - California overwintering population	Proposed Threatened	None	G4T1T2Q	S2	
IIODO72010	***Ischnura gemina*** San Francisco forktail damselfly	None	None	G2	S2	

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
ILARA13020	***Calicina minor*** Edgewood blind harvestman	None	None	G1	S1	
ILARA14100	***Banksula incredula*** incredible harvestman	None	None	G1	S1	
IMBIV19010	***Gonidea angulata*** western ridged mussel	None	None	G3	S2	
IMGASA4140	***Vespericola marinensis*** Marin hesperian	None	None	G2	S2	
IMGASJ7040	***Tryonia imitator*** mimic tryonia (=California brackishwater snail)	None	None	G2	S2	
IMGASJ9020	***Pomatiopsis californica*** Pacific walker	None	None	G1	S1	
NBMUS7S010	***Triquetrella californica*** coastal triquetrella	None	None	G2	S2	1B.2
NLT0032640	***Hypogymnia schizidiata*** island tube lichen	None	None	G2G3	S2	1B.3
PDAPI1Z0D0	***Sanicula maritima*** adobe sanicle	None	Rare	G2	S2	1B.1
PDAST2E050	***Cirsium andrewsii*** Franciscan thistle	None	None	G3	S3	1B.2
PDAST2E161	***Cirsium fontinale var. fontinale*** fountain thistle	Endangered	Endangered	G2T1	S1	1B.1
PDAST2E1G2	***Cirsium hydrophilum var. vaseyi*** Mt. Tamalpais thistle	None	None	G2T1	S1	1B.2
PDAST2E1Z1	***Cirsium occidentale var. compactum*** compact cobwebby thistle	None	None	G3G4T2	S2	1B.2
PDAST3N060	***Eriophyllum latilobum*** San Mateo woolly sunflower	Endangered	Endangered	G1	S1	1B.1
PDAST470D3	***Grindelia hirsutula var. maritima*** San Francisco gumplant	None	None	G5T1Q	S1	3.2
PDAST4M020	***Helianthella castanea*** Diablo helianthella	None	None	G2	S2	1B.2
PDAST4R0P2	***Centromadia parryi ssp. parryi*** pappose tarplant	None	None	G3T2	S2	1B.2
PDAST4R0W1	***Hemizonia congesta ssp. congesta*** congested-headed hayfield tarplant	None	None	G5T2	S2	1B.2
PDAST5L0C5	***Lasthenia californica ssp. macrantha*** perennial goldfields	None	None	G3T2	S2	1B.2
PDAST5N010	***Layia carnosa*** beach layia	Threatened	Endangered	G2	S2	1B.1
PDAST5S010	***Lessingia germanorum*** San Francisco lessingia	Endangered	Endangered	G1	S1	1B.1

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDAST5S0C0	***Lessingia arachnoidea*** Crystal Springs lessingia	None	None	G2	S2	1B.2
PDAST6E050	***Stebbinsoseris decipiens*** Santa Cruz microseris	None	None	G2	S2	1B.2
PDAST6E0D0	***Microseris paludosa*** marsh microseris	None	None	G2	S2	1B.2
PDAST6G010	***Monolopia gracilens*** woodland woollythreads	None	None	G3	S3	1B.2
PDAST6X030	***Pentachaeta bellidiflora*** white-rayed pentachaeta	Endangered	Endangered	G1	S1	1B.1
PDAST8H060	***Senecio aphanactis*** chaparral ragwort	None	None	G3	S2	1B.2
PDASTE5011	***Hesperevax sparsiflora var. brevifolia*** short-leaved evax	None	None	G4T3	S3	1B.2
PDBOR01070	***Amsinckia lunaris*** bent-flowered fiddleneck	None	None	G3	S3	1B.2
PDBOR0V061	***Plagiobothrys chorisianus var. chorisianus*** Choris' popcornflower	None	None	G3T1Q	S1	1B.2
PDBOR0V080	***Plagiobothrys diffusus*** San Francisco popcornflower	None	Endangered	G1Q	S1	1B.1
PDBOR0V0B0	***Plagiobothrys glaber*** hairless popcornflower	None	None	GX	SX	1A
PDCAR040L0	***Arenaria paludicola*** marsh sandwort	Endangered	Endangered	G1	S1	1B.1
PDCAR0U1MC	***Silene scouleri ssp. scouleri*** Scouler's catchfly	None	None	G5T4T5	S2S3	2B.2
PDCAR0U213	***Silene verecunda ssp. verecunda*** San Francisco campion	None	None	G5T1	S1	1B.2
PDCHE0P020	***Suaeda californica*** California seablite	Endangered	None	G1	S1	1B.1
PDERI040J2	***Arctostaphylos montana ssp. ravenii*** Presidio manzanita	Endangered	Endangered	G3T1	S1	1B.1
PDERI040J3	***Arctostaphylos franciscana*** Franciscan manzanita	Endangered	None	GHC	S1	1B.1
PDERI040L0	***Arctostaphylos imbricata*** San Bruno Mountain manzanita	None	Endangered	G1	S1	1B.1
PDERI040Z0	***Arctostaphylos pacifica*** Pacific manzanita	None	Endangered	G1	S1	1B.1
PDERI041C0	***Arctostaphylos regismontana*** Kings Mountain manzanita	None	None	G2	S2	1B.2
PDERI042W0	***Arctostaphylos montaraensis*** Montara manzanita	None	None	G1	S1	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDFAB0F7B2	***Astragalus pycnostachyus var. pycnostachyus*** coastal marsh milk-vetch	None	None	G2T2	S2	1B.2
PDFAB0F8R1	***Astragalus tener var. tener*** alkali milk-vetch	None	None	G2T1	S1	1B.2
PDFAB40040	***Trifolium amoenum*** two-fork clover	Endangered	None	G1	S1	1B.1
PDFAB400R5	***Trifolium hydrophilum*** saline clover	None	None	G2	S2	1B.2
PDLAM01040	***Acanthomintha duttonii*** San Mateo thorn-mint	Endangered	Endangered	G1	S1	1B.1
PDLAM18162	***Monardella sinuata ssp. nigrescens*** northern curly-leaved monardella	None	None	G3T2	S2	1B.2
PDLIM02039	***Limnanthes douglasii ssp. ornduffii*** Ornduff's meadowfoam	None	None	G4T1	S1	1B.1
PDLIN01060	***Hesperolinon congestum*** Marin western flax	Threatened	Threatened	G1	S1	1B.1
PDMAL0Q0E0	***Malacothamnus arcuatus var. arcuatus*** arcuate bushmallow	None	None	G2Q	S2	1B.2
PDONA050H0	***Clarkia franciscana*** Presidio clarkia	Endangered	Endangered	G1	S1	1B.1
PDORO040Q0	***Aphyllon robbinsii*** Robbins' broomrape	None	None	G1	S1	1B.1
PDPGN04081	***Chorizanthe cuspidata var. cuspidata*** San Francisco Bay spineflower	None	None	G2T1	S1	1B.2
PDPGN040Q2	***Chorizanthe robusta var. robusta*** robust spineflower	Endangered	None	G2T1	S1	1B.1
PDPGN0L1C0	***Polygonum marinense*** Marin knotweed	None	None	G2Q	S2	3.1
PDPLM040B3	***Gilia capitata ssp. chamissonis*** blue coast gilia	None	None	G5T2	S2	1B.1
PDPLM04130	***Gilia millefoliata*** dark-eyed gilia	None	None	G2	S2	1B.2
PDPLM09170	***Leptosiphon croceus*** coast yellow leptosiphon	None	Endangered	G1	S1	1B.1
PDPLM09180	***Leptosiphon rosaceus*** rose leptosiphon	None	None	G1	S1	1B.1
PDPLM0E050	***Polemonium carneum*** Oregon polemonium	None	None	G3G4	S2	2B.2
PDROS0W043	***Horkelia cuneata var. sericea*** Kellogg's horkelia	None	None	G4T1?	S1?	1B.1
PDROS0W0B0	***Horkelia marinensis*** Point Reyes horkelia	None	None	G2	S2	1B.2

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDROS1B370	***Potentilla hickmanii*** Hickman's cinquefoil	Endangered	Endangered	G1	S1	1B.1
PDSCR0H060	***Collinsia corymbosa*** round-headed collinsia	None	None	G1	S1	1B.2
PDSCR0H0B0	***Collinsia multicolor*** San Francisco collinsia	None	None	G2	S2	1B.2
PDSCR0J0C3	***Chloropyron maritimum ssp. palustre*** Point Reyes salty bird's-beak	None	None	G4?T2	S2	1B.2
PDSCR2T010	***Triphysaria floribunda*** San Francisco owl's-clover	None	None	G2?	S2?	1B.2
PDTHY03010	***Dirca occidentalis*** western leatherwood	None	None	G2	S2	1B.2
PMCYP032Y0	***Carex comosa*** bristly sedge	None	None	G5	S2	2B.1
PMCYP03B20	***Carex praticola*** northern meadow sedge	None	None	G5	S2	2B.2
PMLIL021R1	***Allium peninsulare var. franciscanum*** Franciscan onion	None	None	G4G5T2	S2	1B.2
PMLIL0V0C0	***Fritillaria liliacea*** fragrant fritillary	None	None	G2	S2	1B.2
PMLIL0V0M1	***Fritillaria biflora var. ineziana*** Hillsborough chocolate lily	None	None	G3G4T1	S1	1B.1
PMPOA04060	***Agrostis blasdalei*** Blasdale's bent grass	None	None	G2G3	S2	1B.2
PMPON03010	***Heteranthera dubia*** water star-grass	None	None	G5	S2	2B.2

Record Count: 137

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: 05/08/2025 23:40:49 UTC
Project Code: 2025-0094076
Project Name: Fassler Ave Water Tank

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

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

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

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

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

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

PROJECT SUMMARY

Project Code: 2025-0094076
Project Name: Fassler Ave Water Tank
Project Type: Water Supply Facility - Withdrawal - Surface
Project Description: Construct new water tank
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@37.6008872,-122.47808044376117,14z

Counties: San Mateo County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 15 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

BIRDS

NAME	STATUS
California Least Tern *Sternula antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
California Ridgway"s Rail *Rallus obsoletus obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Western Snowy Plover *Charadrius nivosus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

REPTILES

NAME	STATUS
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111	Proposed Threatened
San Francisco Garter Snake *Thamnophis sirtalis tetrataenia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5956	Endangered

AMPHIBIANS

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location does not overlap the critical habitat.	Threatened

NAME	STATUS

Species profile: https://ecos.fws.gov/ecp/species/2891

FISHES

NAME	STATUS
Tidewater Goby *Eucyclogobius newberryi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

INSECTS

NAME	STATUS
Mission Blue Butterfly *Icaricia icarioides missionensis* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/6928	Endangered
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Hickman's Potentilla *Potentilla hickmanii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6343	Endangered
San Mateo Woolly Sunflower *Eriophyllum latilobum* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7791	Endangered
White-rayed Pentachaeta *Pentachaeta bellidiflora* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7782	Endangered

CRITICAL HABITATS

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

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

ScientificName	CommonName	Family	Lifeform	CRPR		GRank	SRank	OtherStatu
Acanthomintha duttonii	San Mateo thorn-min	Lamiaceae	annual her	1B.1		G1	S1	SB_UCBG
Agrostis blasdalei	Blasdale's bent grass	Poaceae	perennial r	1B.2		G2G3	S2	BLM_S; SB
Allium peninsulare var.	Franciscan onion	Alliaceae	perennial b	1B.2		G4G5T2	S2	SB_CalBG/
Amsinckia lunaris	bent-flowered fiddler	Boraginace	annual her	1B.2		G3	S3	BLM_S; SB
Aphyllon robbinsii	Robbins' broomrape	Orobancha	annual her	1B.1		G1	S1	
Arabis blepharophylla	coast rockcress	Brassicace	perennial h		4.3	G4	S4	SB_CalBG/
Arctostaphylos francisc	Franciscan manzanit	Ericaceae	perennial s	1B.1		GHC	S1	SB_UCBG
Arctostaphylos imbricat	San Bruno Mountain	Ericaceae	perennial s	1B.1		G1	S1	
Arctostaphylos montan	Presidio manzanita	Ericaceae	perennial s	1B.1		G3T1	S1	
Arctostaphylos montara	Montara manzanita	Ericaceae	perennial s	1B.2		G1	S1	SB_CalBG/
Arctostaphylos pacifica	Pacific manzanita	Ericaceae	evergreen s	1B.1		G1	S1	SB_UCSC
Arctostaphylos regismo	Kings Mountain manz	Ericaceae	perennial s	1B.2		G2	S2	SB_UCSC
Arenaria paludicola	marsh sandwort	Caryophyll	perennial s	1B.1		G1	S1	SB_SBBG
Aspidotis carlotta-hallia	Carlotta Hall's lace fe	Pteridacea	perennial r		4.2	G3	S3	
Astragalus nuttallii var.	ocean bluff milk-vetc	Fabaceae	perennial h		4.3	G4T4	S4	SB_UCSC
Astragalus pycnostachy	coastal marsh milk-v	Fabaceae	perennial h	1B.2		G2T2	S2	BLM_S; SB
Astragalus tener var. ter	alkali milk-vetch	Fabaceae	annual her	1B.2		G2T1	S1	SB_UCSC
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial b		4.2	G3?	S3?	SB_UCBG
Calochortus uniflorus	pink star-tulip	Liliaceae	perennial b		4.2	G4	S4	SB_SBBG
Carex comosa	bristly sedge	Cyperacea	perennial r	2B.1		G5	S2	IUCN_LC
Carex praticola	northern meadow se	Cyperacea	perennial r	2B.2		G5	S2	
Castilleja ambigua var.	johnny-nip	Orobancha	annual her		4.2	G5T4	S3S4	SB_CalBG/
Centromadia parryi ssp	pappose tarplant	Asteraceae	annual her	1B.2		G3T2	S2	BLM_S
Chloropyron maritimum	Point Reyes salty bird	Orobancha	annual her	1B.2		G4?T2	S2	BLM_S; SB
Chorizanthe cuspidata v	San Francisco Bay sp	Polygonac	annual her	1B.2		G2T1	S1	SB_CalBG/
Chorizanthe robusta va	robust spineflower	Polygonac	annual her	1B.1		G2T1	S1	
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial h	1B.2		G3	S3	SB_CalBG/
Cirsium fontinale var. fo	fountain thistle	Asteraceae	perennial h	1B.1		G2T1	S1	SB_CalBG/
Cirsium hydrophilum va	Mt. Tamalpais thistle	Asteraceae	perennial h	1B.2		G2T1	S1	SB_CalBG/
Cirsium occidentale var	compact cobwebby t	Asteraceae	perennial h	1B.2		G3G4T2	S2	BLM_S
Clarkia franciscana	Presidio clarkia	Onagracea	annual her	1B.1		G1	S1	SB_UCBG
Collinsia corymbosa	round-headed collins	Plantagina	annual her	1B.2		G1	S1	SB_CalBG/
Collinsia multicolor	San Francisco collins	Plantagina	annual her	1B.2		G2	S2	BLM_S; SB
Cypripedium fasciculat	clustered lady's-slipp	Orchidace	perennial r		4.2	G4	S4	IUCN_VU;
Dirca occidentalis	western leatherwood	Thymelaea	perennial s	1B.2		G2	S2	SB_CalBG/
Elymus californicus	California bottle-brus	Poaceae	perennial h		4.3	G4	S4	
Equisetum palustre	marsh horsetail	Equisetace	perennial r		3	G5	S1S3	
Eriophyllum latilobum	San Mateo woolly sur	Asteraceae	perennial h	1B.1		G1	S1	SB_CalBG/
Erysimum franciscanun	San Francisco wallflo	Brassicace	perennial h		4.2	G3	S3	SB_UCSC
Fritillaria biflora var. ine	Hillsborough chocola	Liliaceae	perennial b	1B.1		G3G4T1	S1	SB_CalBG/
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial b	1B.2		G2	S2	SB_CalBG/
Gilia capitata ssp. chan	blue coast gilia	Polemonia	annual her	1B.1		G5T2	S2	SB_UCBG
Gilia millefoliata	dark-eyed gilia	Polemonia	annual her	1B.2		G2	S2	BLM_S; SB
Grindelia hirsutula var.	San Francisco gumpl	Asteraceae	perennial h		3.2	G5T1Q	S1	SB_UCSC
Helianthella castanea	Diablo helianthella	Asteraceae	perennial h	1B.2		G2	S2	BLM_S; SB

Hemizonia congesta ss	congested-headed h	Asteraceae	annual her	1B.2		G5T2	S2	SB_UCBG
Hesperevax sparsiflora	short-leaved evax	Asteraceae	annual her	1B.2		G4T3	S3	BLM_S; SB
Hesperolinon congestu	Marin western flax	Linaceae	annual her	1B.1		G1	S1	SB_CalBG/
Heteranthera dubia	water star-grass	Pontederia	perennial h	2B.2		G5	S2	IUCN_LC
Horkelia cuneata var. se	Kellogg's horkelia	Rosaceae	perennial h	1B.1		G4T1?	S1?	SB_CalBG/
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial h	1B.2		G2	S2	BLM_S; SB
Hosackia gracilis	harlequin lotus	Fabaceae	perennial r		4.2	G3G4	S3	SB_CalBG/
Hypogymnia schizidiata	island tube lichen	Parmeliace	foliose lich	1B.3		G2G3	S2	
Iris longipetala	coast iris	Iridaceae	perennial r		4.2	G3	S3	SB_UCSC
Lasthenia californica ss	perennial goldfields	Asteraceae	perennial h	1B.2		G3T2	S2	BLM_S; SB
Layia carnosa	beach layia	Asteraceae	annual her	1B.1		G2	S2	SB_CalBG/
Leptosiphon ambiguus	serpentine leptosiph	Polemonia	annual her		4.2	G4	S4	SB_UCBG
Leptosiphon croceus	coast yellow leptosip	Polemonia	annual her	1B.1		G1	S1	SB_UCBG
Leptosiphon grandiflor	large-flowered leptos	Polemonia	annual her		4.2	G3G4	S3S4	
Leptosiphon latisectus	broad-lobed leptosip	Polemonia	annual her		4.3	G4	S4	
Leptosiphon rosaceus	rose leptosiphon	Polemonia	annual her	1B.1		G1	S1	SB_CalBG/
Lessingia arachnoidea	Crystal Springs lessir	Asteraceae	annual her	1B.2		G2	S2	SB_CalBG/
Lessingia germanorum	San Francisco lessin	Asteraceae	annual her	1B.1		G1	S1	
Lessingia hololeuca	woolly-headed lessin	Asteraceae	annual her		3	G2G3	S2S3	
Limnanthes douglasii s	Ornduff's meadowfoa	Limnantha	annual her	1B.1		G4T1	S1	SB_UCSC
Lupinus arboreus var. e	San Mateo tree lupin	Fabaceae	perennial e		3.2	G2Q	S2	
Malacothamnus arcuat	arcuate bushmallow	Malvaceae	perennial c	1B.2		G2Q	S2	SB_CalBG/
Micropus amphibolus	Mt. Diablo cottonwee	Asteraceae	annual her		3.2	G3G4	S3S4	SB_UCSC
Microseris paludosa	marsh microseris	Asteraceae	perennial h	1B.2		G2	S2	BLM_S; SB
Monardella sinuata ssp	northern curly-leavec	Lamiaceae	annual her	1B.2		G3T2	S2	BLM_S; SB
Monolopia gracilens	woodland woollythre	Asteraceae	annual her	1B.2		G3	S3	SB_CalBG/
Pentachaeta bellidiflora	white-rayed pentach	Asteraceae	annual her	1B.1		G1	S1	SB_UCBG
Plagiobothrys chorisian	Choris' popcornflowe	Boraginace	annual her	1B.2		G3T1Q	S1	BLM_S; SB
Plagiobothrys diffusus	San Francisco popco	Boraginace	annual her	1B.1		G1Q	S1	SB_UCSC
Plagiobothrys glaber	hairless popcornflow	Boraginace	annual her	1A		GX	SX	
Polemonium carneum	Oregon polemonium	Polemonia	perennial h	2B.2		G3G4	S2	
Polygonum marinense	Marin knotweed	Polygonac	annual her		3.1	G2Q	S2	
Potentilla hickmanii	Hickman's cinquefoil	Rosaceae	perennial h	1B.1		G1	S1	SB_UCBG
Ranunculus lobbii	Lobb's aquatic butter	Ranuncula	annual her		4.2	G4	S3	IUCN_LC
Sanicula maritima	adobe sanicle	Apiaceae	perennial h	1B.1		G2	S2	SB_SBBG;
Senecio aphanactis	chaparral ragwort	Asteraceae	annual her	1B.2		G3	S2	SB_CalBG/
Silene scouleri ssp. sco	Scouler's catchfly	Caryophyll	perennial h	2B.2		G5T4T5	S2S3	
Silene verecunda ssp. v	San Francisco campi	Caryophyll	perennial h	1B.2		G5T1	S1	SB_CalBG/
Stebbinsoseris decipier	Santa Cruz microseri	Asteraceae	annual her	1B.2		G2	S2	SB_CalBG/
Suaeda californica	California seablite	Chenopodi	perennial e	1B.1		G1	S1	SB_CalBG/
Trifolium amoenum	two-fork clover	Fabaceae	annual her	1B.1		G1	S1	SB_CalBG/
Trifolium hydrophilum	saline clover	Fabaceae	annual her	1B.2		G2	S2	
Triphysaria floribunda	San Francisco owl's-c	Orobancha	annual her	1B.2		G2?	S2?	
Triquetrella californica	coastal triquetrella	Pottiaceae	moss	1B.2		G2	S2	USFS_S