Draft Initial Study / Proposed Mitigated Negative Declaration

Lynwood Pump Station Replacement

City of Novato, California

NORTH MARIN WATER DISTRICT

wra Environmental Consultants

Prepared for:

North Marin Water District
999 Rush Creek Place
Novato, CA 94945

Attn: Tim Fuette, P.E., Senior Engineer
tfuette@nmwd.com

Prepared by:

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San Rafael, CA 94901

February 2024

WRA#320289

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List of Acronyms and Abbreviations

AB	Assembly Bill
BAAQMD	Bay Area Air Quality Management District
BMPs	best management practices
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
Cal/OSHA	California Division of Occupational Safety and Health
CAP	Clean Air Plan
CARB	California Air Resources Board
CBC	California Building Code
CCAP	Climate Change Action Plan
CDC	California Department of Conservation

CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CE&G	Cal Engineering & Geology, Inc.
CFGC	California Fish and Game Code
CGS	California Geological Survey
City	City of Novato
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
Corps	United States Army Corps of Engineers
County	Marin County
CO_2	carbon dioxide
CO_2e	CO_2 equivalent
CPUC	California Public Utilities Commission
C&D	construction and demolition
dB	decibel
dBA	A-weighted sound level
District	North Marin Water District
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHSZ	Fire Hazard Severity Zone
F&L	Freyer & Laureta, Inc.
FTA	Federal Transit Administration
GHG	greenhouse gas
HI	Hazard Index
HRA	Health Risk Assessment
HVAC	heating, ventilation, and air conditioning
Hz	Frequency
IS/MND	Initial Study / Mitigated Negative Declaration
lb	pound
L_{dn}	day-night average noise level
L_{eq}	energy-equivalent noise level
L_{max}	maximum noise level
LT	Long-term
MBTA	Migratory Bird Treaty Act
MCE	Marin Clean Energy
MEIR	maximally exposed individual resident
MEIS	maximally exposed individual student
MMTCO2e	million metric tons of carbon dioxide equivalent
MT	metric tons
NAAQS	National Ambient Air Quality Standard
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan

NMFS	National Marine Fisheries Service
NOx	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resource Conservation Service
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
Origer	Tom Origer & Associates
O_3	ozone
PG&E	Pacific Gas and Electric Company
PM	particulate matter
PM2.5	fine particulate matter
PM10	respirable particulate matter
POTW	publicly owned treatment works
PPV	Peak Particle Velocity
PS	pump station/s
Rank	California Rare Plant Rank
RCRA	Resource Conservation and Recovery Act
RMS	Root Mean Square
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCWA	Sonoma County Water Agency
SF	square feet
SFBAAB	San Francisco Bay Area Air Basin
SOx	sulfur oxide
SRA	State Responsibility Area
ST	Short-term
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCE	trichloroethylene
TPH	total petroleum hydrocarbons
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UWMP	Urban Water Management Plan
VOC	volatile organic compound
VdB	Vibration Decibel
WRA	WRA, Inc.
WSCP	Water Shortage Contingency Plan
WUI	Wildland Urban Interface

1.0 INTRODUCTION AND PURPOSE

This Initial Study / Mitigated Negative Declaration (IS/MND) of environmental impacts is being prepared to conform to the requirements of the California Environmental Quality Act (CEQA), the CEQA Guidelines (California Code of Regulations 15000 et. seq.), and the regulations and policies of the North Marin Water District (District). This IS/MND evaluates the potential environmental impacts which might reasonably be anticipated to result from implementation of the Lynwood Pump Station Replacement ("proposed project" or "project").

The District is the Lead Agency under CEQA and has prepared this IS/MND to address the impacts of implementing the proposed project. The purpose of the project is to replace the existing Lynwood pump station (PS) with either one or two new PS at a different location to continue to provide reliable potable water service to the District's existing customers and to meet demands associated with future growth within the service area.

2.0 PROJECT INFORMATION

2.1 Project Title

Lynwood Pump Station Replacement Project

2.2 Lead Agency Name and Address

North Marin Water District
999 Rush Creek Place
Novato, CA 94945

2.3 Contact Person and Phone Number

Tim Fuette, P.E., Senior Engineer
North Marin Water District
tfuette@nmwd.com
(415) 897-4133

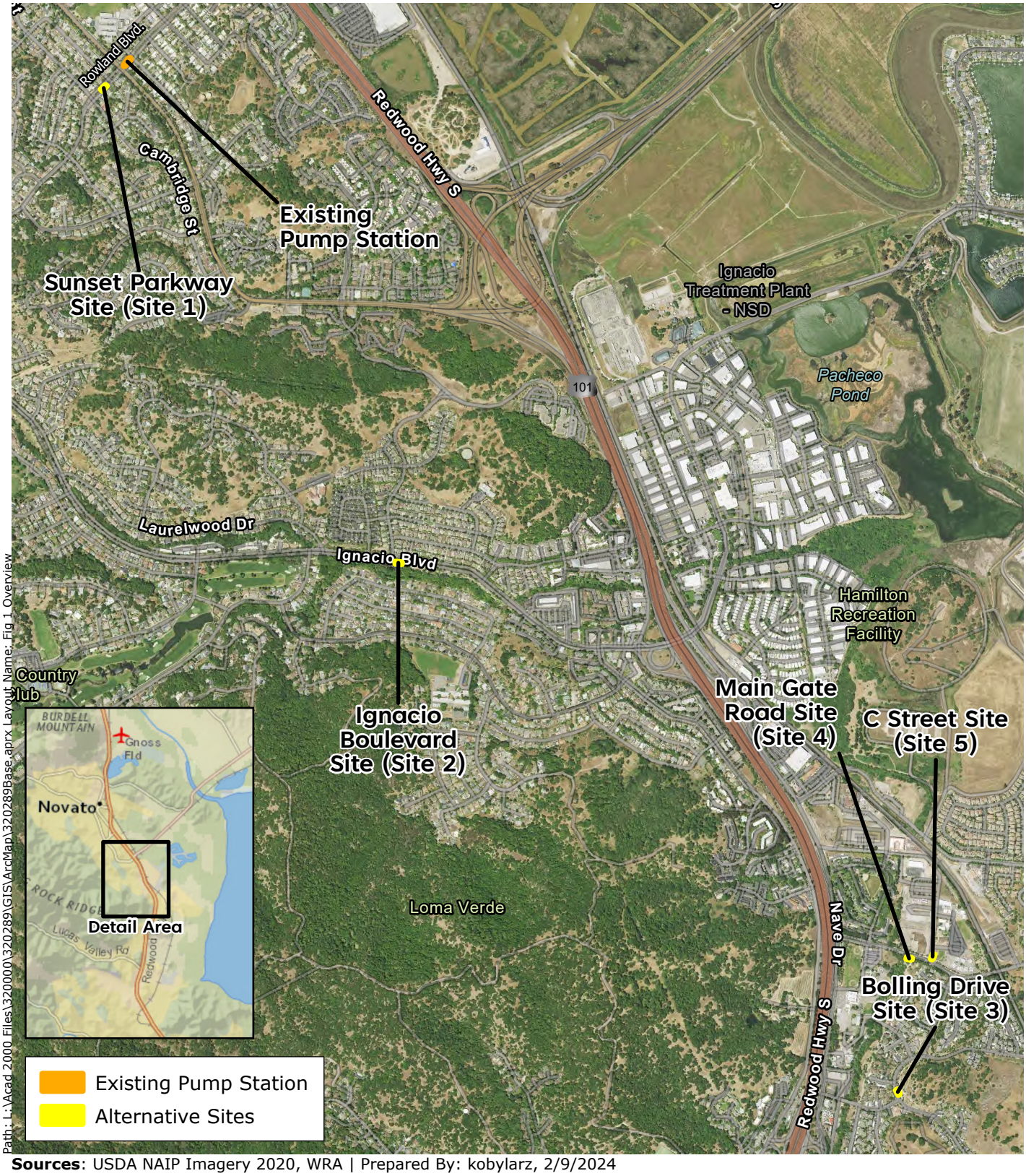
2.4 Project Location

The analysis provided in this IS/MND considers five potential alternatives for a proposed new PS or multiple PS to replace the existing Lynwood PS. To develop each of the five alternatives, a total of five potential sites on which a new pump station would be located, all of which are within the City of Novato (City) (Figure 1). Each potential alternative would be an alternative to replace the existing Lynwood PS and are all analyzed in the IS/MND at the same level of detail. These sites are located as follows:

- Sunset Parkway Site (Site 1): Within the Sunset Parkway median between Monte Maria Avenue and Cambridge Street.
- Ignacio Boulevard Site (Site 2): Within an open space area south of the intersection of Ignacio Boulevard and Palmer Drive.

- Bolling Drive Site (Site 3): Within an open space area northeast of the intersection of Bolling Drive and Bolling Circle. A pump station built at the Bolling Drive site requires construction of a parallel pump station at the Ignacio Boulevard Site (Site 2).
- Main Gate Road Site (Site 4): Within a public property situated along the south side of Main Gate Road between its intersection with Nave Drive and C Street. The site is situated in an open space area adjacent to the northeastern corner of a parking lot covered with solar canopies. A pump station built at the Main Gate Road Site (Site 4) requires construction of a parallel pump station at the Ignacio Boulevard Site (Site 2).
- C Street Site (Site 5): Within a baseball field situated adjacent northeast of the intersection of C Street and Main Gate Road. A pump station built at the C Street (Site 5) requires construction of a parallel pump station at the Ignacio Boulevard Site (Site 2).

Further discussion about which sites are included in each of the five alternatives is further discussed in Section 3.0 Project Description. The analysis provided herein will also evaluate the potential impacts of demolishing the existing Lynwood PS, which is located on Sunset Parkway between Lynwood Drive and South Novato Boulevard (Existing PS Site).



Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 2/9/2024

Figure 1. Project Regional Location Map

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 0.25 0.5 Miles

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Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 2/9/2024

Figure 2. Aerial Photograph of the Project Site and Staging Areas: Sunset Parkway Site (Site 1)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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wra Environmental Consultants

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Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 2/9/2024

Figure 3. Aerial Photograph of the Project Site and Staging Areas: Ignacio Boulevard Site (Site 2)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

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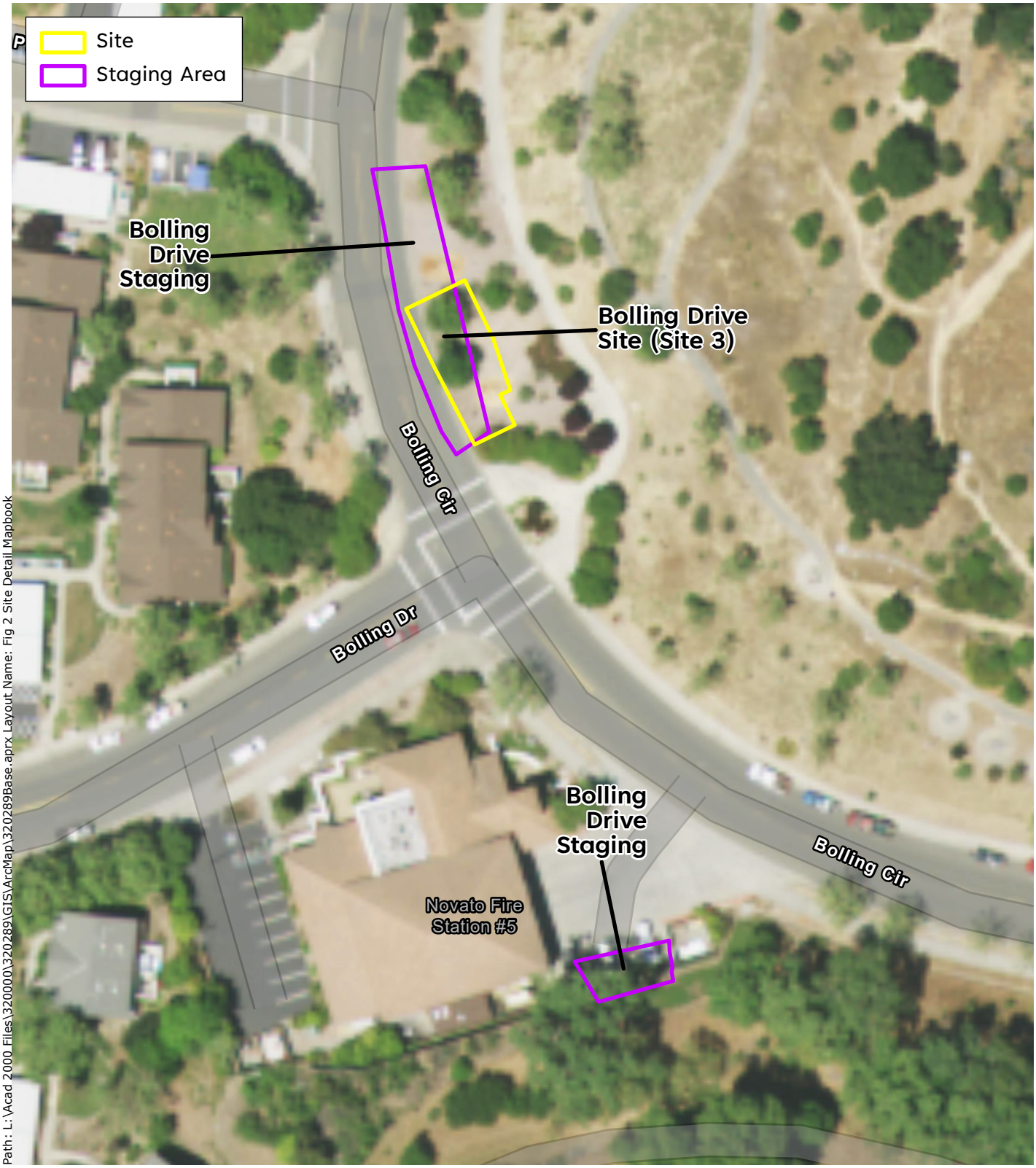

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 2/9/2024

Figure 4. Aerial Photograph of the Project Site and Staging Areas: Bolling Drive Site (Site 3)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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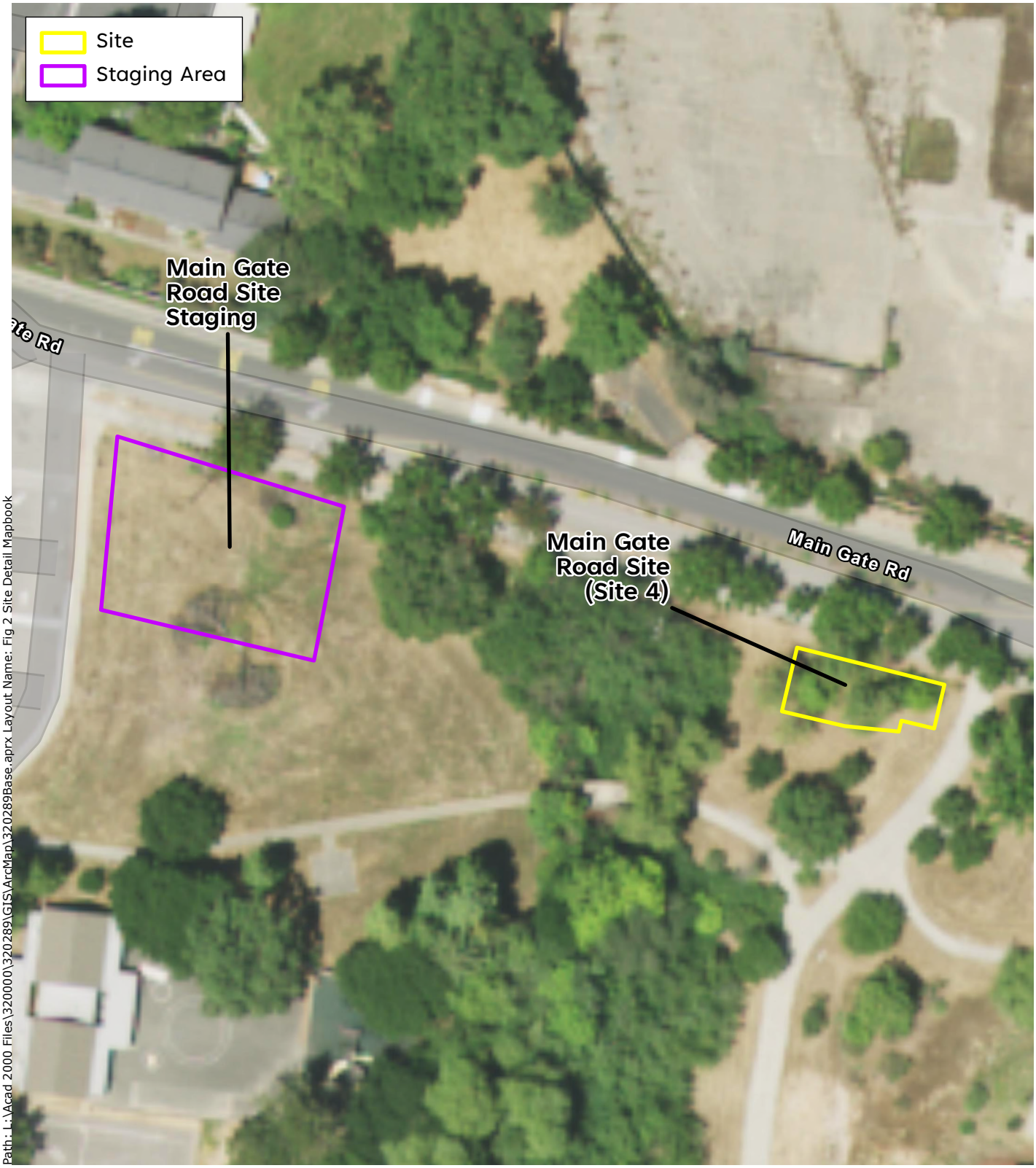

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Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 2/9/2024

Figure 5. Aerial Photograph of the Project Site and Staging Areas: Main Gate Road Site (Site 4)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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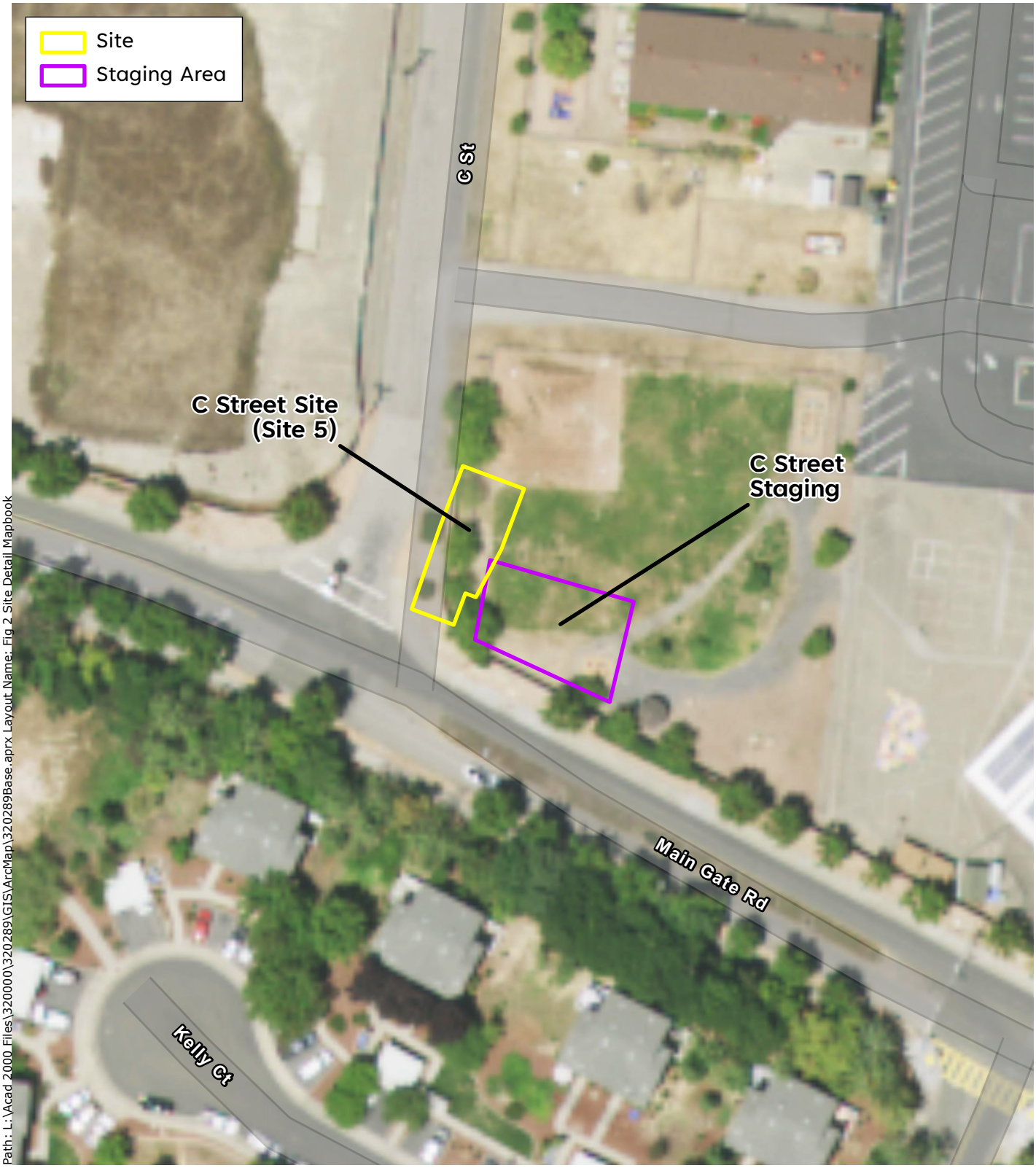

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Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 2/9/2024

Figure 6. Aerial Photograph of the Project Site and Staging Areas: C Street Site (Site 5)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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Photo of the Existing PS Site.

Photo of the Existing PS Site.

Photo of the Sunset Parkway Site (Site 1).

Photo of the Sunset Parkway Site (Site 1).

Figure 7. Photographs of Existing Conditions

Lynwood Pump Station Replacement

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Photo of the Ignacio Boulevard Site (Site 2).

Photo of the Ignacio Boulevard Site (Site 2).

Photo of the Bolling Drive Site (Site 3).

Photo of the Bolling Drive Site (Site 3).

Figure 8. Photographs of Existing Conditions

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Photo of the Main Gate Road Site (Site 4).

Photo of the Main Gate Road Site (Site 4).

Photo of the C Street Site (Site 5).

Photo of the C Street Site (Site 5).

Figure 9. Photographs of Existing Conditions

Lynwood Pump Station Replacement

City of Novato, California

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2.5 General Plan Designation and Zoning District

The General Plan land use designation and zoning district for each project site are provided below in Table 1.

Table 1. Existing General Plan Designation and Zoning District for Each Project Site

SITE	GENERAL PLAN DESIGNATION	ZONING DISTRICT
Sunset Parkway Site (Site 1)	Low Density Residential	R1-7.5 (Low Density Residential)
Ignacio Boulevard Site (Site 2)	Open Space	PD (Planned District)
Bolling Drive Site (Site 3)	Medium Density Residential	PD (Planned District)
Main Gate Road Site (Site 4)	Community Facilities, Public Utilities and Civic Uses	CF (Community Facilities)
C Street Site (Site 5)	Community Facilities, Public Utilities and Civic Uses	PD (Planned District)
Existing PS Site	Low Density Residential	R1-7.5 (Low Density Residential)

Source: (City of Novato "Map GP-1 Land Use") (City of Novato 2001)

2.6 Surrounding Land Uses and Setting

Surrounding land uses of each project site are provided below in Table 2.

Table 2. Project Site Surrounding Land Uses

SITE	SURROUNDING LAND USES
Sunset Parkway Site (Site 1)	Low Density Residential, Community Facilities, Medium Density Multifamily Residential, High Density Multifamily Residential
Ignacio Boulevard Site (Site 2)	Low Density Residential, Medium Density Residential, Open Space
Bolling Drive Site (Site 3)	Open Space, Medium Density Residential
Main Gate Road Site (Site 4)	Community Facilities, Public Utilities and Civic Uses, Medium Density Residential, Open Space, Neighborhood Commercial
C Street Site (Site 5)	Community Facilities, Public Utilities and Civic Uses, Medium Density Residential
Existing PS Site	Low Density Residential, Community Facilities, High Density Multifamily Residential

3.0 PROJECT DESCRIPTION

3.1 Background Information and Project Purpose

The District primarily serves the City and surrounding unincorporated areas of Marin County (County), encompassing a service area of approximately 75 square miles. The existing PS is part of the Novato Service Area. The District's potable water supply for the Novato Service Area is divided into four main pressure zones. The existing Lynwood PS serves Primary Zone 2, along with the San Marin PS. Although these two PS meet current demands within Primary Zone 2, they are potentially not equipped to handle future growth within the zone (Freyer & Laureta 2023).

To inform future decision making, the District contracted with Freyer & Laureta, Inc. (F&L) to prepare an Engineering Assessment for the Lynwood PS.[1] The purpose of the assessment was to evaluate the condition of the existing PS, review projected future demands that may require the existing PS capacity to be increased, determine replacement options, and determine alternative site locations for a single new PS or multiple new PS. The existing conditions assessment evaluated the condition of the Lynwood PS based on access opportunities, location and environment, and mechanical and electrical components. F&L found that the Lynwood PS was in poor condition overall, and that multiple upgrades would be required to ensure that the PS is up to date with the latest code, to extend the service life, and to improve the overall reliability of the facility. These upgrades would be required even without considering potential expansion to meet future demands (F&L 2023).

The Engineering Assessment explained the potential advantages of rehabilitating the existing PS but determined that modifying or enhancing the PS is not feasible because of the overall age, condition, and significant site constraints that could result in significant and costly constructability challenges. Since the PS is below grade, the District's ability to perform repairs and upgrades is limited. District staff identified that it would be beneficial for the Lynwood PS to be reconstructed above grade to not only improve access but also to reduce the risk from groundwater and stormwater intrusion (F&L 2023). Therefore, F&L recommended that the District move forward in considering construction of a new PS at a different location, which would be built to current code and best practices for mechanical equipment layout for operational access, which would result in a new facility with a 50-year design life, at a minimum.[2]

3.2 Detailed Description of the Project

As recommended by the Engineering Assessment prepared by F&L, the District has decided to move forward with the replacement of the Lynwood PS at a different location. Five potential alternative solutions for replacing the existing Lynwood PS were identified in the Engineering Assessment. As described in Section 2.4, Project Location, there are five potential sites being considered for construction of a new PS. Each alternative would involve either a new PS at one of the sites or two new PS at a combination of the sites. The District has not yet selected which alternative solution will be implemented and would like to use the information in this IS/MND to help inform its decision. Therefore, this IS/MND considers the environmental impacts of each proposed alternative for the replacement of the existing Lynwood PS at the same level of detail.

[1] The Engineering Assessment (F&L 2023) is available for review at the North Marin Water District located at 999 Rush Creek Place in Novato, California.

[2] The District's depreciation policy sets a 50-year useful life for new PS (North Marin Water District 2023a).

To provide a conservative analysis of the potential impacts of the proposed project, this IS/MND analyzes impacts expected from the "worst-case scenario," and therefore assumes demolition of the existing PS will be included as part of the project.

A detailed description of each alternative is provided in the sections following. Each new PS would include a pump station building and parking, as well as minimal ornamental and low-water use landscaping such as ground level shrubs and few trees. The analysis also considers that an emergency generator may be installed at each site, but the District may choose not to install an emergency generator as part of the final design effort that will be completed after the IS/MND. The footprint for pipe improvements assumes a ten-foot-wide T trench.

3.2.1 Alternative A

Alternative A would include one new PS with four pumps located at the Sunset Parkway Site (Site 1). This PS would include one additional pump to meet future demands. The Sunset Parkway Site is located approximately 330 feet southwest of the Existing PS Site. This alternative was chosen because the existing PS location provides the ability to meet demands to the north and south of the existing facility location, which is especially critical during peak demand periods (F&L 2023). The proposed PS footprint is approximately 2,000 square feet (SF) and proposed pipe improvements footprint is approximately 9,000 SF (Appendix A – Sheets C3 and M1).

3.2.2 Alternative B

Alternative B would include one new PS with four pumps located at the Ignacio Boulevard Site (Site 2). The Ignacio Boulevard Site is located approximately 1.3 miles south of the Existing PS Site. This alternative was chosen because, by relocating the PS away from the existing PS, the new PS could continue to provide adequate ability to meet future peak demands throughout Primary Zone 2 and would also improve the District's ability to deliver water to the Pacheco Valley Tank (F&L 2023). The proposed PS footprint is approximately 2,000 SF and proposed pipe improvements footprint is approximately 37,500 SF (Appendix A – Sheets C4 and M2)

3.2.3 Alternative C

Alternative C would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) and one at the Bolling Drive Site (Site 3). The new PS at the Ignacio Boulevard Site would include three pumps and the new PS at Bolling Drive Site would include two pumps. This alternative was developed to include both replacement of the Lynwood PS near the Existing PS Site and to add a third PS at a location within or in the vicinity of the southern portion of Primary Zone 2 that would improve the District's ability to fill the Pacheco Valley Tank (F&L 2023) while also meeting future demands. The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF (Appendix A – Sheets C4 and M3). The proposed PS footprint at the Bolling Drive Site is approximately 1,600 SF and proposed pipe improvements footprint is approximately 31,000 SF (Appendix A – Sheets C5 and M5).

3.2.4 Alternative D

Alternative D would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the Main Gate Road Site (Site 4) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the Main Gate Road Site (Site 4) is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed

PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF (Appendix A – Sheets C4 and M3). The proposed PS footprint at the Main Gate Road Site is approximately 1,600 SF and the proposed pipe improvements footprint is approximately 4,700 SF (Appendix A – Sheets C6 and M4).

3.2.5 Alternative E

Alternative E would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the C Street Site (Site 5) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the C Street Site is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF (Appendix A – Sheets C4 and M3). The proposed PS footprint at the C Street Site is approximately 1,600 SF and the proposed pipe improvements footprint is approximately 1,200 SF (Appendix A – Sheets C7 and M5).

3.3 Project Construction

Conceptual plans for project design can be found in Appendix A and Building Dimension Exhibits for Alternatives A through E are provided in Appendix B. The following equipment would be required for project construction:

- Excavators - Both
- Rollers - Pipe
- Asphalt paving machine - Pipe
- Concrete mixer truck - Both
- Concrete pump - PS
- Forklifts – PS Pipe
- Dump trucks - Both
- Suction hoses - Pipe
- Discharge hose - Pipe
- Pump for dewatering purposes - Pipe
- Geosynthetic fabric - Both
- Plate compactors - Pipe
- Track loaders - Both
- Hydraulic vertical shoring system - Pipe
- Concrete vibrators - Both
- Water truck - Both
- Asphalt paver - Pipe
- Cement mixer - PS
- Air compressor - Both
- Portable generators - Both
- Tamping rammers – Pipe
- Utility Trucks

Construction equipment would be stored in designated staging areas, which are shown in Figures 2 through 6. The staging area on Sunset Parkway would be used for any project work at the Sunset Parkway Site or the Existing PS Site. Separate staging areas are identified for the four other sites on Ignacio Boulevard, Bolling Drive, Main Gate Road Site, and C Street Site.

Estimated import and export volumes for each alternative are provided below in Table 3.

Table 3. Project Import and Export Volumes

ALTERNATIVE	IMPORT VOLUME (CUBIC YARDS)	EXPORT VOLUME (CUBIC YARDS)
Alternative A	700	1,500
Alternative B	2,800	4,000
Alternative C	5,100	7,100
Alternative D	3,200	4,600
Alternative E	2,900	4,300

3.3.1 Construction Schedule

ALTERNATIVE A

Construction for Alternative A is anticipated to begin in 2025 and would last for an approximate duration of 17 months. Approximately 2,238 worker commute trips and 37 vendor trips would be required over the entire construction duration. A total of 106 demolition haul trips and 112 import haul trips for soil, aggregate, and concrete would be required.[3]

ALTERNATIVE B

Construction for Alternative B is anticipated to begin in 2025 and would last for an approximate duration of 17 months. Approximately 2,652 worker commute trips and 54 vendor trips would be required over the entire construction duration. A total of 309 demolition haul trips and 283 import haul trips for soil, aggregate, and concrete would be required.

ALTERNATIVE C

Construction for Alternative C is anticipated to begin in 2025 and would last for an approximate duration of 25 months.[4] 3,968 worker commute trips and 97 vendor trips would be required over the entire construction duration. A total of 535 demolition haul trips and 504 import haul trips for soil, aggregate, and concrete would be required.

ALTERNATIVE D

Construction for Alternative D is anticipated to begin in 2025 and would last for an approximate duration of 25 months. Approximately 3,712 worker commute trips and 80 vendor trips would be required over the entire construction duration. A total of 353 demolition haul trips and 342 import haul trips for soil, aggregate, and concrete would be required.

ALTERNATIVE E

Construction for Alternative E is anticipated to begin in 2025 and would last for an approximate duration of 25 months. Approximately 3,688 worker commute trips and 80 vendor trips would be

[3] Construction duration, worker and vendor trips, and demolition and import haul trips data was provided by Freyer & Laureta, Inc.

[4] Under Alternatives C, D, and E, the second PS may be constructed at a later time, not within the same construction period as the first new PS.

required over the entire construction duration. A total of 328 demolition haul trips and 318 import haul trips for soil, aggregate, and concrete would be required.

3.4 Project-Related Approvals, Agreements, and Permits

The information contained in this IS/MND will be used by the District (the CEQA Lead Agency) as it considers whether or not to approve one of the project alternatives. If the project is approved, the IS/MND would be used by the District and responsible and trustee agencies in conjunction with various approvals and permits. These actions include, but may not be limited to, the following approvals by the agencies indicated:

3.4.1 City of Novato[5]

- Encroachment Permit

3.4.2 State Water Resources Control Board

- Stormwater Pollution Prevention Plan

3.4.3 Bay Area Air Quality Management District (only if emergency generator is installed)

- Authority To Construct
- Permit To Operate

[5] The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit.

4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by the project alternatives, involving at least one impact that is potentially significant unless mitigation is incorporated, as indicated by the checklist on the following pages.

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

4.1 Determination

On the basis of this initial evaluation:

☐ 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 (EIR) 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 proposed project, nothing further is required.

_____ February 15, 2024

Signature **Date**

Name and Title: Eric Miller, Chief Engineer/Assistant General Manager

4.2 Initial Study Checklist

This section describes the existing environmental conditions in and near the project sites and evaluates environmental impacts associated with each project alternative. The environmental checklist, as recommended in the CEQA Guidelines (Appendix G), was used to identify environmental impacts that could occur if the proposed project is implemented. The right-hand column in the checklist lists the source(s) for the answer to each question. The cited sources are identified at the end of this section.

Each of the environmental categories was fully evaluated for each project alternative, and one of the following four determinations was made for each checklist question:

> **"No Impact"** means that no impact to the resource would occur as a result of implementing the project.
>
> **"Less than Significant Impact"** means that implementation of the project would not result in a substantial and/or adverse change to the resource, and no mitigation measures are required.
>
> **"Less than Significant with Mitigation Incorporated"** means that the incorporation of one or more mitigation measures is necessary to reduce the impact from potentially significant to less than significant.
>
> **"Potentially Significant Impact"** means that there is either substantial evidence that a project-related effect may be significant, or, due to a lack of existing information, could have the potential to be significant.

In instances where project alternatives would result in different significance determinations for the same Initial Study Checklist question, the respective Checklist table will reflect the most substantial impact. However, the significance determination for each alternative is clearly identified in the discussion of impacts under each Checklist question.

4.2.1 Aesthetics

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

ENVIRONMENTAL SETTING

Sunset Parkway Site (Site 1)

The Sunset Parkway Site is situated in a median of Sunset Parkway in between Monte Maria Avenue and Cambridge Street. The median is currently developed with ornamental landscaping. Surrounding areas are developed as low-density residential neighborhoods and community facilities.

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site is situated within an open space area along the south side of the intersection of Ignacio Boulevard and Palmer Drive. The site is currently developed with ornamental landscaping. Surrounding areas include open space to the east and west, low-density and medium-density residential to the north, and low-density residential to the south.

Bolling Drive Site (Site 3)

The Bolling Drive Site is situated within an open space area on the eastern side of the intersection of Bolling Drive and Bolling Court. The site is currently developed with a paved walking path and ornamental landscaping. Surrounding areas include open space to the north and east, medium density residential to the west, and community facilities to the south.

Main Gate Road Site (Site 4)

The Main Gate Road Site is situated within a public property situated along the south side of

Main Gate Road between its intersection with Nave Drive and C Street. The site is situated in an open space area developed with ornamental landscaping. Surrounding areas include a vacant lot across Main Gate Road to the north, open space and medium density residential areas to the east, open space areas and the Hamilton School to the south, and the Hamilton School parking lot to the west.

C Street Site (Site 5)

The C Street Site is within a baseball field situated adjacent northeast of the intersection of C Street and Main Gate Road. Surrounding areas include a children's center to the north, a charter school to the east, medium density residential areas across Main Gate Road to the south, and a vacant lot to the west.

Existing PS Site

The Existing PS Site is situated in a median of Sunset Parkway in between South Novato Boulevard and Lynwood Drive. The site is currently developed with the Lynwood PS and minimal ornamental landscaping. Surrounding areas are developed as low-density residential neighborhoods and community facilities.

DISCUSSION OF IMPACTS

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

Alternative A – Less than Significant Impact

The Sunset Parkway Site and Existing PS Site are situated in medians of Sunset Parkway surrounded by residential areas. Neither project site would be visible from a scenic vista. The Existing PS Site and Sunset Parkway Site are visible from public roads and sidewalks, and therefore, construction activities would alter existing public views of the site. This impact would be temporary and would not be substantial. The proposed new piping would be located underground, and the new PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

Alternative B – Less than Significant Impact

The Existing PS Site is situated in a median of Sunset Parkway and is surrounded by residential areas. The site is not visible from any scenic vistas. The Ignacio Boulevard Site is within a landscaped open space area near Ignacio Creek. The Ignacio Boulevard Site is visible from a nearby walking path along Ignacio Creek, and therefore, construction of the project would temporarily impact public views of the site. This impact would be temporary and would not be substantial. The proposed new piping would be located underground, and the PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Existing PS Site is situated in a median of Sunset Parkway and is surrounded by residential areas. The site is not visible from any scenic vistas. The Ignacio Boulevard Site is within a landscaped open space area near Ignacio Creek. The Ignacio Boulevard Site is visible from a nearby walking path along Ignacio Creek, and therefore, construction of the project would temporarily impact public views of the site. This impact would be temporary and would not be

substantial. The Bolling Drive Site is within a landscaped open space area and is surrounded by open space areas developed with walking paths. Construction at the Bolling Drive Site would temporarily impact public views to the east of the site; however, this impact would be temporary and would not be substantial. The proposed new piping would be located underground, and the PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Existing PS Site is situated in a median of Sunset Parkway and is surrounded by residential areas. The site is not visible from any scenic vistas. The Ignacio Boulevard Site is within a landscaped open space area near Ignacio Creek. The Ignacio Boulevard Site is visible from a nearby walking path along Ignacio Creek, and therefore, construction of the project would temporarily impact public views of the site. This impact would be temporary and would not be substantial. The Main Gate Road Site is within an open space area and is surrounded by open space areas developed with walking paths. Construction at the Main Gate Road Site would temporarily impact public views from areas east, south, and west of the site; however, this impact would be temporary and would not be substantial. The proposed new piping would be located underground, and the PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not have a substantial adverse effect on a scenic vista. The impact would be less than significant.

Alternative E – Less than Significant Impact

The Existing PS Site is situated in a median of Sunset Parkway and is surrounded by residential areas. The site is not visible from any scenic vistas. The Ignacio Boulevard Site is within a landscaped open space area near Ignacio Creek. The Ignacio Boulevard Site is visible from a nearby walking path along Ignacio Creek, and therefore, construction of the project would temporarily impact public views of the site. This impact would be temporary and would not be substantial. The C Street Site is within a baseball field and is not visible from any scenic vistas. The proposed new piping would be located underground, and the PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not have a substantial adverse effect on a scenic vista. The 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?

Alternatives A through E - No Impact

There are no officially designated State Scenic Highways in the City (Caltrans 2018). The nearest eligible State Scenic Highway is a portion of U.S. Route 101 that extends from near Slade Park in the north to near Hana Ranch Road to the south (Caltrans 2018). California State Route (SR) 37, which enters the City in the northeast and ends at its intersection with U.S. 101, is also eligible to be an officially designated State Scenic Highway (Caltrans 2018). None of the project sites are visible from these routes due to local development and topography, and therefore project work would not damage any scenic resources within a State Scenic Highway corridor. No impact would occur.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? If the project is in an urbanized area,

would the project conflict with applicable zoning and other regulations governing scenic quality?

Alternative A - Less than Significant Impact

The Sunset Parkway Site and Existing PS Site are both situated in urbanized areas and are within the R1-7.5 (Low Density Residential) zoning district. The sites are both within landscaped roadway medians. The project would not conflict with allowable uses of the R1-7.5 zoning district or with any other regulations governing scenic quality. The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. The proposed new piping would be located underground, and the PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The impact would be less than significant.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site is within a landscaped open space area within the PD (Planned District) zoning district. The Existing PS Site is within a roadway median within the R1-7.5 (Low Density Residential) zoning district. Demolition of the Lynwood PS would not conflict with allowable uses of the R1-7.5 zoning district or with any other regulations governing scenic quality. The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Construction of a new PS at the Ignacio Boulevard Site would not conflict with allowable uses of the PD zoning district or with any other regulation governing scenic quality. The proposed new piping would be located underground, and the PS building would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Ignacio Boulevard Site and Bolling Drive Site are within landscaped open space areas within the PD (Planned District) zoning district. The Existing PS Site is within a roadway median within the R1-7.5 (Low Density Residential) zoning district. Demolition of the Lynwood PS would not conflict with allowable uses of the R1-7.5 zoning district or with any other regulations governing scenic quality. Construction of a new PS at the Ignacio Boulevard Site or Bolling Drive Site would not conflict with allowable uses of the PD zoning district or with any other regulation governing scenic quality. The proposed new piping would be located underground, and the PS buildings would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Ignacio Boulevard Site is within landscaped open space areas within the PD (Planned District) zoning district. The Main Gate Road Site is within an open space area within the CF (Community Facilities) zoning district. The Existing PS Site is within a roadway median within the R1-7.5 (Low Density Residential) zoning district. Demolition of the Lynwood PS would not conflict with allowable uses of the R1-7.5 zoning district or with any other regulations governing scenic quality. The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Construction of a new PS at the Ignacio Boulevard Site or Main Gate

Road Site would not conflict with allowable uses of the PD or CF zoning district or with any other regulation governing scenic quality. The proposed new piping would be located underground, and the PS buildings would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The impact would be less than significant.

Alternative E – Less than Significant Impact

The Ignacio Boulevard Site is within landscaped open space areas within the PD (Planned District) zoning district. The C Street Site is within a baseball field owned by the Novato Charter School within the PD zoning district. The Existing PS Site is within a roadway median within the R1-7.5 (Low Density Residential) zoning district. The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Demolition of the Lynwood PS would not conflict with allowable uses of the R1-7.5 zoning district or with any other regulations governing scenic quality. Construction of a new PS at the Ignacio Boulevard Site or C Street Site would not conflict with allowable uses of the PD zoning district or with any other regulation governing scenic quality. The proposed new piping would be located underground, and the PS buildings would be screened by landscaping and designed in a style that would fit into the surrounding environment. As such, the project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. The impact would be less than significant.

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

Alternative A – Less than Significant Impact

The proposed project would not create a new substantial source of light or glare which would affect day or nighttime views in the project site area. During construction, all work would take place during daytime hours. The only new source of nighttime lighting would be limited light at the entrance to the new PS building at the Sunset Parkway Site. The new PS building would not create a substantial new source of glare as its appearance would be softened by painting and landscaping. The impact would be less than significant.

Alternative B – Less than Significant Impact

The proposed project would not create a new substantial source of light or glare which would affect day or nighttime views in the project site area. During construction, all work would take place during daytime hours. The only new source of nighttime lighting would be limited light at the entrance to the new PS building at the Ignacio Boulevard Site. The new PS building would not create a substantial new source of glare as its appearance would be softened by painting and minimal ornamental landscaping. The impact would be less than significant.

Alternative C – Less than Significant Impact

The proposed project would not create a new substantial source of light or glare which would affect day or nighttime views in the project site area. During construction, all work would take place during daytime hours. The only new source of nighttime lighting would be limited light at the entrance to the new PS building at the Ignacio Boulevard Site and at the Bolling Drive Site. The new PS building would not create a substantial new source of glare as its appearance would be softened by painting and minimal ornamental landscaping. The impact would be less than significant.

Alternative D – Less than Significant Impact

The proposed project would not create a new substantial source of light or glare which would affect day or nighttime views in the project site area. During construction, all work would take place during daytime hours. The only new source of nighttime lighting would be limited light at the entrance to the new PS building at the Ignacio Boulevard Site and at the Main Gate Road Site. The new PS building would not create a substantial new source of glare as its appearance would be softened by painting and minimal ornamental landscaping. The impact would be less than significant.

Alternative E – Less than Significant Impact

The proposed project would not create a new substantial source of light or glare which would affect day or nighttime views in the project site area. During construction, all work would take place during daytime hours. The only new source of nighttime lighting would be limited light at the entrance to the new PS building at the Ignacio Boulevard Site and at the C Street Site. The new PS building would not create a substantial new source of glare as its appearance would be softened by painting and minimal ornamental landscaping. The impact would be less than significant.

CONCLUSION

Under Alternatives A through E, impacts related to aesthetics would be less than significant. The Sunset Parkway Site is located in the most developed area, and therefore Alternative A would have the least substantial impact on aesthetics. The Ignacio Boulevard Site, Bolling Drive Site, and Main Gate Road Site are in open space areas, and therefore Alternatives C and D would have the most substantial impact related to degradation of public views of the site because new PS would be developed at either the Ignacio Boulevard Site and Bolling Drive Site, or at the Ignacio Boulevard Site and Main Gate Road Site, respectively, under these Alternatives. However, the new PS buildings would be designed to blend into the surrounding environment and would be screened by minimal ornamental landscaping, and therefore, the impact would remain less than significant.

4.2.2 Agricultural and Forestry Resources

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code 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

All five project sites and surrounding areas have been mapped as Urban and Built-Up Land in the Farmland Mapping and Monitoring Program compiled by the California Department of Conservation (DOC) (California DOC 2022a).

DISCUSSION OF IMPACTS

a-e) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? Conflict with existing zoning for agricultural use, or a Williamson Act contract? Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland(as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? Result in a loss of forest land or conversion of forest land to non-forest use? 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?

Alternatives A through E - No Impact

There is Farmland, forest land, or timberland located in the vicinity of the project sites. All of the project sites are mapped by the DOC as Urban and Built-Up Land (California DOC 2022). The project would not convert Farmland, forest land, or timber land to non-agricultural use, or conflict with an existing zoning for agricultural use or a Williamson Act contract. No impact would occur.

CONCLUSION

Under Alternatives A through E, the proposed project would have no impact related to agriculture and forestry resources, and no mitigation measures would be required. The impact would be the same under each Alternative.

4.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.

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

ENVIRONMENTAL SETTING

The project sites are located within the San Francisco Bay Area Air Basin (SFBAAB) which has natural characteristics that limit the ability of natural processes to either dilute or transport air pollutants. The major determinants of air pollution transport and dilution are climatic and topographic factors such as wind, atmospheric stability, terrain that influences air movement, and sunshine. Wind and terrain can combine to transport pollutants away from upwind areas, while solar energy can chemically transform pollutants in the air to create secondary photochemical pollutants such as ozone. The following discussion provides an overview of the environmental setting with regard to air quality in the SFBAAB.

Ambient Air Quality and Climate

The Bay Area has a Mediterranean climate characterized by wet winters and dry summers. During the summer, a high-pressure cell centered over the northeastern Pacific Ocean results in stable meteorological conditions and a steady northwesterly wind flow that generally keeps storms from affecting the California coast. During the winter, the Pacific high-pressure cell weakens, resulting in increased precipitation and the occurrence of storms. The highest air pollutant concentrations in the Bay Area generally occur during inversions, when a surface layer of cooler air becomes trapped beneath a layer of warmer air. An inversion reduces the amount of vertical mixing and dilution of air pollutants in the cooler air near the surface.

Due to the proximity of the San Francisco Bay and the Pacific Ocean, the climate in the SFBAAB is characterized by warm dry summers and cool moist winters. In summers, temperatures in the City generally range from the 50 to 80 degrees Fahrenheit, while winter temperatures range from 30 to upper 50 degrees (City of Novato 2020). The City lies mostly on the sheltered side of the

Marin coastal mountains and receives approximately 30 inches of precipitation per year, which mainly occurs throughout November to April. High-pressure systems are also common in winter, with low-level inversions that produce cool stagnant conditions (City of Novato 2020).

Air Pollutants of Concern

The California Air Resources Board (CARB) and United States Environmental Protection Agency (EPA) focus on the following air pollutants as regional indicators of ambient air quality:

- Ozone
- Coarse particulate matter (PM10)
- Fine particulate matter (PM2.5)
- Nitrogen dioxide
- Carbon monoxide
- Sulfur dioxide
- Lead

Because these are the most prevalent air pollutants known to be harmful to human health based on extensive criteria documents, they are referred to as "criteria air pollutants." In the SFBAAB, the primary criteria air pollutants of concern are ground-level ozone formed through reactions of oxides of nitrogen (NOx) and reactive organic gases (ROG), PM10, and PM2.5. Regional air pollutants, such as ozone, PM10, and PM2.5, can be formed and/or transported over long distances and affect ambient air quality far from the emissions source. The magnitude and location of specific health effects from exposure to increased ozone, PM10, and PM2.5 concentrations are the result of emissions generated by numerous sources throughout the SFBAAB, as opposed to a single project.

Localized air pollutants generally dissipate with distance from the emission source and can pose a health risk to nearby populations. Toxic air contaminants (TACs), such as diesel particulate matter (DPM), are considered localized pollutants. PM2.5 is also considered a localized air pollutant, in addition to being considered a regional air pollutant. Air dispersion models can be used to reliably quantify the health risks to nearby receptors associated with emissions of localized air pollutants from an individual project.

Sensitive Receptors

Sensitive receptors are areas where individuals are more susceptible to the adverse effects of poor air quality. Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, parks, elderly housing, and convalescent facilities. Residential areas are also considered sensitive receptors because people are often at home for extended periods, thereby increasing the duration of exposure to potential air contaminants. Existing sensitive land uses in the vicinity of each alternative site location are further described below in the detailed analysis of each project Alternative.

Sunset Parkway Site (Site 1) and Existing PS Site

Sensitive receptors near the Sunset Parkway Site and Existing PS Site include residences to the north, west, south, and east as close as 40 feet and the Lynwood Elementary School about 580 feet to the north of the Sunset Parkway Site. No off-site worker receptors are within 1,000 feet of the Sunset Parkway Site or Existing PS Site.

Ignacio Boulevard Site (Site 2)

Sensitive receptors near the Ignacio Boulevard Site include residences to the north, west, and

east as close as 140 feet. No off-site worker receptors are within 1,000 feet of the Ignacio Boulevard Site.

Bolling Drive Site (Site 3)

Sensitive receptors near the Bolling Drive Site include residences to the west, east, and south as close as 95 feet; the North Bay Children's Center and Tinker Way School Age Program about 585 feet to the north; the Novato Children's Center about 650 feet to the northwest; and, the Hamilton Meadow Park School about 880 feet to the northwest. The playground within the Clark A Blasdell Park is located about 300 feet north of the Bolling Drive Site. Off-site worker receptors are located at the Novato Fire Station 65 about 135 feet to the south and along Nave Drive as close as 635 feet west of the Bolling Drive Site.

Main Gate Road Site (Site 4)

Sensitive receptors near the Main Gate Road Site include residences to the east, south, and northwest as close as 155 feet; the Hamilton Meadow Park School about 300 feet to the southwest; the Novato Charter School about 375 feet to the northeast; the North Bay Children Center, C Street about 480 feet to the northeast; the Wonder Nook Preschool about 690 feet to the north; the North Bay Children's Center, Tinker Way School Age Program about 950 feet to the south; and, the Espino C Family Child Care about 975 feet to the east of the Main Gate Road Site. Off-site worker receptors are located about 860 feet to the northwest and 750 feet to the northeast of the Main Gate Road Site.

C Street Site (Site 5)

Sensitive receptors near the C Street Site include residences to the east, south, and northwest as close as 105 feet; the Hamilton Meadow Park School about 630 feet to the southwest; the Novato Charter School about 200 feet to the north; the North Bay Children Center, C Street about 330 feet to the north; the Wonder Nook Preschool about 880 feet to the northwest; the North Bay Children's Center, Tinker Way School Age Program about 980 feet to the south; and, the Espino C Family Child Care about 670 feet to the southeast of the C Street Site. Off-site worker receptors are located about 860 feet to the northwest and 650 feet to the northeast of the C Street Site.

REGULATORY SETTING

Federal and State Regulations

The federal EPA is responsible for implementing the programs established under the Federal Clean Air Act, such as establishing and reviewing the National Ambient Air Quality Standards (NAAQS) and judging the adequacy of State Implementation Plans to attain the NAAQS. A State Implementation Plan must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. If a state fails to enforce its implementation of approved regulations, or if the EPA determines that a State Implementation Plan is inadequate, the EPA is required to prepare and enforce a Federal Implementation Plan to promulgate comprehensive control measures for a given State Implementation Plan.

CARB is responsible for establishing and reviewing the California Ambient Air Quality Standards (CAAQS), developing and managing the California State Implementation Plans, identifying TACs, and overseeing the activities of regional air quality management districts. In California, mobile emissions sources (e.g., construction equipment, trucks, and automobiles) are regulated by CARB

and stationary emissions sources (e.g., industrial facilities) are regulated by the regional air quality management districts.

In accordance with the Federal Clean Air Act and California Clean Air Act, areas in California are classified as either in attainment, maintenance (i.e., former nonattainment), or nonattainment of the NAAQS and CAAQS for each criteria air pollutant. California's 35 local Air Districts are responsible for regional air quality planning, monitoring, and stationary source and facility permitting. The project sites are within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD). To assess the regional attainment status, the BAAQMD collects ambient air quality data from over 30 monitoring sites within the SFBAAB. Based on current monitoring data, the SFBAAB is designated as a nonattainment area for ozone, PM10 (CAAQS only), and PM2.5, and is designated an attainment or unclassified area for all other pollutants (Table 4).

Table 4. Air Quality Standards and Attainment Status

POLLUTANT	AVERAGING TIME	CAAQS		NAAQS	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	8 Hours	0.070 ppm	N	0.070 ppm	N (marginal)
	1-Hour	0.09 ppm	N	Revoked in 2005	---
Carbon Monoxide	8 Hours	9.0 ppm	A	9 ppm	A
	1-Hour	20 ppm	A	35 ppm	A
Nitrogen Dioxide	1-Hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	---	0.053 ppm	A
Sulfur Dioxide	24 Hours	0.04 ppm	A	0.14 ppm	A
	1-Hour	0.25 ppm	A	0.075 ppm	A
	Annual	---	---	0.030 ppm	A
Coarse Particulate Matter (PM10)	Annual	20 µg/m^3	N	---	---
	24 Hours	50 µg/m^3	N	150 µg/m^3	U
Fine Particulate Matter (PM2.5)	Annual	12 µg/m^3	N	12 µg/m^3	U/A
	24 Hours	---	---	35 µg/m^3	N (moderate)
Lead	30 Days	1.5 µg/m^3	A	---	---
	Calendar Quarter	---	---	1.5 µg/m^3	A
	Rolling 3 Months	---	---	0.15 µg/m^3	A

Source: BAAQMD 2017

Notes: A = Attainment; N = Nonattainment; U = Unclassified; "---" = not applicable; ppm = parts per million; µg/m^3 = micrograms per cubic meter; PST = Pacific Standard Time.

Regional Regulatory Framework

The BAAQMD is primarily responsible for ensuring that the NAAQS and CAAQS are attained and maintained in the SFBAAB. The BAAQMD fulfills this responsibility by adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits, inspecting stationary sources of air pollutants, responding to citizen complaints, and monitoring ambient air quality and meteorological conditions.

The BAAQMD has adopted thresholds of significance to assist lead agencies in the evaluation of ozone precursors (NOx and ROG), PM10, and PM2.5 emitted from individual projects that could have a cumulatively considerable contribution to adverse air quality in the SFBAAB. The BAAQMD's thresholds of significance are summarized in Table 5.

ASSESSMENT METHODOLOGY

The project's potential impacts related to air quality were evaluated in accordance with the current BAAQMD CEQA Air Quality Guidelines. The project's estimated emissions associated with ROG, NOx, PM10, and PM2.5 were compared to the BAAQMD's thresholds of significance presented in Table 5.

Table 5. BAAQMD Project-level Thresholds of Significance

IMPACT ANALYSIS	POLLUTANT	THRESHOLD
Regional Air Quality (Construction)	ROG	54 pounds/day (average daily emission)
	NOx	54 pounds/day (average daily emission)
	Exhaust PM10	82 pounds/day (average daily emission)
	Exhaust PM2.5	54 pounds/day (average daily emission)
	Fugitive dust (PM10 and PM2.5)	Best management practices
	PM10	82 pounds/day (average daily emission) 15 tons/year (maximum annual emission)
	PM2.5	54 pounds/day (average daily emission) 10 tons/year (maximum annual emission)
Local Community Risks and Hazards	Exhaust PM2.5 (project)	0.3 µg/m^3 (annual average)
	TACs (project)	Cancer risk increase > 10.0 in one million Chronic hazard index > 1.0

	Exhaust PM2.5 (cumulative)	0.8 µg/m^3 (annual average)
	TACs (cumulative)	Cancer risk > 100 in one million Chronic hazard index > 10.0

Source: BAAQMD 2023
Notes: ROG = reactive organic gases; NOx = oxides of nitrogen; PM10 = coarse particulate matter; PM2.5 = fine particulate matter; TACs = toxic air contaminants; µg/m3 = micrograms per cubic meter+

DISCUSSION OF IMPACTS

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

Alternative A through Alternative E – Less than Significant Impact

The BAAQMD's 2017 Clean Air Plan (CAP) is the applicable air quality plan for projects located in the SFBAAB. Consistency may be determined by evaluating whether the project supports the primary goals of the 2017 CAP, including applicable control measures contained within the 2017 CAP, and would not conflict with or obstruct implementation of any 2017 CAP control measures. The primary goals of the 2017 CAP are the attainment of ambient air quality standards and reduction of population exposure to air pollutants for the protection of public health in the Bay Area (BAAQMD 2017). As described further in Impact b), the project's air pollutant emissions would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment or expose the local community to substantial air pollutant concentrations.

The 2017 CAP includes control measures that aim to reduce air pollution and greenhouse gases (GHGs) from stationary, area, and mobile sources. The control measures are organized into nine categories: stationary sources, transportation, buildings, energy, agriculture, natural and working lands, waste, water, and super-GHG pollutants (e.g., methane, black carbon, and fluorinated gases). The consistency of the proposed project with control measures from the 2017 CAP is summarized in Table 6.

Table 6. Project Consistency with BAAQMD 2017 CAP

CONTROL MEASURES	PROPOSED PROJECT CONSISTENCY
Stationary Sources	**Consistent**. The stationary source measures are enforced by the BAAQMD pursuant to its authority to control emissions from permitted facilities. As described below in Impact b), the project would require an emergency diesel generator at each new PS site. Control measure SS32 applies to emergency backup generators and aims to "reduce emissions of diesel PM and black carbon from backup emergency generators through Draft Rule 11-18, resulting in reduced health risks to impacted individuals, and in climate protection benefits." Under Rule 11-18, the BAAQMD conducts health risk assessments for facilities whose emissions pose potentially high health risks. Those facilities whose emissions are found to have health risks at or above a specific risk action level must prepare and implement a risk reduction plan that is approved by the BAAQMD. A Health Risk Assessment (HRA) for the proposed project was prepared by Baseline Environmental Consulting in January 2024 (included in Appendix C). As described below in Impact c), emissions from emergency

	generators installed as part of the project would not exceed BAAQMD thresholds of significance. Therefore, the proposed project would be consistent with stationary source control measures of the 2017 CAP.
Transportation	**Not applicable**. The transportation control measures are designed to reduce vehicle trips, use, miles traveled, idling, or traffic congestion for the purpose of reducing vehicle emissions. The project operation would not cause a significant increase in vehicle trips compared to the existing conditions. Therefore, the transportation control measures of the 2017 CAP are not applicable to the project.
Energy	**Not applicable**. The energy control measures are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the 2017 CAP are not applicable to the project.
Buildings	**Consistent**. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters, but has limited authority to regulate buildings themselves. Therefore, the building control measures focus on working with local governments that have authority over local building codes to facilitate adoption of best GHG control practices and policies. The District is not required to obtain a building permit from the City; however, the project would comply with all applicable requirements of the California Building Code (CBC) for the construction of new PS buildings. Therefore, the project would be consistent with the buildings control measures of the 2017 CAP.
Agriculture	**Not applicable**. The agriculture control measures are designed primarily to reduce emissions of methane. Since the project does not include any agricultural activities, the agriculture control measures of the 2017 CAP are not applicable to the project.
Natural and Working Lands	**Not applicable**. The control measures for the natural and working lands sector focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to adopt ordinances that promote urban tree plantings. Since the project does not include the disturbance of any rangelands or wetlands, the natural and working lands control measures of the 2017 CAP are not applicable to the project.
Waste Management	**Not applicable**. The waste management measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The project would generate minimal amounts of waste. Therefore, the waste management measures of the 2017 CAP are not applicable to the project.
Water	**Consistent**. The water control measures to reduce emissions from the water sector will reduce emissions of criteria pollutants, TACs, and GHGs

	by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. The project would increase the reliability of the POTW water distribution system, and therefore, the proposed project would be consistent with the water control measures of the 2017 CAP.
Super GHGs	**Not applicable**. The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the super-GHG control measures of the 2017 CAP are not applicable to the project.

Source: BAAQMD 2017

As show above in Table 6, the project under each Alternative would be consistent with applicable control measures from the 2017 CAP. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan, and the 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?

Alternative A through Alternative E – Less than Significant Impact with Mitigation Incorporated

Project construction activities would generate criteria air pollutant emissions that could potentially affect regional air quality. During construction, the primary pollutant emissions of concern would be ROG, NOx, PM10, and PM2.5 from the exhaust of off-road construction equipment and on-road construction vehicles related to worker vehicles, vendor trucks, and haul trucks. In addition, fugitive dust emissions of PM10 and PM2.5 would be generated by soil disturbance and demolition activities. The project's emissions of fugitive dust during construction are analyzed separately, further below.

The BAAQMD recommends using the most current version of the California Emissions Estimator Model (CalEEMod Version 2022.1) to estimate construction and operational emissions of pollutants from a project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land-use projects that can be used if site-specific information is not available. CalEEMod Version 2022.1 was used to estimate construction and operational emissions of pollutants from the proposed project. The primary input data used to estimate emissions associated with construction of the project were provided by the District and contain information on construction duration, import and export volumes, construction-related vehicle trips, trip lengths, and off-road construction equipment inventory and usage. Construction information provided by the District and a copy of the CalEEMod report for each Alternative of the proposed project, which summarize the input parameters, assumptions, and findings, are included in Appendix C.

To analyze daily emission rates, the total emissions estimated during construction were averaged over a total of 368 working days for Alternative A and B, and a total of 586 working days for Alternative C through E. As shown in Table 7, the project's estimated emissions for ROG, NOx, PM10, and PM 2.5 during construction are below the thresholds of significance and therefore, would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment.

Table 7. Estimated Construction Emissions (Pounds per Day)

CONSTRUCTION EMISSIONS	ROG	NO_X	EXHAUST PM10	EXHAUST PM2.5
Alternative A	1.7	1.6	0.1	0.1
Alternative B	1.7	2.0	0.1	0.1
Alternative C	2.5	2.2	0.1	0.1
Alternative D	1.4	2.0	0.1	0.1
Alternative E	1.4	1.9	0.1	0.1
BAAQMD CEQA Thresholds of Significance	54	54	82	54
Threshold Exceedance?	**No**	**No**	**No**	**No**

Source: CalEEMod Report, Appendix C

In this analysis, it was assumed that a 1,000-kilowatt emergency diesel generator would be required for each site under each Alternative, and the generator would be used for non-emergency operation up to 50 hours per year for routine testing and maintenance. The estimated maximum annual emissions and average daily emissions during the operational phase of the proposed project are compared to the BAAQMD's thresholds of significance in Table 8. As shown in Table 8, the project's estimated emissions for ROG, NOx, PM10, and PM2.5 during operation are below the thresholds of significance and therefore, would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment.

Table 8. Estimated Operation Emissions

EMISSIONS SCENARIO	MAXIMUM ANNUAL EMISSIONS (TONS)				AVERAGE DAILY EMISSIONS (POUNDS)			
	ROG	NOx	PM10	PM2.5	ROG	NOx	PM10	PM2.5
Alternative A and Alternative B – One Generator	0.06	0.25	0.01	0.01	0.30	1.35	0.04	0.04
Alternative C through Alternative E – Two Generators (one at each site)	0.11	0.49	0.02	0.02	0.60	2.70	0.09	0.09
BAAQMD CEQA Thresholds of Significance	10	10	15	10	54	54	82	54
Threshold Exceedance?	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod Report, Appendix C

The generation of fugitive dust PM10 and PM2.5 emissions from soil disturbance activities could result in a cumulatively considerable net increase in regional PM10 and PM2.5 concentrations. The BAAQMD does not have a quantitative threshold of significance for fugitive dust PM10 and PM2.5 emissions; however, the BAAQMD considers implementation of dust control measures during construction sufficient to reduce air quality impacts from fugitive dust to a less-than-significant level. The project would implement Mitigation Measure AQ-1, which contains Basic Best Management Practices (BMPs) from the BAAQMD's CEQA Guidelines. Implementation of

Mitigation Measure AQ-1 would ensure that project construction activities would not result in a cumulatively considerable net increase in criteria air pollutants for which the region is in nonattainment. The impact would be less than significant with mitigation incorporated.

c) Expose sensitive receptors to substantial pollutant concentrations?

During construction, the project would generate emissions of DPM and PM2.5 from the exhaust of diesel-powered engines, which can penetrate deeply into the lungs and contribute to a range of health problems. In 1998, the CARB identified DPM from diesel-powered engines as a TAC based on its potential to cause cancer and other adverse health effects. For risk-assessment purposes, TACs are separated into carcinogens and non-carcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per 1 million exposed individuals over a lifetime of exposure. Non-carcinogenic substances are generally assumed to have a safe threshold below which health impacts would not occur. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the sum of expected exposure levels divided by the corresponding acceptable exposure levels.

An Air Quality Health Risk Assessment (HRA) was prepared for the project by Baseline Environmental Consulting in January 2024 (included in Appendix C). The purpose of the HRA was to evaluate potential health risk impacts to nearby sensitive receptors associated with DPM emissions during project construction and operation. The health risks to nearby sensitive receptors were evaluated in accordance with guidance from the Office of Environmental Health Hazard Assessment (OEHHA) and the BAAQMD's recommended thresholds of significance. The BAAQMD's recommended health risk thresholds are summarized in Table 9.

Table 9. BAAQMD Health Risk Screening Threshold

IMPACT ANALYSIS	POLLUTANT	SCREENING THRESHOLDS
Local Community Risks and Hazards (Operation and/or Construction)	$PM_{2.5}$ (project)	0.3 µg/m^3 (annual average)
	TACs (project)	Cancer risk increase > 10 in one million Chronic hazard index > 1.0
	$PM_{2.5}$ (cumulative)	0.8 µg/m^3 (annual average)
	TACs (cumulative)	Cancer risk > 100 in one million Chronic hazard index > 10.0

Notes: µg/m^3 = micrograms per cubic meter.
Source: BAAQMD 2023.

Exposure to DPM Emissions During Construction

As mentioned above, CalEEMod was used to estimate air pollutant emissions from project construction. The primary input data used to estimate emissions associated with construction of the project were provided by the District and contain information on construction duration, import and export volumes, construction-related vehicle trips, trip lengths, and off-road construction equipment inventory and usage. Construction information provided by the District and a copy of the CalEEMod report for each Alternative are included in Appendix C. For this analysis, emissions of exhaust PM_{10} were used as a surrogate for DPM, which is a conservative

assumption because more than 90 percent of DPM is less than 1 micron in diameter.[6] The total DPM emissions from construction activities at the five alternative site locations are presented in Table 10.

Table 10. On-site DPM Emissions (Pounds)

CONSTRUCTION EMISSION SCENARIO	TOTAL ON-SITE DPM EMISSIONS FROM OFFROAD CONSTRUCTION EQUIPMENT
Sunset Parkway Site (Alternative A)	21.8
Ignacio Boulevard Site (Alternative B)	19.4
Bolling Drive Site (Alternative C, excluding Site 2 emissions)	18.7
Main Gate Road Site (Alternative D, excluding Site 2 emissions)	15.8
C Street Site (Alternative E, excluding Site 2 emissions)	15.6

Notes: DPM emissions from existing pump station demolition were included for Site 1 but not for Site 2 to 5 due to the distances between the existing pump station and Site 2 to 5. DPM emissions from Site 3 to 5 were estimated by subtracting the total on-site offroad construction equipment DPM emissions estimated for Alternative B (Site 2 only) from the total on-site offroad construction equipment DPM emissions estimated for Alternative C through E.
Source: Appendix C.

The annual average concentrations of DPM and exhaust PM2.5 during construction were estimated within 1,000 feet of the project using the federal EPA's Industrial Source Complex Term air dispersion model. Daily emissions from construction were assumed to primarily occur between 7 a.m. and 6 p.m. Monday through Friday, and between 10 a.m. and 5 p.m. on Saturdays, in accordance with the construction hours established in the City of Novato Municipal Code Division 19.22.070. Exhaust and fugitive dust emission rates for off-road equipment were based on the actual hours of work and averaged over the entire duration of construction.

The air dispersion model was used to estimate annual average concentrations of PM10 and PM2.5 from project construction emissions for Alternative A. For the purposes of the HRA, Alternative A was assumed to be the worst-case scenario due to the location of the Sunset Parkway Site and Existing PS Site in close proximity to sensitive receptors, such as residences and schools. In addition, the sites are within the same vicinity, and therefore emissions from demolition of the existing PS as well as emissions from construction of the new PS would be occurring in the same area, which is not the case under Alternatives B through E as the new PS Site is not near the Existing PS Site. Estimates of the health risks at the maximally exposed individual resident (MEIR) and the maximally exposed individual student (MEIS) from exposure to DPM and PM2.5 concentrations during project construction are summarized and compared to the BAAQMD's thresholds of significance in Table 11. The estimated excess cancer risk and chronic HI for DPM and annual average PM2.5 concentrations from construction emissions under Alternative A were below the thresholds of significance. Therefore, construction of the project

[6] California Air Resources Board (CARB), 2016. Overview: Diesel Exhaust and Health. Available at: https://www.arb.ca.gov/research/diesel/diesel-health.htm, accessed January 13, 2017. Last updated April 12, 2016.

would not expose existing sensitive receptors to substantial concentrations of TACs and PM2.5 from construction of Alternative A (the worst-case scenario) and the impact would be less than significant for Alternatives A through E.

Table 11. Health Risks during Project Construction for Alternative A (Worse Case Scenario)

EMISSIONS SCENARIO	RECEPTOR	DIESEL PARTICULATE MATTER		$PM_{2.5}$ ANNUAL AVERAGE CONCENTRATION ($\mu G/M^3$)
		CANCER RISK (PER MILLION)	CHRONIC HAZARD INDEX	
Construction Exhaust (Sunset Parkway Site)	MEIR	9.39	0.01	0.04
	MEIS	0.75	<0.01	0.01
Thresholds of Significance		10	1.0	0.3
Exceed Threshold?		No	No	No

Notes: $\mu g/m^3$ = micrograms per cubic meter
Source: Appendix C

As shown in Table 11, the estimated excess cancer risk and chronic HI for DPM and annual average PM2.5 concentrations from construction emissions under Alternative A were below the thresholds of significance. Therefore, construction of the project would not expose existing sensitive receptors to substantial concentrations of TACs and PM2.5 from construction of Alternative A (the worst-case scenario) and the impact would be less than significant for Alternatives A through E.

Exposure to DPM Emissions During Operation

For the purposes of the HRA analysis, it was assumed that a 1,000-kilowatt emergency diesel generator would be required at each new PS site, and the generator would be used for non-emergency operation up to 50 hours per year for routine testing and maintenance. Operation of stationary sources is subject to BAAQMD permitting requirements to minimize the potential exposure of nearby sensitive receptors to TACs. In accordance with BAAQMD's Regulation 2-5, New Source Review of Toxic Air Contaminants, the BAAQMD does not issue permits for generators that would result in an excess cancer risk greater than 10 in 1 million or a chronic HI greater than 1.0. Therefore, operation of the project would not expose existing sensitive receptors to substantial concentrations of TACs and PM2.5 for Alternatives A through E.

Cumulative Toxic Air Contaminant Emissions

In addition to a project's individual TAC emissions during construction and operation, the potential cumulative health risks to sensitive receptors from existing TACs were evaluated. Cumulative health risks were estimated at the MEIR for Alternative A to represent the worst-case-exposure scenario for sensitive receptors in the project vicinity.

Conservatively estimating the project's emergency generators would result in the BAAQMD's maximum permissible excess cancer risk of 10 in 1 million due to the emission of DPM, the BAAQMD Health Risk Calculator was used to back-calculate the equivalent screening level health risk values for chronic HI and annual average PM2.5 concentrations. Based on the emission rate for DPM (0.0071 pounds per day), that would result in a maximum cancer risk of 10 in 1 million, the associated fraction of PM2.5 emissions from an emergency generator were estimated using CARB's specification profiles. The supporting health risk calculations are included in Appendix C.

There are no existing stationary sources within 1,000 feet of the MEIR, and there are no reasonably foreseeable future projects within 1,000 feet of the Sunset Parkway Site and Existing

PS Site that would introduce a new source of TAC and/or PM2.5 emissions. Estimates of the cumulative health risks at the MEIR for the project are summarized and compared to cumulative thresholds of significance in Table 12.

Table 12. Cumulative Health Risks for Alternative A (Worse-Case Scenario)

SOURCE	SOURCE TYPE	REF	DIESEL PARTICULATE MATTER		$PM_{2.5}$ ANNUAL AVERAGE CONCENTRATION ($\mu G/M^3$)
			CANCER RISK (PER MILLION)	CHRONIC HAZARD INDEX	
Project					
Off-Road Construction Equipment	Diesel Exhaust		9.39	0.01	0.04
Emergency Generator	Diesel Generator	1	9.99	<0.01	0.01
Existing Mobile Sources					
Roadway	Mobile	2	9.5	0.03	0.2
Cumulative Health Risks			28.9	<0.1	0.3
Thresholds of Significance			100	10.0	0.8
Exceed Threshold?			No	No	No

Notes: $\mu g/m^3$=micrograms per cubic meter; HI=hazard index; NA=not applicable; Ref=reference
Health risk screening values derived using the following BAAQMD tools and methodologies:
1) BAAQMD's Health Risk Calculator (Beta Version 5.0)
2) BAAQMD Beta version Mobile Source Screening Map, 2023
Source: Appendix C

As shown in Table 12, cumulative cancer risk, cumulative chronic HI, and annual average PM2.5 at the MEIR location were below the BAAQMD's cumulative thresholds for Alternative A (the worst-case scenario). Therefore, the exposure of existing sensitive receptors to substantial concentrations of TACs and PM2.5 from implementation of the project would not be cumulatively considerable and the impact would be less than significant for Alternatives A through E.

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

Alternative A through Alternative E – Less than Significant Impact

Some odors would be generated during project construction due to the use of gasoline- and/or diesel-powered construction equipment that emit exhaust fumes. These activities would take place intermittently throughout the workday and the associated odors would dissipate within the immediate vicinity of the work area. Persons near the construction work area may find these odors objectionable; however, the project would not include uses that have been identified as potential sources of objectionable odors, such as restaurants, manufacturing plants, landfills, and agricultural and industrial operations.

Water PS are not typically associated with objectionable odors; therefore, no odor impacts associated with the new PS would occur during project operation. The impact would be less than

significant.

MITIGATION MEASURES

Mitigation Measure AQ-1: Fugitive Dust Control Measures

The project shall implement BMPs as recommended by the BAAQMD 2022 CEQA Air Quality Guidelines, which include the following measures:

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

CONCLUSION

Under Alternatives A through E, the impact of the proposed project related to air quality would be reduced to a less than significant level with the implementation of mitigation measures. None of the Alternatives would conflict with the BAAQMD 2017 CAP, and therefore, the impact related to confliction with a local plan or policy addressing air quality would be the same under each Alternative. Alternative C would have the most substantial impact related to construction emissions, and Alternatives C, D, and E would have the most substantial impact related to operational emissions from the emergency diesel generators. Under each Alternative, construction activities would generate fugitive dust emissions (PM2.5 and PM10), which would be reduced to a less than significant level with the implementation of Mitigation Measure AQ-1, which includes standard construction BMPs recommended by the BAAQMD. Alternative A would have the most substantial impact related to TAC and DPM emissions during construction because the construction and demolition activities would be occurring at the Sunset Parkway Site and Existing PS Site, which are in close proximity to one another. However, the HRA found that none of the Alternatives would have a potentially significant impact related to exposing sensitive populations to substantial pollution concentrations, and that no mitigation measures are required. Under Alternatives A through E, the project would not result in other emissions (such as those leading to odors) that would affect a substantial number of people; the impact would be the same under each Alternative.

4.2.4 Biological Resources

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and 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, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
c)	Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, 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?	☐	☐	☐	☒

On March 29 and December 13, 2023, WRA, Inc. (WRA) biologists visited the project sites to map vegetation, unvegetated land cover types, document plant and wildlife species presence, and evaluate habitat for the potential to support special-status species as defined by CEQA. The research and survey methodology and results of these surveys are summarized in the following

sections. Information in this section relies on the Biological Resources Technical Report (BRTR, Appendix D) prepared by WRA biologists in January 2024. WRA also prepared an Arborist Report for the proposed project in January 2024, which is included as Appendix E.

REGULATORY SETTING – FEDERAL AND STATE

Endangered and Threatened Plants, Fish, and Wildlife

Specific species of plants, fish and wildlife may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of "endangered" and "threatened" plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to "take" of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in "take" of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federally listed plant species are only protected when take occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must insure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (California Fish and Game Code [CFGC] 2050 et seq.) prohibits the "take" of any plant and animal species that the California Fish and Game Commission determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to "candidate species" which are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. The California Department of Fish and Wildlife (CDFW) may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit.

Fully Protected Species and Designated Rare Plant Species

This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or the ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in the CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for the take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the CFGC and the CESA.

Special Protections for Nesting Birds and Bats

The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species (bald [Haliaeetus leucocephalus] and golden eagle [*Aquila chrysaetos*]) that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the U.S., including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 (MBTA) and CFGC, i.e., Sections 3503, 3503.5 and 3513. Under these laws/codes, the harm or collection of adult birds as well as the collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA (Western Bat Working Group 2021).

Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA

A Species of Special Concern is a species formally designated by CDFW which meet one or more criteria related to federal ESA status (if it is not listed under CESA), extirpation from California, documented population declines, or small population size within California and risk of declines. Section 15280 of the CEQA Guidelines state that species of special concern must be included in project impact analyses. In addition, CDFW has developed a special animals list as "a general term that refers to all of the taxa the California Natural Diversity Database (CNDDB) is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Special Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory) (CNPS 2023) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

REGULATORY SETTING – LOCAL

City of Novato Tree Ordinance (Private Property)

The City of Novato Tree Ordinance defines a "tree" on private property as any native or non-native woody plant having a major trunk or trunk of a diameter of 6 inches or greater measured at 24 inches above grade, and a "heritage tree" is defined as any tree having a diameter of 24 inches or greater, measured at 24 inches above grade (Ord. No. 1576, § 2, 10-23-12). The alteration or removal of a heritage tree on any parcel or of one or more tree on an undeveloped

parcel is prohibited without a permit from the City of Novato (Ord. No. 1441 § 2(E); Ord. No. 1576, § 2, 10-23-2012). The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit.

City of Novato Tree Ordinance (Public Places)

The City of Novato Tree Ordinance defines a "tree" on or adjacent to public places as any woody perennial plant having a single main axis or stem commonly achieving ten feet in height and capable of shaping and pruning to develop a branch-free trunk at least nine feet in height, and a "shrub" is defined as any woody perennial plant having a single main axis or stem commonly achieving ten feet in height and capable of shaping and pruning to develop a branch-free trunk at least nine feet in height, and a "shrub" is defined as any woody perennial plant, normally low, several stemmed, adaptable to shaping, trimming and pruning without injury within the area planted (Ord. No. 1576, § 2, 10-23-12). The trimming, alteration, or removal of and street tree or shrub is prohibited without approval from the City of Novato (Ord. No. 1441 § 2(E); Ord. No. 1576, § 2(E), 10-23-2012). The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit.

City of Novato Wetland Protection and Restoration

The City of Novato municipal code stipulates that any development shall be designed and constructed to avoid wetlands to the maximum extent feasible (Ord. No. 1576, § 2, 10-23-2012). Wetlands are defined as waters delineated by the United States Army Corps of Engineers (Corps) under the provisions of the Clean Water Act. Permit approval is required for any project within 50 feet of a wetland, requiring wetland protection measures, involving wetland/encroachment, or requiring wetland mitigation; and, for all wetland protection, restoration, enhancement, and/or mitigation projects (Ord. No. 1576, § 2, 10-23-2012). The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit.

City of Novato Waterways and Riparian Protection

The City of Novato municipal code stipulates that all lands adjoining or encompassing watercourses and their significant tributaries shall be subject to a Stream Protection Zone (Ord. No. 1576, § 2, 10-23-2012). These lands are shown on "ES- 1" within the General Plan. A Stream Protection Zone includes the streambed, stream banks, all riparian vegetation, and an upland buffer at least 50 feet wide measured from top of the channel bank. Proposed development, land uses and activities including any proposed development application, land division, use permit, grading or building permit for any excavation, fill, grading, or paving; removal or planting of vegetation; construction, alteration, or removal of any structure; or alteration of any embankment within the Stream Protection Zone requires Use Permit approval (Ord. No. 1576, § 2, 10-23-2012). The District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit.

METHODOLOGY

On March 29 and December 13, 2023, WRA biologists visited the project sites to map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Contemporary aerial photographs (Google Earth 2024)
- Historical aerial photographs (NETR 2024)
- National Wetlands Inventory (USFWS 2024a)
- California Aquatic Resources Inventory (SFEI 2024)
- CNDDB (CDFW 2024b)
- CNPS Inventory (CNPS 2024)
- Consortium of California Herbaria (CCH1 2024, CCH2 2024)
- USFWS Information for Planning and Consultation (USFWS 2024b)
- eBird Online Database (Cornell Lab of Ornithology 2024)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)
- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2024)
- California Natural Community List (CDFW 2024a)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Novato and eight surrounding USGS 7.5-minute quadrangles.

Following the remote assessment, WRA biologists completed a field review over the course of two days to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.

Special-status Species

Potential occurrence of special-status species in the project site areas was evaluated by first determining which special-status species occur in the vicinity of the project site through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the site visits based on physical and biological conditions in the project site area as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the project site area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the Study Area is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Study Area is unsuitable or of very poor quality. The species is not likely to be found in the Study Area.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Study

Area is unsuitable. The species has a moderate probability of being found in the Study Area.

- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Study Area is highly suitable. The species has a high probability of being found in the Study Area.
- **Present.** Species is observed on the site or has been recorded (i.e., CNDDB, other reports) in the Study Area in the recent past.

Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement and migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2024). Additionally, aerial imagery (Google Earth 2024) for the local area was referenced to assess if local core habitat areas were present within, or connected to the project sites. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity. Examples of native wildlife nursery sites include nesting sites for native bird species (particularly colonial nesting sites), marine mammal pupping sites, and colonial roosting sites for other species (such as for monarch butterfly [*Danaus plexippus*]).

ENVIRONMENTAL SETTING

The project sites are located in the inland region of Marin County. The average monthly maximum temperate in the area if 70 degrees Fahrenheit, while the average monthly minimum temperature is 48 degrees Fahrenheit. Predominantly, precipitation falls as rainfall between November and March with an annual average precipitation of 36 inches.

The local watershed is Miller Creek-Frontal San Pablo Bay Estuaries and the regional watershed is San Pablo Bay. The project sites are located in the western portion of the San Pablo Bay watershed.

Sunset Parkway Site (Site 1)

The Sunset Parkway Site and staging area on Sunset Parkway are characterized by developed/landscaped land cover.

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site and staging area are characterized by developed/landscaped land cover. The Ignacio Boulevard Site is situated within 50 feet of riparian vegetation associated with Arroyo San Jose Creek.

Bolling Drive Site (Site 3)

The Bolling Drive Site and staging areas are characterized by developed/landscaped land cover.

Main Gate Road site (Site 4)

The Main Gate Road Site is characterized by developed/landscaped land cover, while the staging area is characterized by ruderal herbaceous land cover. The Main Gate Road Site is situated within 50 feet of riparian vegetation associated with Pacheco Creek.

C Street Site (Site 5)

The C Street Site and staging area are characterized by developed/landscaped land cover.

Existing PS Site

The Existing PS Site and staging area on Sunset Parkway are characterized by developed/landscaped land cover.

DISCUSSION OF IMPACTS

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or United States Fish and Wildlife Service (USFWS)?

Alternative A through Alternative E – Less than Significant Impact with Mitigation Incorporated

Special-status Plant Species

Based upon a review of the resource databases listed in the Methodology Section above, 105 special-status plant species have been documented in the vicinity of the project sites. None of these species were determined to have the potential to occur or are unlikely to occur within the project sites due to one or more of the following:

- The project sites do not contain the necessary hydrologic, edaphic (soil), topographic, and pH conditions necessary to support the special-status species.
- Associated natural communities necessary to support the special-status species are not present within the project sites.
- The project sites are geographically isolated from the documented range of the special-status plant species.
- The historical landscape and/or habitat(s) of the project sites were not suitable habitat prior to land/type conversion to support the special-status plant species.
- Land use history and contemporary management has degraded the localized habitat necessary to support the special-status plant species.

WRA biologists did not observe any special-status plant species during the March 29 and December 13, 2023 site visits. Because no special-status plant species were observed on the project sites, and special-status plant species have no potential to occur or are unlikely to occur on the project site, the proposed project under Alternatives A through E would have no impact on special-status plant species.

Special-status Wildlife Species

Based upon a review of the resource databases listed in the Methodology Section above, no special-status wildlife species have been documented on or adjacent to the project sites; however, 54 special-status wildlife species have been documented in the general vicinity of the project sites. The BRTR concluded that, of the 54 special-status species, all are considered unlikely, or have no potential, to occur within the project sites based on a lack of suitable habitat features.

Features not found within the project sites that are required to support special-status wildlife species include:

- Vernal pools,
- Perennial aquatic habitat (e.g., streams, rivers, or ponds),
- Tidal marsh areas,
- Old growth redwood or fir forest,
- Open grassland,
- Sandy beaches or alkaline flats,
- Presence of specific host plants, and
- Caves, mine shafts, or abandoned buildings.

The absence of such habitat features eliminates components critical to the survival or movement of special-status species found in the vicinity. Given the project sites' relative proximity to sensitive habitats on the San Francisco Bay, many species documented nearby are additionally obligates to marine or tidal marsh habitats which are not present on or in the immediate vicinity of the project sites.

Although special-status bird species are unlikely to nest within the project sites, common birds protected under the MBTA and CFGC may nest within trees or on the ground within the project sites. Project construction activities, such as grading and other earth-disturbing activities, could impact nesting birds or their eggs, which is considered a potentially significant impact. The project would implement Mitigation Measure BIO-1 to reduce impacts to nesting bird species to a less-than-significant level. With implementation of Mitigation Measure BIO-1, the proposed project under Alternatives A through E would not have a substantial adverse effect on any candidate, sensitive, or special-status species. The impact would be less than significant with mitigation incorporated.

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 CDFW or USFWS?

Alternative A – No Impact

The Sunset Parkway Site, Existing PS Site, and staging area on Sunset Parkway are entirely covered by developed/landscaped land cover. No sensitive natural communities are present on the project sites or staging area. Therefore, no impact related to riparian habitat or other sensitive natural community would occur.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site and staging area, Existing PS Site, and staging area on Sunset Parkway are entirely covered by developed/landscaped land cover. No sensitive natural communities are present on the project sites or staging area. The Ignacio Boulevard Site and staging area are located within 50 feet of riparian vegetation associated with Arroyo San Jose Creek. No impacts to riparian vegetation would occur as the staging areas are outside the dripline of riparian vegetation. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Bolling Drive Site and staging areas, Ignacio Boulevard Site and staging area, Existing PS Site, and staging area on Sunset Parkway are entirely covered by developed/landscaped land cover. No sensitive natural communities are present on the project sites or staging area. The Ignacio Boulevard Site and staging area are located within 50 feet of riparian vegetation associated with Arroyo San Jose Creek. No impacts to riparian vegetation would occur as the

staging areas are outside the dripline of riparian vegetation. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Main Gate Road Site, Ignacio Boulevard Site and staging area, Existing PS Site, and staging area on Sunset Parkway are entirely covered by developed/landscaped land cover. The Main Gate Road staging area is covered by ruderal herbaceous land cover, which is not considered a sensitive natural community. No sensitive natural communities are present on the project sites or staging area. The Ignacio Boulevard Site and staging area and Main Gate Road Site and staging area are located within 50 feet of riparian vegetation associated with Arroyo San Jose and Pacheco Creek, respectively. No impacts to riparian vegetation would occur as the staging areas are outside the dripline of riparian vegetation. The impact would be less than significant.

Alternative E – Less than Significant Impact

The C Street Site and staging area, Ignacio Boulevard Site and staging area, Existing PS Site, and staging area on Sunset Parkway are entirely covered by developed/landscaped land cover. No sensitive natural communities are present on the project sites or staging area. The Ignacio Boulevard Site and staging area are located within 50 feet of riparian vegetation associated with Arroyo San Jose Creek. No impacts to riparian vegetation would occur as the staging areas are outside the dripline of riparian vegetation. The impact would be less than significant.

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?

Alternative A – No Impact

No aquatic resources are present within the Sunset Parkway Site, Existing PS Site, or staging area on Sunset Parkway. Therefore, the project would not have a substantial adverse effect on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. No impact would occur.

Alternative B – Less than Significant Impact

No aquatic resources are present within the Ignacio Boulevard Site or staging area, Existing PS Site, or staging area on Sunset Parkway. The Ignacio Boulevard Site is situated within 100 feet of Arroyo San Jose Creek; however, the stream would not be impacted by project activities. As such, the project would not have a substantial adverse effect on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. The impact would be less than significant.

Alternative C – Less than Significant Impact

No aquatic resources are present within the Bolling Drive Site or staging areas, Ignacio Boulevard Site or staging areas, Existing PS Site, or staging area on Sunset Parkway. The Ignacio Boulevard Site is situated within 100 feet of Arroyo San Jose Creek; however, the stream would not be impacted by project activities. As such, the project would not have a substantial adverse effect on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. The impact would be less than significant.

Alternative D – Less than Significant Impact

No aquatic resources are present within the Main Gate Road Site or staging area, Ignacio

Boulevard Site or staging areas, Existing PS Site, or staging area on Sunset Parkway. The Ignacio Boulevard Site and Main Gate Road Site are situated within 100 feet of Arroyo San Jose Creek and Pacheco Creek, respectively; however, the streams would not be impacted by project activities. As such, the project would not have a substantial adverse effect on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. The impact would be less than significant.

Alternative E – Less than Significant Impact

No aquatic resources are present within the C Street Site or staging area, Ignacio Boulevard Site or staging areas, Existing PS Site, or staging area on Sunset Parkway. The Ignacio Boulevard Site is situated within 100 feet of Arroyo San Jose Creek; however, the stream would not be impacted by project activities. As such, the project would not have a substantial adverse effect on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. The impact would be less than significant.

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?

Alternative A through Alternative E – No Impact

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. As described in the "Methodology" Section above, WRA biologists reviewed maps from the California Essential Connectivity Project and habitat connectivity data available through the CDFW Biogeographic Information and Observation System, as well as aerial imagery for the local area to assess if local core habitat areas were present within or connected to the project sites. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

The BRTR concluded that none of the project sites serve as migration corridors or native wildlife nursery sites. The project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No impact would occur.

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

Alternative A – Less than Significant Impact

Alternative A would likely require the removal of three Siberian elm trees located within the Sunset Parkway Site, and potential trimming of one Siberian elm located directly outside of the Sunset Parkway Site boundary. These trees are in fair to poor condition, exhibiting internal decay and scaffold branch failure. This Alternative would likely avoid four trees including one olive and one Mexican fan palm located at the Existing PS Site, and two mulberries located at the staging area on Sunset Parkway. All trees on and within the immediate vicinity of the Sunset Parkway Site, Existing PS Site, and staging area on Sunset Parkway are classified as "City trees" as defined by the City's Tree Ordinance. The project will implement standard tree protection measures for all avoided trees as described in the Arborist Report (WRA 2023, Appendix E).

The District is not required to comply with the City of Novato Ordinances. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's

Tree Ordinance. However, the District intends to replace trees removed by the project at the recommended one to one ratio, which is consistent with the City's Tree Ordinance. Accordingly, three replacement trees for the removal of the three Siberian elm trees on the Sunset Parkway Site would be included as part of Alternative A. The project would not conflict with any local policies or ordinances protecting biological resources. The impact would be less than significant.

Alternative B – Less than Significant Impact

There are no trees situated within the Ignacio Boulevard Site boundary or staging area, and therefore, project activities at the Ignacio Boulevard Site would not impact any trees. Alternative B would likely avoid four trees including one olive and one Mexican fan palm located at the Existing PS Site, and two mulberries located at the staging area on Sunset Parkway. All trees on and within the immediate vicinity of the Existing PS Site and staging area on Sunset Parkway are classified as "City trees" as defined by the City's Tree Ordinance. The project will implement standard tree protection measures for all avoided trees as described in the Arborist Report (WRA 2023, Appendix E).Upland areas within 50 feet of streambanks or riparian vegetation are subject to Stream Protection Zone requirements per the City's Waterways and Riparian Protection Ordinance. The Ignacio Boulevard Site is situated within 50 feet of riparian vegetation associated with Arroyo San Jose Creek. However, the District is not required to comply with City of Novato Ordinances. As such, there is no potential conflict with local ordinances and there is no impact due to tree removal or project activities within the Stream Protection Zone. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance, or implement requirements of the City's Waterways and Riparian Protection Ordinance. The impact would be less than significant.

Alternative C – Less than Significant Impact

Alternative C would likely require the removal of three planted valley oak trees located within the Bolling Drive Site boundary, and potential trimming of one Crepe myrtle located directly outside the Bolling Drive Site boundary. The three valley oak trees likely to require removal are relatively small trees in good condition. There are no trees situated within the Ignacio Boulevard Site boundary or staging area, and therefore project activities at the Ignacio Boulevard Site would not impact any trees. Alternative C would likely avoid four trees including one olive and one Mexican fan palm located at the Existing PS Site, and two mulberries located at the staging area on Sunset Parkway. All trees on and within the immediate vicinity of the Bolling Drive Site, Existing PS Site, and staging area on Sunset Parkway are classified as "City trees" as defined by the City's Tree Ordinance. The project will implement standard tree protection measures for all avoided trees as described in the Arborist Report (WRA 2023, Appendix E).

The District is not required to comply with the City of Novato Ordinances. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance. However, the District intends to replace trees removed by the project at the recommended one to one ratio, which is consistent with the City's Tree Ordinance. Accordingly, three replacement trees for the removal of the three valley oak trees on the Bolling Drive Site would be included as part of Alternative C.

Upland areas within 50 feet of streambanks or riparian vegetation are subject to Stream Protection Zone requirements per the City's Waterways and Riparian Protection Ordinance. The Ignacio Boulevard Site is situated within 50 feet of riparian vegetation associated with Arroyo San Jose Creek. However, the District is not required to comply with City of Novato Ordinances. As such, there is no potential conflict with local ordinances and there is no impact due to tree removal or project activities within the Stream Protection Zone. As such, the project is not

required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance or implement requirements of the City's Waterways and Riparian Protection Ordinance. The project would not conflict with any local policies or ordinances protecting biological resources. The impact would be less than significant.

Alternative D – Less than Significant Impact

Alternative D would likely require the removal of six City trees including four California sycamores, one London plane tree, and one flossy privet on the Main Gate Road Site. There are no trees situated within the Ignacio Boulevard Site boundary or staging area, and therefore project activities at the Ignacio Boulevard Site would not impact any trees. Alternative D would likely avoid four trees including one olive and one Mexican fan palm located at the Existing PS Site, and two mulberries located at the staging area on Sunset Parkway. All trees on and within the immediate vicinity of the Main Gate Road Site, Existing PS Site, and staging area on Sunset Parkway are classified as "City trees" as defined by the City's Tree Ordinance. The project will implement standard tree protection measures for all avoided trees as described in the Arborist Report (WRA 2023, Appendix E).

The District is not required to comply with the City of Novato Ordinances. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance. However, the District intends to replace trees removed by the project at the recommended one to one ratio, which is consistent with the City's Tree Ordinance. Accordingly, six replacement trees for the removal of the four California sycamore trees, London plane tree, and glossy privet tree on the Main Gate Road Site would be included as part of Alternative D.

Upland areas within 50 feet of streambanks or riparian vegetation are subject to Stream Protection Zone requirements per the City's Waterways and Riparian Protection Ordinance. The Ignacio Boulevard Site and Main Gate Road Site are situated within 50 feet of riparian vegetation associated with Arroyo San Jose Creek and Pacheco Creek, respectively. However, the District is not required to comply with City of Novato Ordinances. As such, there is no potential conflict with local ordinances and there is no impact due to tree removal or project activities within the Stream Protection Zone. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance or implement requirements of the City's Waterways and Riparian Protection Ordinance. The project would not conflict with any local policies or ordinances protecting biological resources. The impact would be less than significant.

Alternative E – Less than Significant Impact

Alternative E would likely require the removal of one protected-size Chinese elm and one non-protected Chinese elm within the C Street Site. Two additional Chinese elm trees would likely be avoided as they are located on the edge of the C Street Site staging area. There are no trees situated within the Ignacio Boulevard Site boundary or staging area, and therefore project activities at the Ignacio Boulevard Site would not impact any trees. Alternative E would likely avoid four trees including one olive and one Mexican fan palm located at the Existing PS Site, and two mulberries located at the staging area on Sunset Parkway. All trees on and within the immediate vicinity of the Existing PS Site, and staging area on Sunset Parkway are classified as "City trees" as defined by the City's Tree Ordinance. The project will implement standard tree protection measures for all avoided trees as described in the Arborist Report (WRA 2023).

The District is not required to comply with the City of Novato Ordinances. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance. However, the District intends to replace trees removed by the project at the recommended one to one ratio, which is consistent with the City's Tree Ordinance. Accordingly, one replacement tree for the removal of the protected-size Chinese elm tree on the C Street Site would be included as part of Alternative E.

Upland areas within 50 feet of streambanks or riparian vegetation are subject to Stream Protection Zone requirements per the City's Waterways and Riparian Protection Ordinance. The Ignacio Boulevard Site is situated within 50 feet of riparian vegetation associated with Arroyo San Jose Creek. However, the District is not required to comply with City of Novato Ordinances. As such, there is no potential conflict with local ordinances and there is no impact due to tree removal or project activities within the Stream Protection Zone. As such, the project is not required to replace trees to be removed by project activities in accordance with the City's Tree Ordinance or implement requirements of the City's Waterways and Riparian Protection Ordinance. The project would not conflict with any local policies or ordinances protecting biological resources. The impact would be less than significant.

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?

Alternative A through Alternative E – No Impact

The project would not 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 such plan exists applicable to the project sites. No impact would occur.

MITIGATION MEASURES

Mitigation Measure BIO-1: Nesting Birds

If project activities must be conducted during the nesting season (February 15 through September 1), a pre-construction nesting bird survey will be conducted by a qualified biologist no more than seven days prior to vegetation removal or initial ground disturbance. The survey will include the project site and within a minimum 500 feet of all project areas to identify the location and status of any nests that could potentially be affected either directly or indirectly by project activities.

If active nests of native nesting bird species are located during the preconstruction nesting bird survey, a work exclusion zone will be established around each nest by the qualified biologist. Established exclusion zones will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g., due to predation). Suggested buffer zone distances differ depending on species, location, baseline conditions, and placement of nest and shall be determined in the field by a qualified biologist.

CONCLUSION

Under Alternatives A through E, impacts related to special-status species, migratory wildlife corridors, local policies and ordinances protecting biological resources, and adopted Habitat Conservation Plans and Natural Community Conservation Plans would be similar. The Ignacio Boulevard Site and Main Gate Road Site are situated within 100 feet of Arroyo San Jose Creek

and Pacheco Creek, respectively, and therefore, project activities at either of these sites could result in a slightly more substantial impact to sensitive natural communities, including riparian vegetation and, and protected waterways. As such, Alternatives B, C, and E, would have a slightly more substantial impact to biological resources than Alternative A due to project activities at the Ignacio Boulevard Site, and Alternative D would have the most substantial impact due to project activities taking place at both the Ignacio Boulevard Site and the Main Gate Road Site. However, although these two project sites are situated near sensitive natural communities and protected waterways, project activities would not directly or indirectly impact these resources, and therefore the impact would remain less than significant.

4.2.5 Cultural Resources

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

Tom Origer & Associates (Origer) prepared a Cultural Resources Study for the project in December 2023 (Barrow 2023). The study was conducted to meet the requirements of CEQA and to identify potential historical resources other than Tribal Cultural Resources, as defined in Public Resources Code 21074 (a)(1)(A)-(B), in the vicinity of the project sites. The study included archival research at the Northwest Information Center, Sonoma State University, examination of the library and files of Origer, Native American contact, and a field survey of the project sites. Information in this section is adapted from and relies on the Cultural Resources Study. The study is available for review at the District by qualified individuals only.

ENVIRONMENTAL SETTING - REGIONAL

Prehistory

The concept of prehistory refers to the period of time before events were recorded in writing and varied worldwide. Because there is no written record, the understanding of California prehistory relies on archaeological materials and oral histories passed down through generations. In the 1930s, archaeologists from Sacramento Junior College and the University of California began piecing together a sequence of cultures primarily based on burial patterns and ornamental artifact from sites in the lower Sacramento Valley (Lillard et al. 1939, Heizer and Fenenga 1939). Their cultural sequence became known as the Central California Taxonomic System, which identified three culture periods termed the Early, Middle, and Late Horizons, but without offering date ranges. Refinement of the Central California Taxonomic System became a chief concern of archaeologists as the century progressed.

It is estimated that native peoples have occupied the region for over 11,000 years, and during that time, shifts took place in their social, political, and ideological regimes (Fredrickson 1973). Early occupants appear to have had an economy based largely on hunting, with limited exchange, and social structures based on the extended family unit. Later, milling technology and an inferred acorn economy were introduced. This diversification of economy appears to be coeval with the development of sedentism and population growth and expansion. Sociopolitical complexity and status distinctions based on wealth are also observable in the archaeological

record, as evidenced by an increased range and distribution of trade goods (e.g., shell beads, obsidian tool stone), which are possible indicators of both status and increasingly complex exchange systems.

These horizons or periods are marked by a transition from large projectile points and milling slabs, indicating a focus on hunting and gathering during the Early Period, to a marine focus during the Middle Period evidenced by the number of shellmounds in the Bay Area. The Middle Period also saw more reliance on acorns and the use of bowl-shaped mortars and pestles. Acorn exploitation increased during the Late Period and the bow and arrow were introduced.

Prehistoric archaeological site indicators expected to be found in the region include but are not limited to obsidian and chert flakes and chipped stone tools; grinding and mashing implements such as slabs and hand-stones, and mortars and pestles; and locally darkened midden soils containing some of the previously listed items plus fragments of bone, shellfish, and fire-affected stones.

Ethnography

Linguists and ethnographers tracing the evolution of languages have found that most of the indigenous languages of the California region belong to one of five widespread North American language groups (the Hokan and Penutian phyla, and the Uto-Aztecan, Algic, and Athabaskan language families). The distribution and internal diversity of four of these groups suggest that their original centers of dispersal were outside, or peripheral to, the core territory of California, that is, the Central Valley, the Sierra Nevada, the Coast Range from Cape Mendocino to Point Conception, and the Southern California coast and islands. Only languages of the Hokan phylum can plausibly be traced back to populations inhabiting parts of this core region during the Archaic period, and there are hints of connections between certain branches of Hokan, such as that between Salinan and Seri, that suggest that at least some of the Hokan languages could have been brought into California by later immigrants, primarily from the Southwest and northwestern Mexico (Golla 2011).

At the time of European settlement, the project sites were included in the territory controlled by the Coast Miwok (Kelly 1978). The Coast Miwok were hunter-gatherers who lived in rich environments that allowed for dense populations with complex social structures. They settled in large, permanent villages about which were distributed seasonal camps and task specific sites. Primary village sites were occupied throughout the year, and other sites were visited in order to procure particular resources that were especially abundant or available only during certain seasons. Sites often were situated near freshwater sources and in ecotones where plant life and animal life were diverse and abundant.

It is believed that members of the Coast Miwok were the Native Americans who met with both Sir Francis Drake and Sebastian Rodriquez Cermeño during their voyages to California. After those two contacts, the Coast Miwok were left alone for nearly 200 years until the construction of the San Francisco Presidio and Mission Dolores in 1776 (Kelly 1978). Even then, Coast Miwok did not enter Mission Dolores in significant numbers until 1800 (Milliken 1995).

In 1823, the mission San Francisco Solano de Sonoma, hereafter referred to as the Sonoma Mission, was established in Sonoma. Governor Arguello was nervous about Russian explorers invading farther south and advised Father Jose Altamira to establish the mission. Approximately 500 neophytes from the missions at San Rafael, San Jose, and San Francisco were sent to the Sonoma Mission. Like at all the missions, neophytes were expected to work in the fields and around the mission building complex. Despite glowing descriptions from many of the fathers,

mission conditions were often poor. In the fall of 1826, the Sonoma Mission was raided by converted and non-converted Native Americans, and parts of it were set on fire. Father Altamira left Sonoma and the mission was abandoned until 1828 when Father Buenaventura Fortuny was transferred. Father Fortuny stayed only three years. Before secularization, three more fathers oversaw the Sonoma Mission (Hoover et al. 2002, Lynch 1997).

When the mission system disbanded and the lands were given to Mexicans instead of the neophytes, Native Americans were either pushed out of the valley, "employed" by families such as the Vallejos, or died of diseases. There were occasions when immigrants showed some measure of kindness to Native Americans, such as Nick Carriger, who willed that "the Indian Vicente and the tribe be allowed to remain on the home place in the western foothills of Sonoma . . . and have the same privileges of wood, water, fishing, and gardening as they enjoyed in my lifetime" (Lynch 1997).

In 1992, Coast Miwok and Southern Pomo groups established the Federated Indians of Graton Rancheria. They were federally recognized in 2000.

History

Historically, the five project sites lie within the Rancho San José which consisted of 1.5 leagues when granted to Ignacio Pacheco by Governor Alvarado in 1840 (Cowan 1977). Pacheco was born in 1808 in San José. He began a military career at the age of 19 and following his service, he settled on the land granted to him (Hoover et al. 1966). Of the lands originally granted to him, 6,659 acres were patented to Pacheco in 1861. Upon his death in 1864, the land was divided among his six children (Hoover et al. 1966).

Review of 19th and 20th-century maps shows that in 1873, and again in 1892, the project sites were within lands retained by the Pacheco family. In 1914, the land surrounding the study area locations was relatively undeveloped and it wasn't until post-World War II that increased development is observed on historical maps (Corps 1942, United States Geological Survey [USGS] 1914, 1954).

Historic period site indicators generally include fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Cultural Resources Study Findings

Results of the records search indicated that there are two villages within a mile of most of the five project site locations, aside from the Ignacio Boulevard Site (Site 2). Review of 19th and early 20th-century maps and aerial photos did not show any buildings within any of the project site locations.

Sunset Parkway Site (Site 1)

Archival research found that the Sunset Parkway Site and Sunset Parkway staging area have not been previously subjected to a cultural resources study. Three studies have been conducted within one-quarter mile of this Sunset Parkway Site, and ten studies have been conducted within one-quarter mile of the staging area. There are no cultural resources documented within one-quarter mile of the Sunset Parkway Site or staging area. An intensive field survey of the Sunset Parkway Site and staging area were conducted by Origer staff on December 13, 2023. Surface examination consisted of intensively walking in transects measuring five meters or less apart, and a hoe was used as needed to expose the ground surface. No archaeological site indicators were observed during the course of the survey.

Ignacio Boulevard Site (Site 2)

Archival research found that the Ignacio Boulevard Site and staging area have been previously subjected to a cultural resources study. Four studies have been conducted within a one-quarter mile of the Ignacio Boulevard Site and staging area. There are four cultural resources documented within one-quarter mile of the Ignacio Boulevard Site and staging area. An intensive field survey of the Ignacio Boulevard Site and staging area were conducted by Origer staff on December 13, 2023. The nearby Arroyo San Jose creek bank was also examined for buried archaeological site indicators. Surface examination consisted of intensively walking in transects measuring five meters or less apart, and a hoe was used as needed to expose the ground surface. No archaeological site indicators were observed during the course of the survey.

Bolling Drive Site (Site 3)

Archival research found that the Bolling Drive Site and both staging areas have been previously subjected to cultural resources study. In addition to the studies that involved fieldwork, there have been several studies related to evaluating the former Hamilton Army Air Field for its eligibility for inclusion on the National Register of Historic Places. Though some of these studies did involve fieldwork, the fieldwork was related to the identification of potentially important buildings and not archaeological resources. Eight studies have been conducted within one-quarter mile of the Bolling Drive Site and staging areas. There are two cultural resources documented within one-quarter mile of the Bolling Drive Site, the closest of the two is located approximately 750 feet away from the site. An intensive field survey of the Bolling Drive Site and staging areas were conducted by Origer staff on December 13, 2023. Surface examination consisted of intensively walking in transects measuring five meters or less apart, and a hoe was used as needed to expose the ground surface. No archaeological site indicators were observed during the course of the survey.

Main Gate Road Site (Site 4)

Archival research found that the Main Gate Road Site and staging area have been previously subjected to cultural resources study. In addition to the studies that involved fieldwork; there have been several studies related to evaluating the former Hamilton Army Air Field for its eligibility for inclusion on the National Register of Historic Places. Though some of these studies did involve fieldwork, the fieldwork was related to the identification of potentially important buildings and not archaeological resources. Sixteen studies have been conducted within a one-quarter mile of the Main Gate Road Site, and thirteen studies have been conducted within one-quarter mile of the staging area. There are three cultural resources documented within one-quarter mile of the Main Gate Road Site and staging area. All three cultural resources are buildings or structures and the closest lies 945 feet away from the Main Gate Road Site. An intensive field survey of the Main Gate Road Site and staging area were conducted by Origer staff on December 13, 2023. Surface examination consisted of intensively walking in transects measuring five meters or less apart, and a hoe was used as needed to expose the ground surface. No archaeological site indicators were observed during the course of the survey.

C Street Site (Site 5)

Archival research found that the C Street Site and staging area have been previously subjected to cultural resources study. In addition to the studies that involved fieldwork; there have been several studies related to evaluating the former Hamilton Army Air Field for its eligibility for inclusion on the National Register of Historic Places. Though some of these studies did involve fieldwork, the fieldwork was related to the identification of potentially important buildings and

not archaeological resources. Sixteen studies have been conducted within one-quarter mile of the C Street Site, and eighteen studies have been conducted within one-quarter mile of the staging area. There are three cultural resources documented within one-quarter mile of the C Street Site and staging area, all of which are buildings or structures. The closest resource lies approximately 690 feet away from the C Street Site. An intensive field survey of the C Street Site and staging area were conducted by Origer staff on December 13, 2023. Surface examination consisted of intensively walking in transects measuring five meters or less apart, and a hoe was used as needed to expose the ground surface. No archaeological site indicators were observed during the course of the survey.

Existing PS Site

Archival research found that the Existing PS Site has not been previously subjected to a cultural resources study. Five studies have been conducted within one-quarter mile of this study area location. There are no cultural resources documented within one-quarter mile of the Existing PS Site. An intensive field survey of the Existing PS Site and staging area were conducted by Origer staff on December 13, 2023. Surface examination consisted of intensively walking in transects measuring five meters or less apart, and a hoe was used as needed to expose the ground surface. No archaeological site indicators were observed during the course of the survey.

REGULATORY BACKGROUND

Cultural Resources

As set forth in Section 5024.1(c) of the Public Resources Code for a cultural resource to be deemed "important" under CEQA and thus eligible for listing on the California Register of Historical Resources (California Register), it must meet at least one of the following criteria:

1. is associated with events that have made a significant contribution to the broad patterns of California History and cultural heritage; or
2. is associated with the lives of persons important to our past; or
3. embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possess high artistic value; or
4. has yielded or is likely to yield, information important to prehistory or history.

Historic-era structures older than 50 years are most commonly evaluated in reference to Criterion 1 (important events), Criterion 2 (important persons) or Criterion 3 (architectural value). To be considered eligible under these criteria the property, must retain sufficient integrity to convey its important qualities. Integrity is judged in relation to seven aspects including: location, design, setting, materials, workmanship, feeling, and association. Prehistoric and historic-era archaeological resources are commonly evaluated with regard to Criterion 4 (research potential).

Guidelines for the implementation of CEQA define procedures, types of activities, persons, and public agencies required to comply with CEQA. Section 15064.5(b) prescribes that project effects that would "cause a substantial adverse change in the significance of an historical resource" are significant effects on the environment. Substantial adverse changes include both physical changes to the historical resource, or to its immediate surroundings.

Archaeological Resources

Section 21083.2 of the CEQA guidelines also defines "unique archaeological resources" as "any 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 show that there is a demonstrable public interest in that information.
- Has a special and particular quality, such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person."

This definition is equally applicable to recognizing “a unique paleontological resource or site.” CEQA Section 15064.5 (a)(3)(D), which indicates “generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history,” provides additional guidance.

DISCUSSION OF IMPACTS

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

Alternative A – Less than Significant Impact with Mitigation Incorporated

There are no cultural resources documented within one-quarter mile of the Sunset Parkway Site, Existing PS Site, or the staging area on Sunset Parkway. No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Sunset Parkway Site, the Existing PS Site, and the staging area on Sunset Parkway is very low (Barrow, 2023). The Cultural Resources Study concluded that no archaeological recommendations are warranted for these sites; however, as standard practice, the project would implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources on the project sites. The impact would be less than significant with mitigation incorporated.

Alternative B - Less than Significant Impact with Mitigation Incorporated

There are four cultural resources documented within one-quarter mile of the Ignacio Boulevard Site and staging area, and no resources documented within one-quarter mile of the Existing PS Site and staging area on Sunset Parkway. No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Existing PS Site and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Cultural Resources Study concluded that no recommendations are warranted for the Existing PS Site, Ignacio Boulevard Site and staging area, and Sunset Parkway staging area; however, as standard practice, the project would implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources on the project sites. The impact would be less than significant with mitigation incorporated.

Alternative C - Less than Significant Impact with Mitigation Incorporated

There are two cultural resources documented within one-quarter mile of the Bolling Drive Site

and staging areas, four cultural resources documented within one-quarter mile of the Ignacio Boulevard Site and staging area, and no resources documented within one-quarter mile of the Bolling Drive Site and Sunset Parkway staging area. No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Bolling Drive Site and staging areas, the Existing PS Site, and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site and staging area has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Cultural Resources Study concluded that no recommendations are warranted for the Bolling Drive Site and staging areas, Existing PS Site, Ignacio Boulevard Site and staging area, and Sunset Parkway staging area; however, as standard practice, the project would implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources on the project sites. The impact would be less than significant with mitigation incorporated.

Alternative D - Less than Significant Impact with Mitigation Incorporated

There are three cultural resources documented within one-quarter mile of the Main Gate Road Site and staging area, four cultural resources documented within one-quarter mile of the Ignacio Boulevard Site and staging area, and no resources documented within one-quarter mile of the Existing PS Site and Sunset Parkway staging area. No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Existing PS Site and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site and staging area has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Cultural Resources Study concluded that no recommendations are warranted for the Existing PS Site, Ignacio Boulevard Site and staging area, and Sunset Parkway staging area; however, as standard practice, the project would implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources on the project sites.

The Main Gate Road Site and staging area was determined to have a high potential for buried archaeological resources (Barrow 2023). As recommended by the Cultural Resources Study, in addition to Mitigation Measure CUL-1, project work at the Main Gate Road Site will adhere to Mitigation Measure CUL-2. Mitigation Measure CUL-2 requires that construction crews receive an archaeological training session prior to the commencement of excavation work, and that an archaeologist who meets the Secretary of the Interiors Standards for Archaeology monitor all excavation work on-site. As the Main Gate Road Site staging area will primarily be used for storing equipment, Mitigation Measure CUL-2 is not applicable to the portion of the staging area outside of the site. With implementation of Mitigation Measures CUL-1 and CUL-2, the project would not cause a change in the significance of a historical or archaeological resource. The impact would be less than significant with mitigation incorporated.

Alternative E – Less than Significant Impact with Mitigation Incorporated

There are three cultural resources documented within one-quarter mile of the C Street Site and staging area, four cultural resources documented within one-quarter mile of the Ignacio Boulevard Site and staging area, and no resources documented within one-quarter mile of the Existing PS Site and Sunset Parkway staging area. No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried

archaeological resources to occur on the Existing PS Site and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Cultural Resources Study concluded that no recommendations are warranted for the Existing PS Site, Ignacio Boulevard Site and staging area, and Sunset Parkway staging area; however, as standard practice, the project would implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources on the project sites.

The C Street Site was determined to have a high potential for buried archaeological resources (Barrow 2023). As recommended by the Cultural Resources Study, in addition to Mitigation Measure CUL-1, project work at the C Street Site will adhere to Mitigation Measure CUL-2. Mitigation Measure CUL-2 requires that construction crews receive an archaeological training session prior to the commencement of excavation work, and that an archaeologist who meets the Secretary of the Interiors Standards for Archaeology monitor all excavation work on-site. As the C Street Site staging area will primarily be used for storing equipment, Mitigation Measure CUL-2 is not applicable to the portion of the staging area outside of the site. With implementation of Mitigation Measures CUL-1 and CUL-2, the project would not cause a change in the significance of a historical or archaeological resource. The impact would be less than significant with mitigation incorporated.

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

Alternative A – Less than Significant Impact with Mitigation Incorporated

No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Sunset Parkway Site, the Existing PS Site, and the staging area on Sunset Parkway is very low (Barrow, 2023). The Cultural Resources Study concluded that no archaeological recommendations are warranted for these sites; however, as standard practice, the project would implement Mitigation Measure CUL-3 pertaining to the accidental discovery of buried human remains on the project sites. Implementation of Mitigation Measure CUL-3 would ensure that the project would not disturb interred human remains. The impact would be less than significant with mitigation incorporated.

Alternative B – Less than Significant Impact with Mitigation Incorporated

No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Existing PS Site and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Cultural Resources Study concluded that no recommendations are warranted for the Existing PS Site, Ignacio Boulevard Site and staging area, and Sunset Parkway staging area; however, as standard practice, the project would implement Mitigation Measure CUL-3 pertaining to the accidental discovery of buried human remains on the project sites. Implementation of Mitigation Measure CUL-3 would ensure that the project would not disturb interred human remains. The impact would be less than significant with mitigation incorporated.

Alternative C - Less than Significant Impact with Mitigation Incorporated

No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Bolling Drive Site, the Existing PS Site, and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Cultural Resources Study concluded that no recommendations are warranted for the Bolling Drive Site and staging areas, Existing PS Site, Ignacio Boulevard Site and staging area, and Sunset Parkway staging area; however, as standard practice, the project would implement Mitigation Measure CUL-3 pertaining to the accidental discovery of buried human remains on the project sites. Implementation of Mitigation Measure CUL-3 would ensure that the project would not disturb interred human remains. The impact would be less than significant with mitigation incorporated.

Alternative D - Less than Significant Impact with Mitigation Incorporated

No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Existing PS Site and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The Main Gate Road Site was determined to have a high potential for buried archaeological resources (Barrow 2023). As standard practice, the project would implement Mitigation Measure CUL-3 pertaining to the accidental discovery of buried human remains on the project sites. Implementation of Mitigation Measure CUL-3 would ensure that the project would not disturb interred human remains. The impact would be less than significant with mitigation incorporated.

Alternative E – Less than Significant Impact with Mitigation Incorporated

No buried archaeological site indicators were observed on any site during the field survey performed by Origer staff. The potential for buried archaeological resources to occur on the Existing PS Site and Sunset Parkway staging area is very low (Barrow, 2023). The Ignacio Boulevard Site has a high potential for buried archaeological resources; however, examination of the nearby Arroyo San Jose did not show that there are any buried soil layers that would suggest a buried archaeological site is present at this site (Barrow 2023). The C Street Site was determined to have a high potential for buried archaeological resources (Barrow 2023). As standard practice, the project would implement Mitigation Measure CUL-3 pertaining to the accidental discovery of buried human on the project sites. Implementation of Mitigation Measure CUL-3 would ensure that the project would not disturb interred human remains. The impact would be less than significant with mitigation incorporated.

MITIGATION MEASURES

Mitigation Measure CUL-1: Buried Archaeological Resources

In keeping with the CEQA guidelines, if archaeological remains are uncovered, work at the place of discovery should be halted immediately until a qualified archaeologist can evaluate the finds (§15064.5 [f]). Prehistoric archaeological site indicators include: obsidian and chert flakes and chipped stone tools; grinding and mashing implements (e.g., slabs and handstones, and mortars

and pestles); bedrock outcrops and boulders with mortar cups; and locally darkened midden soils. Midden soils may contain a combination of any of the previously listed items with the possible addition of bone and shell remains, and fire-affected stones. Historic period site indicators generally include: fragments of glass, ceramic, and metal objects; milled and split lumber; and structure and feature remains such as building foundations and discrete trash deposits (e.g., wells, privy pits, dumps).

Mitigation Measure CUL-2: Archaeological Training and Excavation Monitoring

The project construction crew shall receive an archaeological training session prior to the commencement of any excavation work. In addition, excavation work shall be monitored by an archaeologist who meets or is overseen by an archaeologist who meets the Secretary of the Interiors Standards for Archaeology.

Mitigation Measure CUL-3: Human Remains

If human remains are encountered, excavation or disturbance of the location must be halted in the vicinity of the find, and the county coroner contacted. If the coroner determines the remains are Native American, the coroner will contact the Native American Heritage Commission (NAHC). The NAHC will identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent makes recommendations regarding the treatment of the remains with appropriate dignity.

CONCLUSION

Under Alternatives A through E, impacts related to cultural resources could be mitigated to a less-than-significant level with the implementation of mitigation measures. Alternative A would have the least significant impact on cultural resources because the project sites have a very low potential for buried archaeological resources. Alternatives B and C would have a slightly more substantial impact than Alternative A due to the high potential of the Ignacio Boulevard Site for buried archaeological resources. Alternatives D and E would have the potential for the most significant impact on cultural resources and would require one additional mitigation measure (CUL-2) due to the high potential of the Main Gate Road Site and C Street Site for buried archaeological resources. However, impacts to cultural resources under Alternative D and E would still be reduced to a less-than-significant level with the implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3.

4.2.6 Energy

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

ENVIRONMENTAL SETTING

Power in the City is supplied by Pacific Gas & Electric (PG&E) and Marin Clean Energy (MCE). MCE is a joint powers authority among Marin jurisdictions (cities and the County) that the City joined in 2012. Prior to the City's participation in MCE, power was solely provided by PG&E. In April, July, and August 2012, MCE sent opt-out notices to Novato households. All residents who did not opt-out were automatically enrolled in MCE. Currently, Novato residents have the choice of receiving energy from PG&E or choosing between three MCE energy service plans (City of Novato "Marin Clean Energy").

REGULATORY BACKGROUND

City of Novato General Plan

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the City's General Plan contains the following relevant policies related to energy:

> **Policy ES 25: Energy and Water Conservation.** Increase energy and water efficiency and conservation in City buildings, equipment and operations. Promote energy and water conservation and building upgrades to the community.

City of Novato Climate Change Action Plan

The City's CCAP was adopted in December 2009 and is currently in the process of being updated. The CCAP serves as a culmination of an array of all related sustainability initiatives taken by the City and provides a coordinated strategy and direction for all related efforts to follow (City of Novato 2009).

DISCUSSION OF IMPACTS

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

Alternatives A through E - Less than Significant Impact

The use of equipment and vehicles during project construction would require the use of energy resources. The construction process would be designed to be efficient to avoid excess monetary costs. Specifically, equipment and fuel would not be used wastefully during construction due to the added expense associated with renting, maintaining, and fueling equipment. As such, energy and fuel would not be wasted or used inefficiently by construction equipment and vehicles.

Project operation would not result in wasteful, inefficient, or unnecessary consumption of energy resources. All proposed new PS would be serviced by PG&E and would include electrical components such as a main service-entrance switchboard, facility standby power provisions, a Motor Control Center and Variable Frequency Drive Equipment. All electrical components would be built in accordance with current standards and specifications for PS equipment, including PG&E and Electric Utility Service Equipment Requirements and standards (F&L 2023). Each proposed new PS would include a non-electrical heating, ventilation, and air conditioning (HVAC) system to cool the interior of the building from heat generated by the electrical equipment. The HVAC system would be designed to be energy efficient and would not constitute a wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, the project's impacts related to wasteful, inefficient, or unnecessary consumption of energy resources would be less than significant.

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

Alternatives A through E – No Impact

The proposed project is within the planning area of the City's CCAP, which contains goals and mitigation measures for the City to implement in order to comply with Statewide mandates for GHG emissions reductions and energy efficiency. The District is a self-permitting agency and is not required to comply with City policies, programs, and ordinances; however, the project would not result in an inefficient or wasteful use of energy resources, and therefore would not conflict with the CCAP or goals of the City's General Plan pertaining to energy resources. No impact would occur.

CONCLUSION

Project activities under A through E would result in a less than significant impact related to energy resources per the CEQA Guidelines. Alternatives C, D, and E would result in a more substantial impact related to the use of energy resources because two new PS would be constructed rather than one. The construction of two new PS under Alternatives C, D, and E would take approximately eight more months than constructing one new PS under Alternative A or B. Alternative A would have the least substantial impact related to the use of energy resources because it would require less vehicle trips than any other Alternative. However, these impacts would be less than significant.

4.2.7 Geology and Soils

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i)	Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☐	☒	☐
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, creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

ENVIRONMENTAL SETTING - REGIONAL

The project sites lie within the Coast Ranges geomorphic province (California Geological Survey [CGS] 2022). The Coast Ranges province runs almost directly parallel to the San Andreas Fault, beginning in the Central California Coast and extending north to the State boundary. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay. The northern Coast Ranges, in which the project sites are located, are dominated by irregular, knobby, landslide-topography of the Franciscan Complex (CGS 2002). The northern and western portion of Novato is underlain by Franciscan assemblages consisting of a mixture of metamorphosed sandstone, shale, volcanics, serpentine, and chert. The eastern area is underlain by Great Valley sequence rock, which is mostly shale that has been deposited in a deep-marine setting, with thick bodies of sandstone and other conglomerate (City of Novato 2020b).

The San Francisco Bay Region is situated on a plate boundary marked by the San Andreas Fault system, which forms the tectonic boundary between the Pacific Plate and the North American Plate. The region consists of several northwest trending active and potentially active faults. Movement along this plate boundary occurs across a system of strike-slip, right-lateral, parallel, and sub-parallel faults. In the project area, these faults include the San Andrea, Burdell Mountain, Tolay, Rodgers Creek, and Hayward fault zones (City of Novato 2020b). Various other pre-Quaternary faults are located in the project area (California Department of Conservation [CDC] 2015).

ENVIRONMENTAL SETTING – LOCAL

Sunset Parkway Site (Site 1)

The Sunset Parkway Site is underlain by Early to late Pleistocene deposits, undivided, which consists of alluvial fan, stream terrace, basin, and channel deposits (Clahan et al. 2002). The Sunset Parkway Site and staging area are underlain by soils of the Xerorthents – Urban land complex with zero to nine percent slopes (United States Department of Agriculture [USDA] National Resource Conservation Service [NRCS] 2019). This unit is composed of 45 percent xerorthents and similar soils, 40 percent urban land, and 14 percent minor components. Two pre-Quaternary faults are located within one mile of the Sunset Parkway Site, including one approximately 0.27 miles north and one 0.65 miles east of the site (CDC 2015).

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site is underlain by Holocene alluvium, undivided, which includes alluvium deposited on fans, terraces, or in basins. Soils typically consist of gravel, sand, and silt that are poorly to moderately sorted (Clahan et al. 2002). The Ignacio Boulevard Site and staging area are underlain by soils of the Xerorthents – Urban land complex with zero to nine percent slopes (USDA NRCS 2019). Two pre-Quaternary faults are located within one mile of the Ignacio Boulevard Site, including one approximately 0.43 miles northeast and one approximately 0.75 miles southwest (CDC 2015).

Bolling Drive Site (Site 3)

The Bolling Drive Site is underlain by Franciscan Complex mélange, which consists of a tectonic mixture of masses of resistant rock types including sandstone, altered mafic volcanic rock (greenstone), chert, serpentinite, and exotic metamorphic rocks embedded in a sheared, shaley matrix (Clahan et al. 2002). The Bolling Drive Site and staging area are underlain by soils of the Saurin-urban land-Bonnydoon complex with 30 to 50 percent slopes. This unit is composed of 30

percent Saurin and similar soils, 25 percent urban land, 20 percent Bonnydoon and similar soils, and 21 percent minor components. Two pre-Quaternary faults are located within one mile of the Bolling Drive Site, including one approximately 0.40 miles south and one approximately 0.70 miles west (CDC 2015).

Main Gate Road Site (Site 4)

The Main Gate Road Site is underlain by Holocene alluvium, undivided, which includes alluvium deposited on fans, terraces, or in basins. Soils typically consist of gravel, sand, and silt that are poorly to moderately sorted (Clahan et al. 2002). The Main Gate Road Site and staging area are underlain by soils of the Xerorthents – Urban land complex with zero to nine percent slopes (USDA NRCS 2019). Two pre-Quaternary faults are located within one mile of the Main Gate Road Site, including one approximately 0.42 miles west and one approximately 0.70 miles south (CDC 2015).

C Street Site (Site 5)

The C Street Site is underlain by Holocene alluvium, undivided, which includes alluvium deposited on fans, terraces, or in basins. Soils typically consist of gravel, sand, and silt that are poorly to moderately sorted (Clahan et al. 2002). The C Street Site and staging area are underlain by soils of the Xerorthents – Urban land complex with zero to nine percent slopes (USDA NRCS 2019). Two pre-Quaternary faults are located within one mile of the C Street Site, including one approximately 0.55 miles west and one approximately 0.70 miles south (CDC 2015).

Existing PS Site

The Existing PS Site is underlain by Early to late Pleistocene deposits, undivided, which consists of alluvial fan, stream terrace, basin, and channel deposits (Clahan et al. 2002). The C Street Site and staging area are underlain by soils of the Xerorthents – Urban land complex with zero to nine percent slopes (USDA NRCS 2019). The nearest trace of the Burdell Mountain Fault zone is located approximately 1.90 miles northeast of the Existing PS Site. Two pre-Quaternary faults are located within one mile of the Existing PS Site, including one approximately 0.26 miles northwest and one 0.60 miles east of the site (CDC 2015).

DISCUSSION OF IMPACTS

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

None of the project sites are located within a fault zone or on a fault, but the active faults and potentially active faults are located within the vicinity of the project sites. The nearest potentially active fault trace is the Burdell Mountain Fault. Other close major faults are the San Andreas, Rodgers Creek, and Hayward faults. These faults are capable of producing minor to major earthquakes; therefore, there is potential for the project sites to experience high intensity ground shaking. However, the likelihood of surface rupture occurring from active faulting at the sites is small.

Alternative A – Less than Significant Impact

The project sites do not lie within a State mandated Alquist-Priolo Earthquake Fault Zone, as

identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (CGS 2023). The nearest pre-Quaternary faults are located approximately 0.27 miles north of the Sunset Parkway Site and 0.26 miles northwest of the Existing PS Site. For land use planning purposes, pre-Quaternary faults are presumed to be effectively inactive per the Alquist-Priolo Act and do not require further investigation. This is not meant to imply that inactive fault traces will not rupture, only that they have not been shown to have ruptured for at least 1.6 million years and that the probability of fault rupture is low.

Although unlikely, rupture of the nearby Burdell Mountain Fault or other pre-Quaternary faults could pose potential risks to construction workers on project sites. The project contractor would comply with all federal Occupational Safety and Health Administration (OSHA) and California OSHA (Cal/OSHA) requirements related to construction worker safety, which would reduce risks associated with fault rupture during construction to a less-than-significant level. Operation of the proposed project would not cause substantial effects associated with rupture of a known earthquake fault. Therefore, potential direct or indirect impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, and/or strong seismic ground shaking, would be less than significant.

Alternative B – Less than Significant Impact

The project sites do not lie within a State mandated Alquist-Priolo Earthquake Fault Zone, as identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (CGS 2023). The nearest pre-Quaternary faults are located approximately 0.43 miles northeast of the Ignacio Boulevard Site and 0.26 miles northwest of the Existing PS Site. For land use planning purposes, pre-Quaternary faults are presumed to be effectively inactive per the Alquist-Priolo Act and do not require further investigation. This is not meant to imply that inactive fault traces will not rupture, only that they have not been shown to have ruptured for at least 1.6 million years and that the probability of fault rupture is low.

Although unlikely, rupture of the nearby Burdell Mountain Fault or other pre-Quaternary faults could pose potential risks to construction workers on project sites. The project contractor would comply with all federal OSHA and Cal/OSHA requirements related to construction worker safety, which would reduce risks associated with fault rupture during construction to a less than significant level. Operation of the proposed project would not cause substantial effects associated with rupture of a known earthquake fault. Therefore, potential direct or indirect impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, and/or strong seismic ground shaking, would be less than significant.

Alternative C – Less than Significant Impact

The project sites do not lie within a State mandated Alquist-Priolo Earthquake Fault Zone, as identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (CGS 2023). The nearest pre-Quaternary faults are located approximately 0.40 miles south of the Bolling Drive Site, approximately 0.43 miles northeast of the Ignacio Boulevard Site, and 0.26 miles northwest of the Existing PS Site. For land use planning purposes, pre-Quaternary faults are presumed to be effectively inactive per the Alquist-Priolo Act and do not require further investigation. This is not meant to imply that inactive fault traces will not rupture, only that they have not been shown to have ruptured for at least 1.6 million years and that the probability of fault rupture is low.

Although unlikely, rupture of the nearby Burdell Mountain Fault or other pre-Quaternary faults could pose potential risks to construction workers on project sites. The project contractor would comply with all federal OSHA and Cal/OSHA requirements related to construction worker safety, which would reduce risks associated with fault rupture during construction to a less than significant level. Operation of the proposed project would not cause substantial effects associated with rupture of a known earthquake fault. Therefore, potential direct or indirect impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, and/or strong seismic ground shaking, would be less than significant.

Alternative D – Less than Significant Impact

The project sites do not lie within a State mandated Alquist-Priolo Earthquake Fault Zone, as identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (CGS 2023). The nearest pre-Quaternary fault is located approximately 0.42 miles west of the Main Gate Road Site, approximately 0.43 miles northeast of the Ignacio Boulevard Site, and 0.26 miles northwest of the Existing PS Site. For land use planning purposes, pre-Quaternary faults are presumed to be effectively inactive per the Alquist-Priolo Act and do not require further investigation. This is not meant to imply that inactive fault traces will not rupture, only that they have not been shown to have ruptured for at least 1.6 million years and that the probability of fault rupture is low.

Although unlikely, rupture of the nearby Burdell Mountain Fault or other pre-Quaternary faults could pose potential risks to construction workers on project sites. The project contractor would comply with all federal OSHA and Cal/OSHA requirements related to constrution worker safety, which would reduce risks associated with fault rupture during construction to a less than significant level. Operation of the proposed project would not cause substantial effects associated with rupture of a known earthquake fault. Therefore, potential direct or indirect impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, and/or strong seismic ground shaking, would be less than significant.

Alternative E – Less than Significant Impact

The project sites do not lie within a State mandated Alquist-Priolo Earthquake Fault Zone, as identified by the most recent Alquist-Priolo Fault Zoning Map issued by the State Geologist (CGS 2023). The nearest pre-Quaternary fault is located approximately 0.55 miles west of the C Street Site, approximately 0.43 miles northeast of the Ignacio Boulevard Site, and 0.26 miles northwest of the Existing PS Site. For land use planning purposes, pre-Quaternary faults are presumed to be effectively inactive per the Alquist-Priolo Act and do not require further investigation. This is not meant to imply that inactive fault traces will not rupture, only that they have not been shown to have ruptured for at least 1.6 million years and that the probability of fault rupture is low.

Although unlikely, rupture of the nearby Burdell Mountain Fault or other pre-Quaternary faults could pose potential risks to construction workers on project sites. The project contractor would comply with all federal OSHA and Cal/OSHA requirements related to constrution worker safety, which would reduce risks associated with fault rupture during construction to a less than significant level. Operation of the proposed project would not cause substantial effects associated with rupture of a known earthquake fault. Therefore, potential direct or indirect impacts, including the risk of loss, injury, or death involving rupture of a known earthquake fault

as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, and/or strong seismic ground shaking, would be less than significant.

a-ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Strong seismic ground shaking?

Alternatives A through E - Less than Significant Impact

The project sites have the potential to endure strong seismic ground shaking from earthquakes that could occur on active and potentially active faults in the region. The project contractor would comply with all federal OSHA and Cal/OSHA requirements related to constrution worker safety, which would reduce risks associated with strong seismic ground shaking during construction to a less than significant level. Operation of the proposed project under Alternatives A through E would not cause substantial effects associated with strong seismic ground shaking. The new PS would be constructed in accordance with applicable building standards which would prevent substantial adverse effects, including loss, injury, or death, associated with strong seismic ground shaking during project operation. The impact of the proposed project related to strong seismic ground shaking would be less than significant.

a-iii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: Seismic-related ground failure, including liquefaction?

Alternative A – Less than Significant Impact

Liquefaction primarily occurs in relatively loose, saturated, cohesionless soils that lose their strength and become incapable of supporting the weight of overlying soils or structures when subject to earthquake stresses. The Sunset Parkway Site and Existing PS Site are not located within a Liquefaction Zone of an earthquake zone of required investigation (CGS 2023). The Existing PS Site is located in an area of very low liquefaction potential; however, the staging area on Sunset Parkway is situated in an area of high liquefaction potential as identified by the County (Cal Engineering & Geology [CE&G] 2023; County of Marin 2020). No construction work would occur at the staging area, it would only be used for storage of equipment and materials. In addition, development under the proposed project would be required to comply with the California Building Code (CBC), which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand potential instances of liquefaction. As such, the project would not cause adverse effects including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. The impact would be less than significant.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site and Existing PS Site are not located within a liquefaction zone of an earthquake zone of required investigation (CGS 2023). The Ignacio Boulevard Site has a moderate liquefaction susceptibility, with the exception of soils along the Arroyo San Jose Creek, which have a high liquefaction susceptibility (CE&G 2023). The Existing PS Site is located within an area of very low liquefaction potential; however, the staging area on Sunset Parkway is situated in an area of high liquefaction potential as identified by the County (CG&E 2023; County of Marin 2020). No construction work would occur at the staging area, it would only be used for storage of equipment and materials. Development under the proposed project would be required to comply with the CBC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand potential instances of liquefaction. Compliance with the requirements of the CBC would reduce this impact during project operation

to a less than significant level. As such, the project would not cause adverse effects including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Bolling Drive Site, Ignacio Boulevard Site, and Existing PS Site are not located within a Liquefaction Zone of an earthquake zone of required investigation (CGS 2023). The Bolling Drive Site has a very low liquefaction susceptibility (CE&G 2023). The Ignacio Boulevard Site has a moderate liquefaction susceptibility, with the exception of soils along the Arroyo San Jose Creek, which have a high liquefaction susceptibility. The Existing PS Site is located within an area of very low liquefaction potential; however, the staging area on Sunset Parkway is situated in an area of high liquefaction potential as identified by the County (CE&G 2023; County of Marin 2020). No construction work would occur at the staging area, it would only be used for storage of equipment and materials. Development under the proposed project would be required to comply with the CBC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand potential instances of liquefaction. Compliance with the requirements of the CBC would reduce this impact during project operation to a less than significant level. As such, the project would not cause adverse effects including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Main Gate Road Site, Ignacio Boulevard Site, and Existing PS Site are not located within a Liquefaction Zone of an earthquake zone of required investigation (CGS 2023). The Main Gate Road Site is situated in an area of moderate liquefaction susceptibility (Witter et al. 2006). The Ignacio Boulevard Site has a moderate liquefaction susceptibility, with the exception of soils along the Arroyo San Jose Creek, which have a high liquefaction susceptibility (CE&G 2023). The Existing PS Site is located within an area of very low liquefaction potential; however, the staging area on Sunset Parkway is situated in an area of high liquefaction potential as identified by the County (CE&G 2023; County of Marin 2020). No construction work would occur at the staging area, it would only be used for storage of equipment and materials. Development under the proposed project would be required to comply with the CBC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand potential instances of liquefaction. Compliance with the requirements of the CBC would reduce this impact during project operation to a less than significant level. As such, the project would not cause adverse effects including the risk of loss, injury, or death due to seismic-related ground failure, including liquefaction. The impact would be less than significant.

Alternative E – Less than Significant Impact

The C Street Site, Ignacio Boulevard Site, and Existing PS Site are not located within a Liquefaction Zone of an earthquake zone of required investigation (CGS 2023). The C Street Site is situated in an area of moderate liquefaction potential (Witter et al. 2006). The Ignacio Boulevard Site has a moderate liquefaction susceptibility, with the exception of soils along the Arroyo San Jose Creek, which have a high liquefaction susceptibility (CE&G 2023). The Existing PS Site is located within an area of very low liquefaction potential; however, the staging area on Sunset Parkway is situated in an area of high liquefaction potential as identified by the County (CE&G 2023; County of Marin 2020). No construction work would occur at the staging area, it would only be used for storage of equipment and materials. Development under the proposed project would be required to comply with the CBC, which would ensure that expansive soils are

remediated or that foundations and structures are engineered to withstand potential instances of liquefaction. Compliance with the requirements of the CBC would reduce this impact during project operation to a less than significant level. As such, the project would not cause adverse effects including the risk of loss, injury, or death involving rupture of a known earthquake fault. The impact would be less than significant.

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

Alternative A – No Impact

The Sunset Parkway Site and Existing PS Site are not located within a Landslide Zone of an earthquake zone of required investigation (CGS 2023). The project sites are located in relatively flat areas and are not near any steep slopes, and therefore, landsliding is unlikely to occur on or within the site vicinities (CE&G 2023) The sites are mapped as "surficial deposits" and are not categorized as being at risk of landslide (County of Marin 2020). Therefore, Alternative A would not directly or indirectly cause substantial adverse effects related to landslides. No impact would occur.

Alternative B – No Impact

The Ignacio Boulevard Site and Existing PS Site are not located within a Landslide Zone of an earthquake zone of required investigation (CGS 2023). The project sites are located in relatively flat areas and are not near any steep slopes, and therefore, landsliding is unlikely to occur on or within the site vicinities (CG&E 2023). The sites are mapped as "surficial deposits" and are not categorized as being at risk of landslide (County of Marin 2020). Therefore, Alternative B would not directly or indirectly cause substantial adverse effects related to landslides. No impact would occur.

Alternative C – Less than Significant Impact

The Bolling Drive Site, Ignacio Boulevard Site, and Existing PS Site are not located within a Landslide Zone of an earthquake zone of required investigation (CGS 2023). The Bolling Drive Site is located on a moderately sloping hillside underlain by shallow bedrock. Althrough shallow sliding of the surface soils is possible, negative impacts to the proposed PS due to landsliding at this site is unlikely (CE&G 2023). The Ignacio Boulevard Site and Existing PS Site are situated in relatively flat areas and therefore, landsliding is unlikely to occur on or within the site vicinities (CE&G 2023). The sites are mapped as "surficial deposits" and are not categorized as being at risk of landslide (County of Marin 2020). Development under the proposed project would be required to comply with the CBC and the project would not include high-intensity ground disturbing activities, and is therefore not likely to directly cause a landslide to occur. As such, Alternative C would not directly or indirectly cause substantial adverse effects related to landslides. The impact would be less than significant.

Alternative D – No Impact

The Main Gate Road Site, Ignacio Boulevard Site, and Existing PS Site are not located within a Landslide Zone of an earthquake zone of required investigation (CGS 2023). The project sites are located in relatively flat areas and are not near any steep slopes. The sites are mapped as "surficial deposits" and are not categorized as being at risk of landslide (County of Marin 2020). Therefore, Alternative D would not directly or indirectly cause substantial adverse effects related to landslides. No impact would occur.

Alternative E – No Impact

The C Street Site, Ignacio Boulevard Site, and Existing PS Site are not located within a Landslide Zone of an earthquake zone of required investigation (CGS 2023). The project sites are located in relatively flat areas and are not near any steep slopes. The sites are mapped as "surficial deposits" and are not categorized as being at risk of landslide (County of Marin 2020). Therefore, Alternative E would not directly or indirectly cause substantial adverse effects related to landslides. No impact would occur.

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

Alternative A – Less than Significant Impact with Mitigation Incorporated

The Sunset Parkway Site and Existing PS Site are situated in relatively flat, developed medians within Sunset Parkway, and therefore are not highly susceptible to erosion. In addition, soils on the Sunset Parkway Site and Existing PS Site are assumed to be composed of engineered fill, and therefore, substantial loss of native soils would not occur. During construction, activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project sites. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. As described in Section 4.2.10, Hydrology and Water Quality, the District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall be prepared by a registered professional engineer and include BMPs to minimize siltation, sedimentation, and erosion. After construction is finished, the disturbed areas of the project sites will be developed with ornamental landscaping, which will minimize erosion during rainfall events. Implementation of Mitigation Measure HYDRO-1 would ensure that the project would not cause substantial erosion or loss of topsoil. The impact would be less than significant with mitigation incorporated.

Alternative B – Less than Significant Impact with Mitigation Incorporated

The Ignacio Boulevard Site is located in an open space area that is primarily developed with ornamental landscaping. The Existing PS Site is situated in a developed median within Sunset Parkway, which is assumed to be underlain by soils composed of engineered fill (non-native). Both sites are located in relatively flat areas, and thus are not highly susceptible to erosion. During construction, activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project sites. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. As described in Section 4.2.10, Hydrology and Water Quality, the District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall be prepared by a registered professional engineer and include BMPs to minimize siltation, sedimentation, and erosion. After construction is finished, the disturbed areas of the project sites will be developed with ornamental landscaping, which will minimize erosion during rainfall events. Implementation of Mitigation Measure HYDRO-1 would ensure that the project would not cause substantial erosion or loss of topsoil. The impact would be less than significant with mitigation incorporated.

Alternative C – Less than Significant Impact with Mitigation Incorporated

The Ignacio Boulevard Site and Bolling Drive Site are located in open space areas that are primarily developed with ornamental landscaping. The Existing PS Site is situated in a developed median within Sunset Parkway, which is assumed to be underlain by soils composed of engineered fill (non-native). Both the Ignacio Boulevard Site and Existing PS Site are located in

relatively flat areas, and thus are not highly susceptible to erosion. The Bolling Drive Site is situated on a moderately sloping hillside, and may be more susceptible to erosion due to the downstream movement of surface runoff water which could carry on-site sediment into nearby waterways. During construction, activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project sites. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. As described in Section 4.2.10, Hydrology and Water Quality, the District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall be prepared by a registered professional engineer and include BMPs to minimize siltation, sedimentation, and erosion. After construction is finished, the disturbed areas of the project sites will be developed with ornamental landscaping, which will minimize erosion during rainfall events.

The total project footprint under Alternative C for the Existing PS Site, Ignacio Boulevard Site, and Bolling Drive Site combined would be over once acre. As such, a Stormwater Pollution Prevention Plan (SWPPP) would be required in order to comply with requirements of the federal Construction General Permit, which is required for projects that disturb over one acre of ground. The SWPPP will contain measures to control surface runoff, reduce erosion, and minimize the potential for sediment to leave the project sites and enter waterways during construction activities. The District would be responsible for preparing the SWPPP prior to the start of ground disturbing activities at any project, and the measures contained in the SWPPP would be implemented and enforced throughout project construction. In addition to implementing Mitigation Measure HYDRO-1, the SWPPP would ensure that the project would not cause substantial erosion or loss of topsoil. The impact would be less than significant with mitigation incorporated.

Alternative D – Less than Significant Impact with Mitigation Incorporated

The Main Gate Road Site and Ignacio Boulevard Site are located in an open space area developed with ornamental landscaping. The Existing PS Site is situated in a developed median within Sunset Parkway, which is assumed to be underlain by soils composed of engineered fill (non-native). All sites are located in relatively flat areas, and thus are not highly susceptible to erosion. During construction, activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project sites. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. As described in Section 4.2.10, Hydrology and Water Quality, the District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall be prepared by a registered professional engineer and include BMPs to minimize siltation, sedimentation, and erosion. After construction is finished, the disturbed areas of the project sites will be developed with ornamental landscaping, which will minimize erosion during rainfall events.

The total project footprint under Alternative D for the Existing PS Site, Ignacio Boulevard Site, and Main Gate Road Site combined would be over once acre. As such, a SWPPP would be required in order to comply with requirements of the federal Construction General Permit, which is required for projects that disturb over one acre of ground. The SWPPP will contain measures to control surface runoff, reduce erosion, and minimize the potential for sediment to leave the project sites and enter waterways during construction activities. The District would be responsible for preparing the SWPPP prior to the start of ground disturbing activities at any project, and the measures contained in the SWPPP would be implemented and enforced throughout project construction. In addition to implementing Mitigation Measure HYDRO-1, the

SWPPP would ensure that the project would not cause substantial erosion or loss of topsoil. The impact would be less than significant with mitigation incorporated.

Alternative E – Less than Significant Impact with Mitigation Incorporated

The C Street Site is located on a private parcel that is currently developed with a baseball field. The Ignacio Boulevard Site is located in an open space area developed with ornamental landscaping. The Existing PS Site is situated in a developed median within Sunset Parkway, which is assumed to be underlain by soils composed of engineered fill (non-native). All sites are located in relatively flat areas, and thus are not highly susceptible to erosion. During construction, activities such as stockpiling, grading, excavation, and earth-disturbing activities would result in loose and disturbed soils on the project sites. Loose and disturbed soils are more prone to erosion and loss of topsoil by wind and water. As described in Section 4.2.10, Hydrology and Water Quality, the District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall be prepared by a registered professional engineer and include BMPs to minimize siltation, sedimentation, and erosion. After construction is finished, the disturbed areas of the project sites will be developed with ornamental landscaping, which will minimize erosion during rainfall events.

The total project footprint under Alternative E for the Existing PS Site, Ignacio Boulevard Site, and Bolling Drive Site combined would be over once acre. As such, a SWPPP would be required in order to comply with requirements of the federal Construction General Permit, which is required for projects that disturb over one acre of ground. The SWPPP will contain measures to control surface runoff, reduce erosion, and minimize the potential for sediment to leave the project sites and enter waterways during construction activities. The District would be responsible for preparing the SWPPP prior to the start of ground disturbing activities at any project, and the measures contained in the SWPPP would be implemented and enforced throughout project construction. In addition to implementing Mitigation Measure HYDRO-1, the SWPPP would ensure that the project would not cause substantial erosion or loss of topsoil. The impact would be less than significant with mitigation incorporated.

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?

Alternative A – Less than Significant Impact

The Sunset Parkway Site and Existing PS Site are located in developed areas within medians of Sunset Parkway. As described above in Impact a-iii) and a-iv), the sites are situated in relatively flat areas and are not characterized by high landslide or liquefaction potential. The sites are located within medians developed with ornamental landscaping, and therefore it is assumed that the soils underlying the site are non-native and are likely composed of engineered fill. The sites and surrounding areas have already been developed, and therefore the soils units are likely not unstable for the type of development being proposed as part of the project. Prior to the preparation of final design plans, a site-specific geotechnical investigation would be prepared to provide geotechnical design recommendations for the design and construction of the planned PS. The geotechnical investigation would include one exploratory drilling up to approximately 25 feet below the ground surface or until drilling refusal to characterize subsurface materials and confirm the depth of groundwater, laboratory tests on selected soil samples for engineering properties and corrosion potential, and an engineering analysis of the information obtained

during the subsurface exploration program to assess potential for unstable soil or geologic units on the project sites (F&L 2023). The project will adhere to all design recommendations provided in the geotechnical investigation in order to ensure that the project would not be located on an unstable soil or geologic unit. Therefore, the project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. The impact would be less than significant.

Alternative B – Less than Significant Impact

As described above in Impact a-iii) and a-iv), the Existing PS Site is situated in a relatively flat area and is not characterized by high landslide or liquefaction potential. The Ignacio Boulevard Site is located in a flat area with moderate liquefaction potential. The sites and surrounding areas have already been developed, and therefore the soil units are likely not unstable for the type of development being proposed as part of the project. Prior to the preparation of final design plans, a site-specific geotechnical investigation would be prepared to provide geotechnical design recommendations for the design and construction of the planned PS. The geotechnical investigation would include one exploratory drilling up to approximately 25 feet below the ground surface or until drilling refusal to characterize subsurface materials and confirm the depth of groundwater, laboratory tests on selected soil samples for engineering properties and corrosion potential, and an engineering analysis of the information obtained during the subsurface exploration program to assess potential for unstable soil or geologic units on the project sites (F&L 2023). The project will adhere to all design recommendations provided in the geotechnical investigation in order to ensure that the project would not be located on an unstable soil or geologic unit. Therefore, the project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. The impact would be less than significant.

Alternative C - Less than Significant Impact

As described above in Impact a-iii) and a-iv), the Existing PS Site is situated in a relatively flat area and is not characterized by high landslide or liquefaction potential. The Bolling Drive Site is situated in a moderately sloped area with very low liquefaction potential (CE&G 2023). The Ignacio Boulevard Site is situated in a flat area with moderate liquefaction potential. The sites and surrounding areas have already been developed, and therefore the soil units are likely not unstable for the type of development being proposed as part of the project. Although shallow sliding of surface soils on or within the vicinity of the Bolling Drive Site is possible, negative impacts to the proposed PS due to landsliding at the site is unlikely (CE&G 2023). Prior to the preparation of final design plans, a site-specific geotechnical investigation would be prepared to provide geotechnical design recommendations for the design and construction of the planned PS. The geotechnical investigation would include one exploratory drilling up to approximately 25 feet below the ground surface or until drilling refusal to characterize subsurface materials and confirm the depth of groundwater, laboratory tests on selected soil samples for engineering properties and corrosion potential, and an engineering analysis of the information obtained during the subsurface exploration program to assess potential for unstable soil or geologic units on the project sites (F&L 2023). The project will adhere to all design recommendations provided in the geotechnical investigation in order to ensure that the project would not be located on an unstable soil or geologic unit. Therefore, the project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. The impact would be less than significant.

Alternative D - Less than Significant Impact

As described above in Impact a-iii) and a-iv), the Existing PS Site is situated in an area of very low liquefaction potential. The Main Gate Road Site and Ignacio Boulevard Site are situated in relatively areas with moderate liquefaction potential (CE&G 2023; Witter et al. 2006). All sites are located in relatively flat areas and therefore, there is no potential for landsliding to occur on the project sites. The sites and surrounding areas have already been developed, and therefore the soil units are likely not unstable for the type of development being proposed as part of the project. Prior to the preparation of final design plans, a site-specific geotechnical investigation would be prepared to provide geotechnical design recommendations for the design and construction of the planned PS. The geotechnical investigation would include one exploratory drilling up to approximately 25 feet below the ground surface or until drilling refusal to characterize subsurface materials and confirm the depth of groundwater, laboratory tests on selected soil samples for engineering properties and corrosion potential, and an engineering analysis of the information obtained during the subsurface exploration program to assess potential for unstable soil or geologic units on the project sites (F&L 2023). The project will adhere to all design recommendations provided in the geotechnical investigation in order to ensure that the project would not be located on an unstable soil or geologic unit. Therefore, the project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. The impact would be less than significant.

Alternative E – Less than Significant Impact

As described above in Impact a-iii) and a-iv), the Existing PS Site is situated in an area of very low liquefaction potential. The C Street Site and Ignacio Boulevard Site are situated in areas with moderate liquefaction potential (CE&G 2023; Witter et al. 2006). All sites are located in relatively flat areas and therefore, there is no potential for landsliding to occur on the project sites. The sites and surrounding areas have already been developed, and therefore the soil units are likely not unstable for the type of development being proposed as part of the project. Prior to the preparation of final design plans, a site-specific geotechnical investigation would be prepared to provide geotechnical design recommendations for the design and construction of the planned PS. The geotechnical investigation would include one exploratory drilling up to approximately 25 feet below the ground surface or until drilling refusal to characterize subsurface materials and confirm the depth of groundwater, laboratory tests on selected soil samples for engineering properties and corrosion potential, and an engineering analysis of the information obtained during the subsurface exploration program to assess potential for unstable soil or geologic units on the project sites (F&L 2023). The project will adhere to all design recommendations provided in the geotechnical investigation in order to ensure that the project would not be located on an unstable soil or geologic unit. Therefore, the project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project. The impact would be less than significant.

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

Alternative A – No Impact

Soils with high expansion potential in Novato are mainly found in the Baylands Overlay District, which applies to areas within the historic Baylands, excluding lands that have been filled or developed (City of Novato 2020b). None of the project sites are located within the Baylands Overlay District, and therefore are not known to be underlain by expansive soils (County of Marin

2019). The Sunset Parkway Site and Existing PS Site are underlain by soils of the Xerorthents – Urban land complex. This soil unit is composed of fills and reworked soils associated with developed areas. This unit is not characterized by high potential for expansion or shrink-swell behavior (USDA NRCS 2019). No impact would occur.

Alternative B – No Impact

Soils with high expansion potential in Novato are mainly found in the Baylands Overlay District, which applies to areas within the historic Baylands, excluding lands that have been filled or developed (City of Novato 2020b). None of the project sites are located within the Baylands Overlay District, and therefore are not known to be underlain by expansive soils (County of Marin 2019). The Ignacio Boulevard Site and Existing PS Site are underlain by soils of the Xerorthents – Urban land complex. This soil unit is composed of fills and reworked soils associated with developed areas. This unit is not characterized by high potential for expansion or shrink-swell behavior (USDA NRCS 2019). No impact would occur.

Alternative C – Less than Significant Impact

Soils with high expansion potential in Novato are mainly found in the Baylands Overlay District, which applies to areas within the historic Baylands, excluding lands that have been filled or developed (City of Novato 2020). None of the project sites are located within the Baylands Overlay District, and therefore are not known to be underlain by expansive soils (County of Marin 2019). The Ignacio Boulevard Site and Existing PS Site are underlain by soils of the Xerorthents – Urban land complex. This soil unit is composed of fills and reworked soils associated with developed areas. This unit is not characterized by high potential for expansion or shrink-swell behavior (USDA NRCS 2019). The Bolling Drive Site is underlain by soils of the Saurin-urban land-Bonnydoon complex with 30 to 50 percent slopes. This soil unit has a linear extensibility rating of 4.5 percent, which is considered a moderate expansion potential (USDA NRCS 2019). As described above, development under the proposed project would be required to comply with the CBC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand the forces of expansive soil. Compliance with the requirements of the CBC would reduce this impact to a less than significant level.

Alternative D – No Impact

Soils with high expansion potential in Novato are mainly found in the Baylands Overlay District, which applies to areas within the historic Baylands, excluding lands that have been filled or developed (City of Novato 2020b). None of the project sites are located within the Baylands Overlay District, and therefore are not known to be underlain by expansive soils (County of Marin 2019). The Main Gate Road Site, Ignacio Boulevard Site, and Existing PS Site are underlain by soils of the Xerorthents – Urban land complex. This soil unit is composed of fills and reworked soils associated with developed areas. This unit is not characterized by high potential for expansion or shrink-swell behavior (USDA NRCS 2019). No impact would occur.

Alternative E – No Impact

Soils with high expansion potential in Novato are mainly found in the Baylands Overlay District, which applies to areas within the historic Baylands, excluding lands that have been filled or developed (City of Novato 2020b). None of the project sites are located within the Baylands Overlay District, and therefore are not known to be underlain by expansive soils (County of Marin 2019). The C Street Site, Ignacio Boulevard Site, and Existing PS Site are underlain by soils of the Xerorthents – Urban land complex. This soil unit is composed of fills and reworked soils

associated with developed areas. This unit is not characterized by high potential for expansion or shrink-swell behavior (USDA NRCS 2019). No impact would occur.

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

Alternatives A through E – No Impact

The project would not include septic tanks or alternative wastewater disposal systems. No impact would occur.

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

Alternative A – Less than Significant Impact with Mitigation Incorporated

Paleontological resources are the fossilized remains of organisms from prehistoric environments found in geologic strata. Project work under Alternative A would include the construction of a new PS at the Sunset Parkway Site and demolition of the Lynwood PS at the Existing PS Site. Both sites are located in already developed and landscaped medians within Sunset Parkway. There is low potential for paleontological resources to occur on these sites as the soils are not native and likely consist of engineered fill. Although it is unlikely that paleontological resources are present on-site, construction activities could result in the disturbance and/or accidental discovery of unknown paleontological resources on the Sunset Parkway Site. Therefore, the project would implement Mitigation Measure CUL-1 to reduce potential impacts to paleontological resources to a less than significant level. The impact would be less than significant with mitigation incorporated.

Alternative B – Less than Significant Impact with Mitigation Incorporated

The project sites are located throughout highly urbanized areas, and there are no known paleontological resources on the sites. The Existing PS Site is located in an already developed median within Sunset Parkway and is assumed to be underlain by non-native soils. Therefore, there is low potential for paleontological resources to occur on the Existing PS Site. The Ignacio Boulevard Site is located in an open space area surrounded by developed areas, and therefore there is low potential for unknown paleontological resources to occur. Although it is unlikely that paleontological resources are present on-site, construction activities could result in the disturbance and/or accidental discovery of unknown paleontological resources on the Ignacio Boulevard Site. The project would implement Mitigation Measure CUL-1 to reduce potential impacts to paleontological resources to a less than significant level. The impact would be less than significant with mitigation incorporated.

Alternative C - Less than Significant with Mitigation Incorporated

The project sites are located throughout highly urbanized areas, and there are no known paleontological resources on the sites. The Existing PS Site is located in an already developed median within Sunset Parkway and is assumed to be underlain by non-native soils. Therefore, there is low potential for paleontological resources to occur on the Existing PS Site. The Ignacio Boulevard Site is located in an open space area surrounded by developed areas, and therefore there is low potential for unknown paleontological resources to occur. The Bolling Drive Site is located in an open space area that is surrounded by undeveloped areas to the east. Although it is unlikely that paleontological resources are present on the Bolling Drive Site and Ignacio

Boulevard Site, construction activities could result in the disturbance and/or accidental discovery of unknown paleontological resources. The project would implement Mitigation Measure CUL-1 to reduce potential impacts to paleontological resources to a less than significant level. The impact would be less than significant with mitigation incorporated.

Alternative D - Less than Significant with Mitigation Incorporated

The project sites are located throughout highly urbanized areas, and there are no known paleontological resources on the sites. The Existing PS Site is located in an already developed median within Sunset Parkway and is assumed to be underlain by non-native soils. Therefore, there is low potential for paleontological resources to occur on the Existing PS Site. The Ignacio Boulevard Site is located in an open space area surrounded by developed areas, and therefore there is low potential for unknown paleontological resources to occur. The Main Gate Road Site is located in an open space area that is surrounded by undeveloped areas to the east and south. Although it is unlikely that paleontological resources are present on the Main Gate Road Site and Ignacio Boulevard Site, construction activities could result in the disturbance and/or accidental discovery of unknown paleontological resources. The project would implement Mitigation Measure CUL-1 to reduce potential impacts to paleontological resources to a less than significant level. The impact would be less than significant with mitigation incorporated.

Alternative E – Less than Significant with Mitigation Incorporated

The project sites are located throughout highly urbanized areas, and there are no known paleontological resources on the sites. The Existing PS Site is located in an already developed median within Sunset Parkway and is assumed to be underlain by non-native soils. Therefore, there is low potential for paleontological resources to occur on the Existing PS Site. The Ignacio Boulevard Site is located in an open space area surrounded by developed areas, and therefore there is low potential for unknown paleontological resources to occur. The C Street Site is located on a publicly owned site that is developed with a baseball field. Although it is unlikely that paleontological resources are present on the C Street Site and Ignacio Boulevard Site, construction activities could result in the disturbance and/or accidental discovery of unknown paleontological resources. The project would implement Mitigation Measure CUL-1 to reduce potential impacts to paleontological resources to a less than significant level. The impact would be less than significant with mitigation incorporated.

CONCLUSION

Under Alternatives A through E, impacts related to geology and soils could be mitigated to a less than significant level with the implementation of mitigation measures. Seismic activity from nearby faults has the potential to impact all project sites, and therefore impacts related to strong seismic ground shaking would be similar under Alternatives A through E. Alternative A would have the least substantial impact related to liquefaction because no project work would occur within an area of moderate or high liquefaction potential. Alternatives B would have a slightly more substantial impact because project work would occur on the Ignacio Boulevard Site, which is situated in an area of high liquefaction potential. Alternatives C, D, and E would have the most substantial impact related to liquefaction because project work would occur on the Ignacio Boulevard Site and either the Bolling Drive Site, Main Gate Road Site, or C Street Site, all of which are located in areas of moderate liquefaction potential. The Bolling Drive Site would have a slightly more substantial impact related to landsliding and expansive soils because there are sloped areas near the site and soils underlying the site have potential for shrink-swell

behavior. Therefore, impacts related to geology and soils would be most substantial under Alternative C; however, the impacts would still be less than significant or less than significant with mitigation.

4.2.8 Greenhouse Gas Emissions

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

ENVIRONMENTAL SETTING

Greenhouse gases (GHGs) are recognized by wide consensus among the scientific community to contribute to global warming/climate change and associated environmental impacts. The most common GHGs released from human activity are carbon dioxide, methane, and nitrous oxide (Governor's Office of Planning and Research 2008). The primary sources of GHGs are vehicles (including planes and trains), energy plants, and industrial and agricultural activities (e.g., dairies and hog farms).

In the United States, the major sources of GHG emissions are transportation, electricity generation, and industrial activities (USEPA 2022). These three sources are also the top contributors of GHG emissions in California (CARB 2022).

REGULATORY BACKGROUND

Global Warming Solutions Act

Assembly Bill (AB) 32, adopted in 2006, established the Global Warming Solutions Act of 2006 which requires the State to reduce GHG emissions to 1990 levels by 2020. In 2016, Senate Bill (SB) 32 was signed into law, amending the California Global Warming Solution Action. SB 32 and Executive Order B-30-15 require CARB to ensure that statewide GHG emissions are reduced to 40 percent below the 1990 level by 2030. CARB updated its Climate Change Scoping Plan in December of 2017 to express the 2030 statewide target in terms of million metric tons of carbon dioxide equivalent (MMTCO2e). Based on the emissions reductions directed by SB 32, the annual 2030 statewide target emissions level for California is 260 MMTCO2e.

Bay Area 2017 Clean Air Plan

The 2017 CAP is the most recently adopted air quality plan in the Bay Area. The CAP focuses on two related BAAQMD goals: protecting public health and protecting the climate. To protect the climate, the CAP includes control measures designed to reduce emissions of methane and other supper-GHGs that are potent climate pollutants in the near-term, and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines are intended to serve as a guide for those who

prepare or evaluate air quality impact analyses for projects and plans in the San Francisco Bay Area. While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the City and other jurisdictions in the San Francisco Bay Area Air Basin utilize the thresholds and methodology for assessing GHG impacts developed by BAAQMD within the CEQA Air Quality Guidelines. The guidelines include information on legal requirements, BAAQMD rules, methods of analyzing impacts, and recommended mitigation measures.

City of Novato General Plan

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the City's General Plan contains the following relevant policies related to GHG emissions:

> **Policy ES 24: Emission Reduction Targets.** Establish reduction targets for GHG emission and actively implement local strategies to reduce the effects of climate change.

City of Novato Climate Change Action Plan (CCAP)

The City's CCAP was adopted in December 2009 and is currently in the process of being updated. The CCAP serves as a culmination of an array of all related sustainability initiatives taken by the City and provides a coordinated strategy and direction for all related efforts to follow (City of Novato 2009).

DISCUSSION OF IMPACTS

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

Alternatives A through E – Less than Significant Impact

The BAAQMD has adopted thresholds of significance that were designed to establish the level at which GHG emissions would cause significant environmental impacts under CEQA. The thresholds are included in the 2022 CEQA Air Quality Guidelines (BAAQMD 2022).

The project would result in GHG emissions from temporary construction-related activities, including operation of heavy equipment, use of trucks, worker trips, site preparation, and trenching. Direct long-term operational emissions would include vehicular traffic during occasional maintenance activities. Indirect emissions would be generated from the electricity required to power the proposed PS.

The BAAQMD does not have an adopted threshold of significance for GHG emissions. The BAAQMD's approach to developing thresholds of significance for GHG impacts is to use a "fair share" approach to determine whether an individual project's GHG emissions would be cumulatively considerable. If a project would contribute its "fair share" of what is needed to achieve Statewide long-term GHG reduction goals, the impact of the project's GHG emission would be less than significant. The BAAQMD has identified required design elements that development and transportation projects must incorporate into project plans in order for their impact to be considered less than significant. There are no design elements required for infrastructure projects, and therefore the project must only be consistent with the local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b) (BAAQMD 2022). Local GHG reduction plans include the City of Novato's 2009 CAP. As described below in Impact b), the project would be consistent with GHG reduction strategies identified in

these local plans, and therefore would not constitute a significant impact regarding GHG emissions. The impact from GHG emissions would be less than significant.

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

Alternatives A through E – Less than Significant Impact

The project sites fall within the planning jurisdiction of the BAAQMD 2017 CAP, the City's CCAP, and the City's General Plan. As discussed in Section 4.2.3, Air Quality, the project under Alternatives A through E would be consistent with applicable control measures from the 2017 CAP. The District is not required to comply with the City's CCAP or General Plan, and therefore would not conflict with any other applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The impact would be less than significant.

CONCLUSION

Under Alternatives A through E, the proposed project would result in less than significant impacts related to the generation of greenhouse gas emissions, either directly or indirectly. Alternative C would have the most substantial impact related to GHG construction emissions. Under Alternatives A through E, the proposed project would result in less than significant impacts related to conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases. The impact would be the same under each Alternative.

4.2.9 Hazards and Hazardous Materials

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 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 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

Sunset Parkway Site (Site 1)

A search of the SWRCB's GeoTracker database and the Department of Toxic Substances Control's (DTSC) EnviroStor database indicate that there are no cleanup sites within 0.25 miles of the Sunset Parkway Site (SWRCB 2023, DTSC 2023).

Ignacio Boulevard Site (Site 2)

A search of the SWRCB's GeoTracker database and the DTSC's EnviroStor database indicated that there are no hazardous material cleanup sites within 0.25 miles of the Ignacio Boulevard Site (SWRCB 2023, DTSC 2023).

Bolling Drive Site (Site 3)

A search of the SWRCB's GeoTracker database and the DTSC's EnviroStor database indicated that there are no hazardous material cleanup sites within 0.25 miles of the Bolling Drive Site (SWRCB 2023, DTSC 2023).

Main Gate Road Site (Site 4) and C Street Site (Site 5)

A search of the SWRCB's GeoTracker database and the DTSC's EnviroStor database indicate that there is a hazardous material cleanup site located at 970 C Street, approximately 60 feet north of the Main Gate Road Site and 90 feet west of the C Street Site (SWRCB 2023, DTSC 2023). The three GeoTracker listings for the site at 970 C Street indicate that the site is a former Navy property that was used as a gas station (SWRCB 2023). The EnviroStor listing (80001201) indicates that the site is under land use restrictions per a Land Use Covenant due to the presence of petroleum contamination in the soil and groundwater on-site (DTSC 2023). The Covenant went into effect in April 2005 and limits development of the site to commercial and/or industrial uses. Further, the site owner may not perform any actions which may disturb the soil and groundwater, including dewatering excavations, disturbance of existing groundwater wells, installation of groundwater production wells, or actions which could affect the gasoline constituent groundwater plumes (e.g., construction or creation of groundwater recharge areas, surface impoundments, or disposal trenches), unless conducted in accordance with a Department of the Navy, DTSC, or SWRCB approved work plan (DTSC 2023).

There are three listings for the 970 C Street site in the GeoTracker database (T0609592162, T0609592161, T10000007672). The listings indicate that the site is a former underground storage tank (UST) site that was contaminated with benzene; gasoline; toluene; xylene; and methyl tert-Butyl Ether (MBTE), tertiary butyl alcohol (TBA), and other fuel oxygenates. Investigations including groundwater monitoring, MBTE plume delineation, and soil gas sampling were performed, and remedial actions were taken. In 2016, the Department of the Navy submitted a No Further Action Request for the property; however, the Regional Water Quality Control Board (RWQCB) postponed closure of the site until remediation activities are complete (SWRCB 2023).

Existing PS Site

A search of the SWRCB's GeoTracker database and the Department of Toxic Substances Control's (DTSC) EnviroStor database indicate that there are no cleanup sites within 0.25 miles of the Existing PS Site (SWRCB 2023, DTSC 2023).

REGULATORY BACKGROUND

City of Novato General Plan

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the City's General Plan contains the following relevant policies related to hazards and hazardous materials:

> **Policy SH 3: Fire Hazards.** Reduce the risk of loss of life, personal injury and property damage resulting from wildland and urban fire hazards through code enforcement and coordination with the Novato Fire Protection District.
>
> **Policy SH 5: Hazardous Materials.** Minimize risks and health impacts from environmental and human-induced disasters.
>
> **Policy SH 7:** Emergency Management: Minimize exposure to all hazards through emergency management, planning, and training.

DISCUSSION OF IMPACTS

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

Alternatives A through E - Less than Significant Impact

Project construction would involve the use and transport of typical construction-related hazardous materials such as fuels, lubricants, adhesives, and solvents. Heavy equipment would be staged and refueled within the project staging areas. Construction activities would be required to comply with numerous hazardous materials regulations and implement BMPs to ensure that hazardous materials are handled properly and do not pose a threat to worker safety or the environment. Workers handling hazardous materials are required to adhere to all OSHA and Cal/OSHA health and safety requirements. Hazardous materials must be transported to and from the project areas in accordance with the Resource Conservation and Recovery Act (RCRA) and United States Department of Transportation regulations and disposed of in accordance with RCRA at a facility that is permitted to accept the waste. With compliance with existing regulations, the potential impact related to routine transport and accidental releases of hazardous materials 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?

Alternative A – Less than Significant Impact

Lynwood Elementary School is located approximately 230 feet northwest of the Existing PS Site and 420 feet north of the Sunset Parkway Site. As discussed above in Impact a) and b) the proposed project would comply with all applicable regulations related to the handling of hazardous materials which includes proper spill response measures. Adherence with these regulations would ensure that impacts related to hazardous materials near existing schools during construction would be less than significant. Project operation would not introduce a new source of hazardous emissions or hazardous materials near an existing school. The new PS on Sunset Parkway would replace the Lynwood PS and would be further from Lynwood Elementary School. As such, operational conditions would be similar to existing conditions. Occasional

maintenance and repair of the proposed new infrastructure may require the use of hazardous materials; however, these materials would be handled in accordance with all applicable regulations and with the use of BMPs. Therefore, the impact of the proposed project associated with hazardous emissions and hazardous materials within one-quarter mile of an existing school would be less than significant.

Alternative B – Less than Significant Impact

Lynwood Elementary School is located approximately 230 feet northwest of the Existing PS Site, and Pacheco School is located approximately 650 feet north of the Ignacio Boulevard Site. As discussed above in Impact a) and b) the proposed project would comply with all applicable regulations related to the handling of hazardous materials which would include proper spill response measures. Adherence with these regulations would ensure that impacts related to hazardous materials near existing schools during construction would be less than significant.

Pump stations are not typically considered a source of hazardous emissions or hazardous materials, and therefore, project operation would not introduce a new source of hazardous emissions or hazardous materials near an existing school. Occasional maintenance and repair of the proposed new infrastructure may require the use of hazardous materials; however, these materials would be handled in accordance with all applicable regulations and with the use of BMPs. Therefore, the impact of the proposed project associated with hazardous emissions and hazardous materials within one-quarter mile of an existing school would be less than significant.

Alternative C – Less than Significant Impact

Lynwood Elementary School is located approximately 230 feet northwest of the Existing PS Site, and Pacheco School is located approximately 650 feet north of the Ignacio Boulevard Site. The Novato Children's Center is located approximately 615 feet west of the Bolling Drive Site, and the Hamilton School is located approximately 0.22 miles northwest. As discussed above in Impact a) and b) the proposed project would comply with all applicable regulations related to the handling of hazardous materials which would include proper spill response measures. Adherence with these regulations would ensure that impacts related to hazardous materials near existing schools during construction would be less than significant. In addition, as described in Section 4.2.10, Hydrology and Water Quality, Alternative C would require the preparation of a SWPPP to comply with NPDES General Construction Permit requirements. The SWPPP would contain spill prevention measures and BMPs for handling hazardous materials, which would serve as additional insurance that all hazardous materials would be properly handled during construction and minimize the potential for a spill to occur.

Pump stations are not typically considered a source of hazardous emissions or hazardous materials, and therefore, project operation would not introduce a new source of hazardous emissions or hazardous materials near an existing school. Occasional maintenance and repair of the proposed new infrastructure may require the use of hazardous materials; however, these materials would be handled in accordance with all applicable regulations and with the use of BMPs. Therefore, the impact of the proposed project associated with hazardous emissions and hazardous materials within one-quarter mile of an existing school would be less than significant.

Alternative D – Less than Significant Impact

Lynwood Elementary School is located approximately 230 feet northwest of the Existing PS Site, and Pacheco School is located approximately 650 feet north of the Ignacio Boulevard Site. The Hamilton School is located approximately 590 feet southwest of the Main Gate Road Site, and the Novato Charter School is located approximately 790 feet east. As discussed above in Impact

a) and b) the proposed project would comply with all applicable regulations related to the handling of hazardous materials which would include proper spill response measures. Adherence with these regulations would ensure that impacts related to hazardous materials near existing schools during construction would be less than significant. In addition, as described in Section 4.2.10, Hydrology and Water Quality, Alternative D would require the preparation of a SWPPP to comply with NPDES General Construction Permit requirements. The SWPPP would contain spill prevention measures and BMPs for handling hazardous materials, which would serve as additional insurance that all hazardous materials would be properly handled during construction and minimize the potential for a spill to occur.

Pump stations are not typically considered a source of hazardous emissions or hazardous materials, and therefore, project operation would not introduce a new source of hazardous emissions or hazardous materials near an existing school. Occasional maintenance and repair of the proposed new infrastructure may require the use of hazardous materials; however, these materials would be handled in accordance with all applicable regulations and with the use of BMPs. Therefore, the impact of the proposed project associated with hazardous emissions and hazardous materials within one-quarter mile of an existing school would be less than significant.

Alternative E – Less than Significant Impact

Lynwood Elementary School is located approximately 230 feet northwest of the Existing PS Site, and Pacheco School is located approximately 650 feet north of the Ignacio Boulevard Site. The C Street Site is located on the baseball field that belongs to the Novato Charter School, and the Hamilton School is also located approximately 0.20 miles southwest of the site. As discussed above in Impact a) and b) the proposed project would comply with all applicable regulations related to the handling of hazardous materials which would include proper spill response measures. Adherence with these regulations would ensure that impacts related to hazardous materials near existing schools during construction would be less than significant. In addition, as described in Section 4.2.10, Hydrology and Water Quality, Alternative E would require the preparation of a SWPPP to comply with NPDES General Construction Permit requirements. The SWPPP would contain spill prevention measures and BMPs for handling hazardous materials, which would serve as additional insurance that all hazardous materials would be properly handled during construction and minimize the potential for a spill to occur.

Pump stations are not typically considered a source of hazardous emissions or hazardous materials, and therefore, project operation would not introduce a new source of hazardous emissions or hazardous materials near an existing school. Occasional maintenance and repair of the proposed new infrastructure may require the use of hazardous materials; however, these materials would be handled in accordance with all applicable regulations and with the use of BMPs. Therefore, the impact of the proposed project associated with hazardous emissions and hazardous materials within one-quarter mile of an existing school would be less than significant.

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?

Alternative A – No Impact

There are no hazardous material cleanup sites located on or within 0.25 miles of the Sunset Parkway Site or Existing PS Site. No impact would occur.

Alternative B – No Impact

There are no hazardous material cleanup sites located on or within 0.25 miles of the Ignacio Boulevard Site or Existing PS Site. No impact would occur.

Alternative C – No Impact

There are no hazardous material cleanup sites located on or within 0.25 miles of the Bolling Drive Site or Existing PS Site. No impact would occur.

Alternative D – Less than Significant Impact

There are no hazardous material cleanup sites located on or within 0.25 miles of the Ignacio Boulevard Site or Existing PS Site. The Main Gate Road Site is located approximately 330 feet west of a hazardous material cleanup site located at 970 C Street. The most recent case update posted on GeoTracker's website is a letter from the RWQCB to the Navy that indicates that soil vapor for total petroleum hydrocarbons (TPH) was not included in any risk assessments for the cleanup site and was not included in the request for No Further Action letter dated September 2016. Due to the elevated concentrations of TPH at the cleanup site, the RWQCB is concerned about potential vapor intrusion concerns in areas of sensitive populations. The letter states that the RWQCB requests for additional soil vapor monitoring probes, specifically for TPH gas, to be included in the proposed soil vapor extraction workplan to determine if TPH in soil vapor is migrating offsite toward sensitive populations. Depending on the soil vapor data collected, the RWQCB states that it may be necessary for the Navy to develop a workplan to collect and analyze soil vapor to identify the extent of any existing TPH soil vapor plume that may exist within the vicinity of sensitive populations, but outside of the subject site (Beth 2020).

Although there is an active cleanup site approximately 60 feet north of the Main Gate Road Site, there are no known hazardous materials or contamination on the Main Gate Road Site. The site is currently an undeveloped open space area with walking paths, meaning that the site is already occupied by sensitive populations. The project would not substantially exacerbate any contamination issues, if any, on the Main Gate Road Site. The proposed new PS on the Main Gate Road Site would only be occupied occasionally during operation for maintenance activities, and therefore the project would not increase occupancy of the Main Gate Road Site as compared to the existing use. The impact would be less than significant.

Alternative E – Less than Significant Impact

There are no hazardous material cleanup sites located on or within 0.25 miles of the Ignacio Boulevard Site or Existing PS Site. The C Street Site is located approximately 90 feet east of a hazardous material cleanup site located at 970 C Street. The most recent case update posted on GeoTracker's website is a letter from the RWQCB to the Navy that indicates that soil vapor for total petroleum hydrocarbons (TPH) was not included in any risk assessments for the cleanup site and was not included in the request for No Further Action letter dated September 2016. Due to the elevated concentrations of TPH at the cleanup site, the RWQCB is concerned about potential vapor intrusion concerns in areas of sensitive populations. The letter states that the RWQCB requests for additional soil vapor monitoring probes, specifically for TPH gas, to be included in the proposed soil vapor extraction workplan to determine if TPH in soil vapor is migrating offsite toward sensitive populations. Depending on the soil vapor data collected, the RWQCB states that it may be necessary for the Navy to develop a workplan to collect and analyze soil vapor to identify the extent of any existing TPH soil vapor plume that may exist within the vicinity of sensitive populations, but outside of the subject site (Beth 2020). As of May

2021, remediation documents were being prepared by the current owner of the cleanup site; therefore, it is likely that remediation activities are now underway.

Although there is an active cleanup site approximately 90 feet west of the C Street Site, there are no known hazardous materials or contamination on the C Street Site. The site is currently used as a baseball field for the Novato Charter School, meaning that the site is already occupied by sensitive populations. The project would not substantially exacerbate any contamination issues, if any, on the C Street Site. The proposed new PS on the C Street Site would only be occupied occasionally during operation for maintenance activities, and therefore the project would not increase occupancy of the C Street Site as compared to the existing use. The impact would be less than significant.

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 for people residing or working in the project area?

Alternatives A through E - No Impact

None of the project sites are within the boundaries of an airport land use plan or within two miles of a public or public use airport. The nearest airport is the Gnoss Field DVO, a domestic airport located at 451 Airport Road. No impact related to airport safety hazards would occur.

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

Alternative A -Less than Significant Impact

The Sunset Parkway Site is situated within a median of a designated emergency evacuation route, whereas the Existing PS Site and staging area on Sunset Parkway are not (Novato Fire District 2023). Temporary delays may occur when vehicles are entering and exiting the Sunset Parkway Site; however, these delays would not cause significant traffic build-up and would not inhibit evacuation in case of emergency. All construction work within the public right-of-way would be consistent with the requirements of the encroachment permit. If lane closure is necessary during construction activities, such as open trenching and pipeline installation, proper traffic controls would be provided to ensure adequate emergency access. Other materials and equipment used during construction would be contained at the staging area on Sunset Parkway, which is not within a designated emergency evacuation route. The project would not impair implementation of or physically interfere with any other adopted emergency response plan or emergency evacuation plan. The impact would be less than significant.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site and staging area is situated along a designated emergency evacuation route, whereas the Existing PS Site and staging area on Sunset Parkway are not (Novato Fire District 2023). Temporary delays may occur when vehicles are entering and exiting the Ignacio Boulevard Site; however, these delays would not cause significant traffic build-up and would not inhibit evacuation in case of emergency. All construction work within the public right-of-way would be consistent with the requirements of the encroachment permit. If lane closure is necessary during construction activities, such as open trenching and pipeline installation, proper traffic controls would be provided to ensure adequate emergency access. The Ignacio Boulevard Site is not located within the roadway, and therefore, project operation would not result in a significant impact on emergency evacuation along Ignacio Boulevard. The project

would not impair implementation of or physically interfere with any other adopted emergency response plan or emergency evacuation plan. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Ignacio Boulevard Site and staging area and Bolling Drive Site and staging areas are situated along a designated emergency evacuation route, whereas the Existing PS Site and staging area on Sunset Parkway are not (Novato Fire District 2023). Temporary delays may occur when vehicles are entering and exiting the Ignacio Boulevard Site and Bolling Drive Site; however, these delays would not cause significant traffic build-up and would not inhibit evacuation in case of emergency. All construction work within the public right-of-way would be consistent with the requirements of the encroachment permit. If lane closure is necessary during construction activities, such as open trenching and pipeline installation, proper traffic controls would be provided to ensure adequate emergency access. The Ignacio Boulevard Site and Bolling Drive Site are not located within the roadway, and therefore, project operation would not result in a significant impact on emergency evacuation along Ignacio Boulevard, Bolling Drive, or Bolling Circle. The project would not impair implementation of or physically interfere with any other adopted emergency response plan or emergency evacuation plan. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Ignacio Boulevard Site and staging area and Main Gate Road Site and staging area are situated along a designated emergency evacuation route, whereas the Existing PS Site and staging area on Sunset Parkway are not (Novato Fire District 2023). Temporary delays may occur when vehicles are entering and exiting the Ignacio Boulevard Site and Main Gate Road Site; however, these delays would not cause significant traffic build-up and would not inhibit evacuation in case of emergency. All construction work within the public right-of-way would be consistent with the requirements of the encroachment permit. If lane closure is necessary during construction activities, such as open trenching and pipeline installation, proper traffic controls would be provided to ensure adequate emergency access. The Ignacio Boulevard Site and Main Gate Road Site are not located within the roadway, and therefore a significant impact on emergency evacuation along Ignacio Boulevard or Main Gate Road during project operation would not occur. The project would not impair implementation of or physically interfere with any other adopted emergency response plan or emergency evacuation plan. The impact would be less than significant.

Alternative E – Less than Significant Impact

The Ignacio Boulevard Site and staging area and C Street Site and staging area are situated along a designated emergency evacuation route, whereas the Existing PS Site and staging area on Sunset Parkway are not (Novato Fire District 2023). Temporary delays may occur when vehicles are entering and exiting the Ignacio Boulevard Site and C Street Site; however, these delays would not cause significant traffic build-up and would not inhibit evacuation in case of emergency. All construction work within the public right-of-way would be consistent with the requirements of the encroachment permit. If lane closure is necessary during construction activities, such as open trenching and pipeline installation, proper traffic controls would be provided to ensure adequate emergency access. The Ignacio Boulevard Site and C Street Site are not located within the roadway, and therefore a significant impact on emergency evacuation along Ignacio Boulevard, C Street, or Main Gate Road would not occur during project operation. The project would not impair implementation of or physically interfere with any other adopted

emergency response plan or emergency evacuation plan. The impact would be less than significant.

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

Alternative A – Less than Significant Impact

The Sunset Parkway Site and Existing PS Site are situated within the Wildland Urban Interface (WUI) approximately 0.80 miles southeast of a State Responsibility Area (SRA) High Fire Hazard Severity Zone (FHSZ) (Calfire 2023; City of Novato 2020a). As described in Section 4.2.20, Wildfire, the project would not expose people or structures to significant risks associated with wildland fires. During construction, the project would comply with all applicable requirements related to fire safety and implement BMPs to prevent the uncontrolled spread of wildfire. During operation, the proposed new infrastructure would be contained within the PS building. Any vegetation on the project sites would be maintained to prevent the buildup of dry vegetation. The impact would be less than significant.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site and Existing PS Site are situated within the WUI approximately 1.30 miles west and 0.80 miles southeast of SRA High FHSZs (City of Novato 2020a; Calfire 2023). As described in Section 4.2.20, Wildfire, the proposed project would not expose people or structures to significant risks associated with wildland fires. During construction, the project would comply with all applicable requirements related to fire safety and implement BMPs to prevent the uncontrolled spread of wildfire. During operation, the proposed new infrastructure would be contained within the PS building. Any vegetation on the project sites would be maintained to prevent the buildup of dry vegetation. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Bolling Drive Site is situated approximately 0.65 miles north of an SRA Moderate FHSZ and approximately 0.60 miles northeast of a High FHSZ (Calfire 2023). The Bolling Drive Site is not situated within the WUI (City of Novato 2020a). The Ignacio Boulevard Site and Existing PS Site are situated within the WUI approximately 1.30 miles west and 0.80 miles southeast of SRA High FHSZs (City of Novato 2020a; Calfire 2023). As described in Section 4.2.20, Wildfire, the proposed project would not expose people or structures to significant risks associated with wildland fires. During construction, the project would comply with all applicable requirements related to fire safety and implement BMPs to prevent the uncontrolled spread of wildfire. During operation, the proposed new infrastructure would be located underground and contained within the PS building. Any vegetation on the project sites would be maintained in accordance with applicable regulations to prevent the buildup of dry vegetation. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Main Gate Road Site is situated approximately 0.40 miles northwest of an SRA Moderate FHSZ (Calfire 2023). The site is not situated within the WUI (City of Novato 2020a). The Ignacio Boulevard Site and Existing PS Site are situated within the WUI approximately 1.30 miles west and 0.80 miles southeast of SRA High FHSZs (City of Novato 2020a; Calfire 2023). As described in Section 4.2.20, Wildfire, the proposed project would not expose people or structures to significant risks associated with wildland fires. During construction, the project would comply with all applicable requirements related to fire safety and implement BMPs to prevent the

uncontrolled spread of wildfire. During operation, the proposed new infrastructure would be contained within the PS building. Any vegetation on the project sites would be maintained to prevent the buildup of dry vegetation. The impact would be less than significant.

Alternative E – Less than Significant Impact

The C Street Site is situated approximately 0.30 miles northwest of an SRA Moderate FHSZ (Calfire 2023). The site is not situated within the WUI (City of Novato 2020a). The Ignacio Boulevard Site and Existing PS Site are situated within the WUI approximately 1.30 miles west and 0.80 miles southeast of SRA High FHSZs (City of Novato 2020a; Calfire 2023). As described in Section 4.2.20, Wildfire, the proposed project would not expose people or structures to significant risks associated with wildland fires. During construction, the project would comply with all applicable requirements related to fire safety and implement BMPs to prevent the uncontrolled spread of wildfire. During operation, the proposed new infrastructure would be contained within the PS building. Any vegetation on the project sites would be maintained to prevent the buildup of dry vegetation. The impact would be less than significant.

CONCLUSION

Under Alternatives A through E, the proposed project would result in less than significant impact related to the creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. Under Alternatives A through E, the proposed project would result in less than significant impact related to the creation of 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. The impact would be the same under each Alternative for each of these topics.

Under Alternatives A through E, the proposed project would result in less than significant impact related to hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school. The impact would be the same under each Alternative.

Under Alternatives A through C, the proposed project would result in no impact related to a project being 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. Under Alternatives D and E, the proposed project would result in less than significant impact related to topic.

Under Alternatives A through E, the proposed project would result in no impact related to safety hazard for people residing or working in the project area for sites 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. None of the project sites are within the boundaries of an airport land use plan or within two miles of a public or public use airport. The impact would be the same under each Alternative.

Under Alternatives A through E, the proposed project would result in less than significant impact related to impairing implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. The impact would be the same under each Alternative.

Under Alternatives A through E, the proposed project would result in less than significant impact related to exposure of people or structures, either directly or indirectly, to a significant risk of

loss, injury or death involving wildland fires. The impact would be the same under each Alternative.

4.2.10 Hydrology and Water Quality

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b)	Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
	i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
	ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☒	☐
	iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water 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 City of Novato is bordered by the waters of the San Pablo Bay to the east. The Petaluma River runs about 1.5 miles north of the City and drains to the San Pablo Bay near the unincorporated area of Black Point-Green Point, which borders the City to the northeast. Stafford Lake is located approximately one mile west of the City, which encompasses an 8.3-square-mile watershed (North Marin Water District 2023b).

The project sites are located within the jurisdiction of the San Francisco Bay RWQCB. The San Francisco Bay Region (Region 2) Water Quality Control Plan (Basin Plan) indicates that the project sites are within the SF Bay Central Hydrologic Planning Area (San Francisco Bay RWQCB 2017). The project sites are located within the Novato Valley groundwater subbasin (San Francisco Bay RWQCB 2017).

Sunset Parkway Site (Site 1)

The Sunset Parkway Site is within a median of Sunset Parkway and is not located near any waterways. The staging area on Sunset Parkway is also situated within a median of Sunset Parkway and is approximately 350 feet south of Scottsdale Pond.

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site and staging area are within an open space area approximately 50 feet north of Arroyo San Jose Creek.

Bolling Drive Site (Site 3)

The Bolling Drive Site and staging areas are located in open space and parking lot areas and are not situated near any waterways.

Main Gate Road Site (Site 4)

The Main Gate Road Site and staging area are within an open space area approximately 50 feet east of Pacheco Creek.

C Street Site (Site 5)

The C Street Site and staging area are within a baseball field and are not located near any waterways.

Existing PS Site

The Existing PS Site is within a median of Sunset Parkways and is not located near any waterways. The staging area on Sunset Parkway is also situated within a median of Sunset Parkway and is approximately 350 feet south of Scottsdale Pond.

DISCUSSION OF IMPACTS

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

Alternative A - Less than Significant Impact with Mitigation Incorporated

The Basin Plan sets narrative and numerical water quality objectives for the San Francisco Bay Region. Numerical objectives typically describe pollutant concentration, physical and chemical conditions of water, and the toxicity of water to aquatic organisms. The Existing PS Site and Sunset Parkway Site are not located within a quarter mile of any waterways, and therefore, substantial pollution and sedimentation into nearby waterways would not occur. In addition, Mitigation Measure HYDRO-1 would be implemented, which requires the preparation and implementation of an Erosion Control Plan. Mitigation Measure HYDRO-1 would include BMPs to reduce substantial erosion which could lead to off-site pollution and/or sedimentation of waterways. With the implementation of Mitigation Measure HYDRO-1, the project would not violate any water quality standards or waste discharge requirements. Project operations would not include any activities that would violate water quality standards or waste discharge

requirements or degrade surface or groundwater quality. The impact would be less than significant.

Alternative B – Less than Significant Impact with Mitigation Incorporated

The Existing PS Site is not located within a quarter mile of any waterways, and therefore, direct pollution and sedimentation into nearby waterways would not occur. The Ignacio Boulevard Site is situated adjacent to Arroyo San Jose Creek, and therefore, water runoff from the project site could cause pollution and sedimentation if BMPs are not implemented. The District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall include BMPs to reduce substantial erosion which could lead to off-site pollution and/or sedimentation of waterways. With the implementation of Mitigation Measure HYDRO-1, the project would not violate any water quality standards or waste discharge requirements. Project operations would not include any activities that would violate water quality standards or waste discharge requirements or degrade surface or groundwater quality. The impact would be less than significant.

Alternative C – Less than Significant Impact with Mitigation Incorporated

The Existing PS Site and Bolling Drive Site are not located within a quarter mile of any waterways, and therefore, direct pollution and sedimentation into nearby waterways would not occur. The Ignacio Boulevard Site is situated adjacent to Arroyo San Jose Creek, and therefore, water runoff from the project site could cause pollution and sedimentation if BMPs are not implemented. The District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall include BMPs to reduce substantial erosion which could lead to off-site pollution and/or sedimentation of waterways.

The total project footprint under Alternative C for the Existing PS Site, Ignacio Boulevard Site, and Bolling Drive Site combined would be over once acre. As such, a SWPPP would be required in order to comply with requirements of the federal Construction General Permit, which is required for projects that disturb over one acre of ground. The District would be responsible for preparing the SWPPP prior to the start of ground disturbing activities at any project, and the measures contained in the SWPPP would be implemented and enforced throughout project construction. In addition to implementing Mitigation Measure HYDRO-1, the SWPPP would ensure that the project would not violate any water quality standards or waste discharge requirements during construction.

Project operations would not include any activities that would violate water quality standards or waste discharge requirements or degrade surface or groundwater quality. The impact would be less than significant.

Alternative D – Less than Significant Impact with Mitigation Incorporated

The Existing PS Site is not located within a quarter mile of any waterways, and therefore, direct pollution and sedimentation into nearby waterways would not occur. The Ignacio Boulevard Site and Bolling Drive Site are situated within 100 feet of Arroyo San Jose Creek and Pacheco Creek, respectively. Therefore, water runoff from the Ignacio Boulevard Site and Main Gate Road Site could cause pollution and sedimentation if BMPs are not implemented. The District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall include BMPs to reduce substantial erosion which could lead to off-site pollution and/or sedimentation of waterways. With the

implementation of Mitigation Measure HYDRO-1, the project would not violate any water quality standards or waste discharge requirements.

The total project footprint under Alternative D for the Existing PS Site, Ignacio Boulevard Site, and Main Gate Road Site combined would be over once acre. As such, a SWPPP would be required in order to comply with requirements of the federal Construction General Permit, which is required for projects that disturb over one acre of ground. The District would be responsible for preparing the SWPPP prior to the start of ground disturbing activities at any project, and the measures contained in the SWPPP would be implemented and enforced throughout project construction. In addition to implementing Mitigation Measure HYDRO-1, the SWPPP would ensure that the project would not violate any water quality standards or waste discharge requirements during construction.

Project operations would not include any activities that would violate water quality standards or waste discharge requirements or degrade surface or groundwater quality. The impact would be less than significant.

Alternative E – Less than Significant Impact with Mitigation Incorporated

The Existing PS Site and C Street Site are not located within a quarter mile of any waterways, and therefore, direct pollution and sedimentation into nearby waterways would not occur. The Ignacio Boulevard Site is situated within 100 feet of Arroyo San Jose Creek, and therefore, water runoff from the project site could cause pollution and sedimentation if BMPs are not implemented. The District would implement Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan. The Erosion Control Plan shall include BMPs to reduce substantial erosion which could lead to off-site pollution and/or sedimentation of waterways. With the implementation of Mitigation Measure HYDRO-1, the project would not violate any water quality standards or waste discharge requirements.

The total project footprint under Alternative E for the Existing PS Site, Ignacio Boulevard Site, and C Street Site combined would be over once acre. As such, a SWPPP would be required in order to comply with requirements of the federal Construction General Permit, which is required for projects that disturb over one acre of ground. The District would be responsible for preparing the SWPPP prior to the start of ground disturbing activities at any project, and the measures contained in the SWPPP would be implemented and enforced throughout project construction. In addition to implementing Mitigation Measure HYDRO-1, the SWPPP would ensure that the project would not violate any water quality standards or waste discharge requirements during construction.

Project operations would not include any activities that would violate water quality standards or waste discharge requirements or degrade surface or groundwater quality. The impact 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?

Alternatives A through E - Less than Significant Impact

The project is located within the District's Primary Zone 2 Pressure Zone, which is the largest Zone 2 pressure zone. The primary water source for the District's water supply comes from Sonoma County Water Agency's (SCWA) Russian River Project. The Russian River Project water is

collected 60 to 100 feet below the gravel beds adjacent to the Russian River and is conveyed to the District's Novato Water System via a 7.1-mile-long aqueduct known as the North Marin Aqueduct. Water is diverted and extracted from a stretch of the Russian River located just upstream of Wohler Bridge via six radial wells known as "Ranney collectors." Although the water extracted via Ranney collectors does percolate through the ground, due to the connection to the surface water source, this diversion is considered and is permitted as a surface water supply under existing surface water rights to the Russian River and Dry Creek water (North Marin Water District 2021). The SCWA's water supply also includes a relatively small amount of groundwater from groundwater supply wells located in the central Santa Rosa Plain subbasin. The primary water supply from SCWA is supplemented by the Stafford Treatment Plant, which pulls water from Stafford Lake (F&L 2023).

The purpose of the proposed project is to replace the existing Lynwood PS that serves Primary Zone 2 in order to meet anticipated future demands. While the project would result in increased capacity of water infrastructure, the project would not cause increased demand for water resources. Future development within the City may result in increased demand for groundwater resources from the SCWA's water supply, which the project would help to convey; however, these anticipated demands are accounted for in the District's and SCWA's Urban Water Management Plan (UWMP). The project would not include substantial increases in impervious surface areas, and therefore would not substantially impair groundwater recharge. The impact of the project related to groundwater supplies and groundwater recharge would be less than significant.

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 off-site; (iii) create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or (iv) impede or redirect flood flows?

Alternative A – Less than Significant Impact

The Sunset Parkway Site and Existing PS Site are situated in medians within Sunset Parkway. The project sites are both relatively flat and surrounded by impervious surface areas of the roadway. The Sunset Parkway Site is currently developed with ornamental landscaping, and the Existing PS Site is developed with the Lynwood PS. The project would not substantially increase impervious surface areas on the two sites, and would not alter drainage patterns as the sites are situated within flat roadway medians. Demolition of the Lynwood PS on the Existing PS Site would not result in alterations of drainage patterns as there would not be a substantial increase in impervious surface area on the site. As such, the project would not result in substantial erosion or siltation, increase the rate or amount of surface runoff, or impede or redirect flood flows due to significant alterations in drainage patterns. The impact would be less than significant.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site is situated within a flat, landscaped open space area. The Existing PS Site is situated within a flat median of Sunset Parkway and is developed with the Lynwood PS. The construction of a new PS at the Ignacio Boulevard Site would not substantially increase

impervious surface area or alter drainage patterns because 1) the site is flat, and 2) the majority of new infrastructure constructed would be placed underground. Demolition of the Lynwood PS on the Existing PS Site would not result in alterations of drainage patterns as there would not be a substantial increase in impervious surface area on the site. As such, the project would not result in substantial erosion or siltation, increase the rate or amount of surface runoff, or impede or redirect flood flows due to significant alterations in drainage patterns. The impact would be less than significant.

Alternative C – Less than Significant Impact

The Bolling Drive Site is situated within a landscaped open area surrounded by sloped open space areas to the east and Bolling Circle to the west. The Existing PS Site is situated within a flat median of Sunset Parkway and is developed with the Lynwood PS. The Ignacio Boulevard Site is situated within a flat, landscaped open space area. The construction of a new PS at the Ignacio Boulevard Site would not substantially increase impervious surface area or alter drainage patterns because 1) the site is flat, and 2) the majority of new infrastructure constructed would be placed underground. The construction of a new PS at the Bolling Drive Site would not substantially increase impervious surface area or alter drainage patterns because the majority of new infrastructure constructed would be placed underground and the sitework would not substantially alter the slope grade of the site or obstruct existing drainage patterns. Demolition of the Lynwood PS on the Existing PS Site would not result in alterations of drainage patterns as there would not be a substantial increase in impervious surface area on the site. As such, the project would not result in substantial erosion or siltation, increase the rate or amount of surface runoff, or impede or redirect flood flows due to significant alterations in drainage patterns. The impact would be less than significant.

Alternative D – Less than Significant Impact

The Main Gate Road Site is situated within a relatively flat open space area near Pacheco Creek. The Ignacio Boulevard Site is situated within a flat, landscaped open space area. The Existing PS Site is situated within a flat median of Sunset Parkway and is developed with the Lynwood PS. The construction of a new PS at the Ignacio Boulevard Site would not substantially increase impervious surface area or alter drainage patterns because 1) the site is flat, and 2) the majority of new infrastructure constructed would be placed underground. The construction of a new PS at the Main Gate Road Site would not substantially increase impervious surface area or alter drainage patterns because 1) the site is flat, and 2) the majority of new infrastructure constructed would be placed underground. Demolition of the Lynwood PS on the Existing PS Site would not result in alterations of drainage patterns as there would not be a substantial increase in impervious surface area on the site. As such, the project would not result in substantial erosion or siltation, increase the rate or amount of surface runoff, or impede or redirect flood flows due to significant alterations in drainage patterns. The impact would be less than significant.

Alternative E – Less than Significant Impact

The C Street Site is situated within a flat baseball field. The Ignacio Boulevard Site is situated within a flat, landscaped open space area. The Existing PS Site is situated within a flat median of Sunset Parkway and is developed with the Lynwood PS. The construction of a new PS at the Ignacio Boulevard Site would not substantially increase impervious surface area or alter drainage patterns because 1) the site is flat, and 2) the majority of new infrastructure constructed would be placed underground. The construction of a new PS at the C Street Site would not substantially increase impervious surface area or alter drainage patterns because 1) the site is flat, and 2) the

majority of new infrastructure constructed would be placed underground. Demolition of the Lynwood PS on the Existing PS Site would not result in alterations of drainage patterns as there would not be a substantial increase in impervious surface area on the site. As such, the project would not result in substantial erosion or siltation, increase the rate or amount of surface runoff, or impede or redirect flood flows due to significant alterations in drainage patterns. The impact would be less than significant.

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

Alternative A -Less than Significant Impact

None of the project sites are located in a tsunami or seiche hazard zone (CDC 2023). The Sunset Parkway Site and Existing PS Site are not located in a flood zone hazard area (Federal Emergency Management Agency [FEMA] 2023). The staging area on Sunset Parkway is located in a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event (FEMA 2023). No construction work would occur within the staging area, it would only be used to store equipment and materials. Therefore, the staging of materials at the staging area on Sunset Parkway would not risk release of pollutants due to inundation. The impact would be less than significant.

Alternative B – Less than Significant Impact

None of the project sites are located in a tsunami or seiche hazard zone (CDC 2023). The Ignacio Boulevard Site, staging area, and Existing PS Site are not located in a flood zone hazard area (FEMA 2023). The staging area on Sunset Parkway is located in a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event (FEMA 2023). No construction work would occur within the staging area, it would only be used to store equipment and materials. Therefore, the staging of materials at the staging area on Sunset Parkway would not risk release of pollutants due to inundation. The impact would be less than significant.

Alternative C – Less than Significant Impact

None of the project sites are located in a tsunami or seiche hazard zone (CDC 2023). The Bolling Drive Site and staging areas, Ignacio Boulevard Site and staging area, and Existing PS Site are not located in a flood zone hazard area (FEMA 2023). The staging area on Sunset Parkway is located in a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event (FEMA 2023). No construction work would occur within the staging area, it would only be used to store equipment and materials. Therefore, the staging of materials at the staging area on Sunset Parkway would not risk release of pollutants due to inundation. The impact would be less than significant.

Alternative D – Less than Significant Impact with Mitigation Incorporated

None of the project sites are located in a tsunami or seiche hazard zone (CDC 2023). The Ignacio Boulevard Site, staging area, and Existing PS Site are not located in a flood zone hazard area (FEMA 2023). The Main Gate Road Site and staging area on Sunset Parkway are located in a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event (FEMA 2023). No construction work would occur within the staging area, it would only be used to store equipment and materials. Therefore, the staging of materials at the staging area on Sunset Parkway would not risk release of pollutants due to inundation.

Under Alternative D, a new PS would be constructed at the Main Gate Road Site within the Flood Zone AE, which represents a one percent annual chance of flooding from Pacheco Creek. Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan, would ensure that erosion and sediment runoff control measures are implemented at the Main Gate Road Site, which would reduce the potential for inundation of the project site to result in sediment pollution into waterways. In addition, the project contractor would comply with all federal OSHA and Cal/OSHA requirements related to constrution worker safety, including proper handling of hazardous materials such as fuels, lubricants, adhesives, and solvents. Proper handling of materials under these regulations would ensure that inundation of the project site would not result in pollution of waterways by hazardous materials. With implementation of Mitigation Measure HYDRO-1 and compliance with OSHA and Cal/OSHA regulations, inundation of the Main Gate Road Site during construction would not risk release of pollutants into waterways.

Large volumes of rainwater and/or inundation from flooding can cause damage to pumps, and therefore, should Alternative D be selected, the new PS at the Main Gate Road Site would be designed to protect the pumps and any electrical components from water-caused damage. As the new PS would be for conveying water, rather than wastewater, the risk of pollutant release due to flood inundation is dismissible. The impact of the proposed project related to pollutant release due to inundation would be less than significant with mitigation incorporated.

Alternative E – Less than Significant Impact

None of the project sites are located in a tsunami or seiche hazard zone (CDC 2023). The C Street Site and staging area, Ignacio Boulevard Site and staging area, and Existing PS Site are not located in a flood zone hazard area (FEMA 2023). The staging area on Sunset Parkway is located in a Zone AE flood zone, which means that the area is subject to inundation by the one percent annual chance flood event. As such, project activities during construction at the staging site on Sunset Parkway could risk the release of pollutants from construction equipment and materials due to inundation.

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

Alternatives A through E - No Impact

The District's 2020 UWMP states that "because the District does not directly pump groundwater, it does not coordinate with any Groundwater Sustainability Agencies" (North Marin Water District 2020). The project sites are located within the Novato Valley groundwater subbasin, which is monitored by the County's Groundwater Elevation Monitoring Program. The Novato Valley subbasin is designated as a low priority basin by the Sustainable Groundwater Management Act, and therefore a Groundwater Sustainability Plan is not required for the subbasin (California Department of Water Resources 2023). Therefore, the project would not conflict with any sustainable groundwater management plan.

The applicable water quality control plan is the Basin Plan. As discussed in Impact a), the project would not violate any water quality standards or waste discharge requirements established in the Basin Plan. Therefore, the project would not conflict with any applicable water quality control plan.

The project would not conflict with any applicable water quality control plan or sustainable groundwater management plan. No impact would occur.

MITIGATION MEASURES

Mitigation Measure HYDRO-1: Erosion Control Plan

Prior to beginning any ground-disturbing work on the project sites, the District shall prepare an Erosion Control Plan to be implemented throughout construction. The Erosion Control Plan shall be prepared by a registered professional engineer and include BMPs to minimize siltation, sedimentation, and erosion. The Plan may include measures such as erosion control fencing, covering any loose soil on-site, and replanting graded areas with vegetation. The District shall be responsible for ensuring that the Erosion Control Plan is implemented throughout construction activities.

CONCLUSION

Under Alternatives A through E, the proposed project would result in less than significant impacts after mitigation related to potential violation of any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. While Alternatives C through E require a SWPPP in addition to compliance with Mitigation Measure HYDRO-1, the impact would be similar between each of the Alternatives.

Under Alternatives A through E, the proposed project would result in less than significant impacts related to the potential to decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. This impact would be similar between each of the Alternatives.

Under Alternatives A through E, the proposed project would result in less than significant impacts related to the potential to 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. This impact would be similar between each of the Alternatives.

Under Alternatives A, B, C, and E, the proposed project would result in less than significant impacts related to flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation. The impact would be similar between each of these Alternatives. Under Alternative D, a new PS would be constructed at the Main Gate Road Site within the Flood Zone AE, which represents a one percent annual chance of flooding from Pacheco Creek. Mitigation Measure HYDRO-1, which requires the preparation and implementation of an Erosion Control Plan, would ensure that erosion and sediment runoff control measures are implemented at the Main Gate Road Site, which would reduce the potential for inundation of the project site to result in sediment pollution into waterways.

Under Alternatives A through E, the proposed project would result in no impact related to potential a water quality control plan or sustainable groundwater management plan. The impact would be the same under each Alternative.

4.2.11 Land Use and Planning

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

ENVIRONMENTAL SETTING

Sunset Parkway Site (Site 1)

The Sunset Parkway Site is within the R1-7.5 (Low Density Residential) zoning district and is designated for Low Density Residential development per the City's General Plan (City of Novato "Map GP-1 Land Use"; City of Novato 2001).

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site is within the PD (Planned District) zoning district and is designated for Open Space development per the City's General Plan (City of Novato "Map GP-1 Land Use"; City of Novato 2001).

Bolling Drive Site (Site 3)

The Bolling Drive Site is within the PD (Planned District) zoning district and is designated for Medium Density Residential Development per the City's General Plan (City of Novato "Map GP-1 Land Use"; City of Novato 2001).

Main Gate Road Site (Site 4)

The Main Gate Road Site is within the CF (Community Facilities) zoning district and is designated for Community Facilities, Public Utilities, and Civic Uses development per the City's General Plan (City of Novato "Map GP-1 Land Use"; City of Novato 2001).

C Street Site (Site 5)

The C Street Site is within the PD (Planned District) zoning district and is designated for Community Facilities, Public Utilities, and Civic Uses development per the City's General Plan (City of Novato "Map GP-1 Land Use"; City of Novato 2001).

Existing PS Site

The Existing PS Site is within the R1-7.5 (Low Density Residential) zoning district and is designated for Low Density Residential development per the City's General Plan (City of Novato "Map GP-1 Land Use"; City of Novato 2001).

DISCUSSION OF IMPACTS

a) Physically divide an established community?

Alternatives A through E - No Impact

All project sites are located throughout urbanized areas of the City of Novato. The construction of PS under each project alternative would not cause the physical division of an established community. Project construction activities would require space for staging areas in designated areas near the project sites. However, access to residences, public facilities, and recreational facilities would be maintained throughout construction. New infrastructure constructed as part of the project would fit into the surrounding environment and would not cause physical division of any established community. No impact would occur.

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?

Alternatives A through E - No Impact

The project sites span across multiple land use designations as specified by the City of Novato General Plan and zoning code. While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the project would not conflict with any land use designation, plan, policy, or regulation in the adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

CONCLUSION

Under Alternatives A through E, the proposed project would have no impact related to land use, and no mitigation measures would be required. The impact would be the same under each Alternative.

4.2.12 Mineral Resources

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

ENVIRONMENTAL SETTING

The City's General Plan states that the primary extractive resources around the Novato area are sand and gravel. The California Geological Survey has designated four Resource Sectors in the Novato area in the Rush Creek Open Space preserve, the Black Point area, Burdell Mountain, and Bowman Canyon (City of Novato 2020a).

DISCUSSION OF IMPACTS

a-b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? 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?

Alternatives A through E - No Impact

Online maps prepared by the DOC indicate that there are no mineral lands, mineral sites, or mines in the City of Novato (California DOC 2022b). The City's General Plan identifies locally important mineral resources; however, the project sites are not located near these resources. Therefore, the project would not result in the loss of availability of a known mineral resource site that would be of value to the State or local area. No impact would occur.

CONCLUSION

Under Alternatives A through E, the proposed project would have no impact related to mineral resources, and no mitigation measures would be required. The impact would be the same under each Alternative.

4.2.13 Noise

Would the project result in:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or 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?	☐	☐	☐	☒

BACKGROUND INFORMATION

Noise is commonly defined as unwanted sound that annoys or disturbs people and can have an adverse psychological or physiological effect on human health. Sound is measured in decibels (dB), which is a logarithmic scale. Decibels describe the purely physical intensity of sound based on changes in air pressure, but they cannot accurately describe sound as perceived by the human ear since the human ear is only capable of hearing sound within a limited frequency range. For this reason, a frequency-dependent weighting system is used, and monitoring results are reported in A-weighted decibels (dBA). Decibels and other acoustical terms are defined in Table 13.

A typical method for determining a person's subjective reaction to a new noise is by comparing it to existing conditions. The following describes the general effects of noise on people: 1) a change of 1 dBA cannot typically be perceived except in carefully controlled laboratory experiments; 2) a 3-dBA change is considered a just-perceivable difference; 3) a minimum of 5-dBA change is required before any noticeable change in community response is expected; and 4) a 10-dBA change is subjectively perceived as approximately a doubling or halving in loudness.

Table 13. Definition of Acoustical Terms

TERM	DEFINITION
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.
Decibel (dB)	A unit describing the amplitude of sound on a logarithmic scale. Sound described in decibels is usually referred to as sound or noise "level." This

	unit is not used in this analysis because it includes frequencies that the human ear cannot detect.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, in a manner similar to the frequency response of the human ear, and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Maximum Sound Levels (Lmax)	The maximum sound level measured during a given measurement period.
Equivalent Noise Level (Leq)	The average A-weighted noise level during the measurement period. For this CEQA evaluation, Leq refers to a 1-hour period unless otherwise stated.
Community Noise Equivalent Level (CNEL)	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels to sound levels during the evening from 7:00 to 10:00 p.m. and after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to sound levels during the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The existing level of environmental noise at a given location from all sources near and far.
Vibration Decibel (VdB)	A unit describing the amplitude of vibration on a logarithmic scale.
Peak Particle Velocity (PPV)	The maximum instantaneous peak of a vibration signal.
Root Mean Square (RMS) Velocity	The average of the squared amplitude of a vibration signal.

Sources:
Charles M. Salter Associates, Inc., 1998. Acoustics – Architecture, Engineering, the Environment, William Stout Publishers.
Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No.0123, September.

Traffic noise levels are often expressed in terms of the hourly dBA. The noise levels generated by vehicular sources mainly depend on traffic volume, the speed, and the percent of trucks within the fleet. Increases in these three factors will lead to higher noise levels. Doubling the number of sources, such as traffic volume, increases the noise level by approximately 3 dBA due to the logarithmic nature of noise levels.

In an unconfined space, such as outdoors, noise attenuates with distance. Noise levels at a known distance from point sources are reduced by 6 dBA for every doubling of that distance for hard surfaces (e.g., asphalt) and by 7.5 dBA for every doubling of distance for soft surfaces (e.g., vegetative areas).

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. Typically, groundborne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Vibration amplitudes are usually expressed as either peak particle velocity (PPV) or

the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous peak of the vibration signal. PPV is appropriate for evaluating potential damage to buildings, but it is not suitable for evaluating human response to vibration because it takes the human body time to respond to vibration signals. The response of the human body to vibration is dependent on the average amplitude of a vibration. The RMS of a signal is the average of the squared amplitude of the signal and is more appropriate for evaluating human response to vibration. PPV is normally described in units of inches per second (in/sec) and RMS is often described in vibration decibels (VdB).

ENVIRONMENTAL SETTING

Sensitive Receptors

Noise-sensitive land uses typically include residences, motels and hotels, schools, libraries, houses of worship, hospitals, convalescent homes, and parks and outdoor recreation areas.

Existing sensitive land uses in the vicinity of each alternative site location are listed below for each Alternative.

Sunset Parkway Site (Site 1)

Residences to the north, west, south, and east as close as 40 feet and the Lynwood Elementary School about 580 feet to the north of Site 1. Residences surround the Existing PS Site as close as 42 feet; and, residences along Sunset Parkway as close as 40 feet to the proposed pipe improvements.

Ignacio Boulevard Site (Site 2)

Residences to the north, west, south, and east of Site 2 as close as 140 feet; and residences along Fairway Drive, Ignacio Boulevard, and Entrada Drive as close as 45 feet to the proposed pipe improvements.

Bolling Drive Site (Site 3)

Residences to the west, east, and south as close as 95 feet; North Bay Children's Center, Tinker Way School Age Program about 585 feet to the north; the Novato Children’s Center about 650 feet to the northwest; and, the Hamilton Meadow Park School about 880 feet to the northwest. The playground within the Clark A Blasdel Park is located about 300 feet north of Site 3. Residences along Bolling Drive, Bolling Circle, Randolph Drive, and Main Gate Road as close as 40 feet to the proposed pipe improvements.

Main Gate Road Site (Site 4)

Residences to the east, south, and northwest as close as 155 feet; the Hamilton Meadow Park School about 300 feet to the southwest; the Novato Charter School about 375 feet to the northeast; the North Bay Children Center, C Street about 480 feet to the northeast; the South Novato Library about 750 feet to the northeast; the Wonder Nook Preschool about 690 feet to the north; the North Bay Children's Center, Tinker Way School Age Program about 950 feet to the south; and, the Espino C Family Child Care about 975 feet to the east of Site 4. Residences along Main Gate Road as close as 50 feet to the proposed pipe improvements.

C Street Site (Site 5)

Residences to the east, south, and northwest as close as 105 feet; the Hamilton Meadow Park School about 630 feet to the southwest; the Novato Charter School about 200 feet to the north;

the North Bay Children Center, C Street about 330 feet to the north; the South Novato Library about 625 feet to the north; the Wonder Nook Preschool about 880 feet to the northwest; the North Bay Children's Center, Tinker Way School Age Program about 980 feet to the south; and, the Espino C Family Child Care about 670 feet to the southeast of Site 5. Residences along Main Gate Road as close as 105 feet to the proposed pipe improvements.

Existing Ambient Noise Conditions

Traffic along nearby roadways is the primary source of noise surrounding the proposed alternative site locations. The existing noise environment in the vicinity of each alternative site location was characterized through an ambient noise monitoring survey conducted from December 14 to December 15, 2023. The survey consisted of three long-term (24-hour) measurements (LT-1 through LT-3) and one short-term (15-minute) measurement (ST-1). The noise measurement locations are illustrated in Figure F1, Appendix F.

The existing noise environments near Site 1 through Site 3 are represented by LT-1 through LT-3, while Site 4 and Site 5 are represented by ST-1. Sound level measurements were conducted using Type 1 sound level meters with slow response and "A" weighting. The noise monitoring equipment for the long-term measurements were installed on trees at 9 feet to 10.5 feet above ground level, while the short-term measurement was collected using a tripod at 4.5 feet above ground level. The microphones were protected from the effects of wind noises. The noise meters were field calibrated immediately prior to use. Ambient noise measurement locations, monitoring periods, and corresponding results are summarized in Table 14.

Table 14. Summary of Existing Noise Level Measurements

SITE ID	LOCATION	MONITORING PERIOD	NOISE LEVEL
LT-1	Sunset Parkway median between Monte Maria Avenue and Cambridge Street	From 10:51 AM 12/14/2023 to 11:18 AM 12/15/2023	63.3 dBA, CNEL
LT-2	About 450 feet east to the intersection of eastbound Ignacio Boulevard and Palmer Drive	From 10:16 AM 12/14/2023 to 10:16 AM 12/15/2023	66.1 dBA, CNEL
LT-3	Adjacent to the intersection of Bolling Circle and Crissy Place to the east	From 8:46 AM 12/14/2023 to 8:46 AM 12/15/2023	60.2 dBA, CNEL
ST-1	Northwest corner of the intersection of Main Gate Road and C Street	From 9:14 AM 12/14/2023 to 9:29 AM 12/14/2023	63.4 dBA, Leq

Source: Appendix F.

REGULATORY SETTING

Federal Transit Administration

The Federal Transit Administration (FTA) has developed a general construction noise threshold of 90 dBA Leq at the nearest noise-sensitive receptor. According to the FTA, if the combined noise level in 1 hour from the two noisiest pieces of equipment exceeds the 90 dBA threshold at a residential land use (or other noise-sensitive receptors), then there may be a substantial adverse reaction.

The FTA has developed vibration thresholds to prevent disturbances to (i.e., annoyance of) building occupants based on the frequency of a vibration event.[7] Vibrations that are equal to or exceed the vibration thresholds could result in potential disturbance to people or activities. The FTA thresholds of 80 VdB and 83 VdB are used in this analysis to evaluate disturbance to residences and buildings where people normally sleep and to institutional land uses with primarily daytime use (such as schools), respectively.

California Department of Transportation

The California Department of Transportation (Caltrans) has developed vibration thresholds based on PPV values to evaluate the potential impact of construction vibration on structures.[8] Construction vibrations that are equal to or exceed the vibration thresholds could result in potential damage to structures. For frequent intermittent vibratory sources during construction (e.g., vibratory compaction equipment), Caltrans recommends a threshold of 0.3 in/sec for older residential structures.

City of Novato Noise Ordinance

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, City of Novato Municipal Code Division 19.22.070 establishes performance standards for allowable exterior noise levels based on land use, as shown in Table 15. In accordance with Division 19.22.070.A, uses, activities, and processes shall not generate or emit any noise or sound in excess of the levels provided in Table 15 beyond the property line of the parcel on which they are located. According to Division 19.22.070.B, the performance standards do not apply to authorized construction activities that occur between 7 a.m. and 6 p.m. on weekdays, or between 10 a.m. and 5 p.m. on Saturdays.

Table 15. City of Novato Municipal Code Allowable Exterior Noise Levels

TYPE OF LAND USE	ALLOWABLE EXTERIOR LEVELS[1]	
	Time Interval	Maximum Noise Level[2]
Residential[3]	10 p.m. to 6 a.m.	45 dBA
	6 a.m. to 10 p.m.	60 dBA
Commercial[4]	10 p.m. to 6 a.m.	60 dBA
	6 a.m. to 10 p.m.	70 dBA
Industrial or Manufacturing[4]	Anytime	70 dBA

Notes:

[1] Each of the noise limits specified shall be reduced by 5 dBA for impulse or simple tone noises. If the ambient noise exceeds the resulting standard, the ambient shall be the standard.

[2] Maximum noise levels shall not be exceeded for an aggregate period of more than three minutes within a one-hour time period or by more than 20 dBA at any time.

[3] Residential standards apply to sensitive receptors such as schools, hospitals, libraries, group care facilities, and convalescent homes. These uses may require special mitigation.

[4] Commercial standards apply to Mixed Use Districts.

[7] Federal Transit Administration (FTA), 2018. Transit Noise and Vibration Impact Assessment Manual, FTA Report No.0123, September.

[8] California Department of Transportation (Caltrans), 2020. Transportation and Construction Vibration Guidance Manual.

Sources: City of Novato Code of Ordinance Division 19.22, Table 3-5

ASSESSMENT METHODOLOGY

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the project would comply with construction hours established in City of Novato Municipal Code and therefore would be exempt from the performance standards presented in Table 15. To evaluate potential impacts to nearby noise-sensitive receptors during construction, the FTA's noise threshold of 90 dBA Leq is used in this analysis.

For construction vibration, the Caltrans threshold of 0.3 in/sec for older residential buildings is used to evaluate potential structural impacts at nearby sensitive receptors. The FTA thresholds of 80 VdB and 83 VdB are used in this analysis to evaluate disturbance to residences and buildings where people normally sleep and to institutional land uses with primarily daytime use (such as schools), respectively.

The performance standards established in the City of Novato Municipal Code Division 19.22.070, as presented in Table 15, are not directly applicable to the project because some of the alternative site locations are within the City right of way, which is not representative of a typical land-use parcel boundary. If the alternative site locations were within a typical parcel boundary, then project noise levels could be compared to the 70 dBA threshold for an industrial land use in accordance with the Municipal Code. However, because the proposed alternative site locations are generally surrounded by residential land uses, the noise levels thresholds for residential land uses were applied in this analysis to evaluate the potential noise impacts at those receiving land uses. Because the ambient noise levels in the vicinity of the proposed alternative site locations, as presented in Table 14, exceed the standards for residential land use listed in Table 15, the ambient noise levels are used as the receiving land-use threshold for operational noise in accordance with City of Novato Municipal Code Division 19.22.070.

DISCUSSION OF IMPACTS

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?

Alternatives A through E - Less than Significant Impact

Construction Noise

The primary source of noise during construction would be off-road equipment activities on the project site. Construction noise levels would vary from day-to-day, depending on the number and type of equipment being used, the types and duration of activity being performed, the distance between the noise source and the receptor, and the presence or absence of barriers, if any, between the noise source and receptor. Pile driving, which can generate extreme levels of noise, is not proposed as part of the project.

The construction of the project is anticipated to begin in 2025 and would last for approximately 17 months for Alternatives A and B, and for approximately 28 months for Alternatives C through E. The types of construction equipment that would be used for the project were provided by the District (Appendix F). In accordance with guidance from FTA, daytime construction noise impacts were evaluated by quantifying the maximum noise levels that would result from the simultaneous operation of the two noisiest pieces of equipment near the perimeter of the project site closest to a sensitive receptor. Detailed calculations are provided in Appendix F.

As shown in Table 16, the project's construction noise levels were estimated at the nearest noise sensitive receptor for each construction phase for each proposed alternative site location. As shown in Table 16, for Alternatives A through E, project construction would not generate noise levels that could potentially exceed the FTA 90 dBA Leq noise threshold at the nearby noise sensitive receptors, and this impact would be less than significant for Alternatives A through E.

Table 16. Potential Noise Impacts from Project Construction (dBA Leq)

CONSTRUCTION PHASE	SITE 1 (ALTERNATIVE A)	SITE 2 (ALTERNATIVES B THROUGH E)	SITE 3 (ALTERNATIVE C)	SITE 4 (ALTERNATIVE D	SITE 5 (ALTERNATIVE E)
Existing Pump Station Removal	85	85	85	85	85
Pavement Removal for New Pipe	86	85	86	84	78
Trench Excavation and Pipe Construction	84	83	84	82	76
Asphalt Pavement of Road	86	85	86	84	78
New Pump Station Construction	83	73	76	72	75
Exceed the 90 dBA Threshold?	**No**	**No**	**No**	**No**	**No**

Source: Detailed calculations are provided in Appendix F.

Operational Noise

The primary source of noise during project operation would be the pumps within the new pump station. Alternative A would include four pumps at Site 1. Alternative B would include four pumps at Site 2. Alternatives C through E would include three pumps at Site 2, and two pumps at Sites 3 through 5. For each Alternative, the pumps would be hosted in an enclosed building structure. Standard building structures can provide an average of 20 dBA attenuation with windows closed. The noise levels generated by the pumps at each proposed alternative site location and at the corresponding nearest receptor were estimated and presented in Table 17. Detailed calculations are provided in Appendix F. As shown in Table 17, for Alternatives A through E, project operation would not generate noise levels that could potentially exceed the applicable noise thresholds at the nearby noise sensitive receptors, and this impact would be less than significant for Alternatives A through E.

Table 17. Potential Noise Impacts from Project Operation (dBA Leq)

ALTERNATIVE	NUMBER OF PUMPS	NOISE LEVELS AT NEAREST RECEPTOR[1]	ALLOWABLE MAXIMUM EXTERIOR NOISE LEVELS[2]	EXCEED THRESHOLD?
Site 1 (Alternative A)	4	59	63.3	**No**
Site 2	4	48	66.1	**No**

(Alternatives B through E)				
Site 3 (Alternative C)	2	51	60.2	**No**
Site 4 (Alternative D)	2	57	63.4	**No**
Site 5 (Alternative E)	2	50	63.4	**No**

Notes:
[1] The noise levels presented include a 20 dBA reduction in noise levels due to the enclosed building structure.
[2] Measured ambient noise levels at the proposed alternative site locations were used as performance standards in accordance with City of Novato Municipal Code Division 19.22.070.
Source: Detailed calculations are provided in Appendix F.

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

Alternatives A through E- Less than Significant Impact

Construction can result in varying degrees of ground vibration depending on the type of equipment and activity. The primary types of equipment that could generate substantial ground vibration during project construction and the associated vibration calculations are included in Appendix F. To evaluate the project's potential vibration effects on nearby sensitive receptors, a buffer distance that would be needed to avoid exceeding the FTA and Caltrans construction vibration thresholds listed above was estimated for each type of equipment. It was conservatively assumed that the equipment that could generate substantial ground vibration would be used near the project boundaries for each proposed alternative site location. The estimated buffer distances for potential disturbance and building damage are summarized in Table 18. Refence vibration levels and related calculations are included in Appendix F.

Table 18. Buffer Distances for Potential Vibration Impacts from Project Construction Equipment

EQUIPMENT	BUFFER DISTANCE FOR POTENTIAL VIBRATION IMPACTS (FEET)	
	Human Disturbance Impacts[1]	Building Damage Impacts[2]
Vibratory Roller	58	20
Loaded Trucks	31	10

Notes:
[1] The FTA thresholds of 83 VdB for institutional land uses from infrequent construction events was used to calculate the buffer distances from construction equipment.
[2] To be conservative, the Caltrans vibration threshold of 0.3 in/sec for older residential structures was used to calculate the buffer distances from construction equipment.
Source: Detailed calculations are provided in Appendix F.

As shown in Table 18, the construction equipment that would require the largest buffer distance to avoid generating vibration levels that could disturb institutional land uses with primarily daytime use is the vibratory roller. Vibration from a vibratory roller could exceed the 83 VdB threshold at institutional land uses located within 58 feet. As described above under *Sensitive Receptors*, the institutional land uses identified for each proposed alternative site location are located outside of the 58 feet buffer distance. Therefore, construction activities would not generate excessive vibration levels that could potentially disturb normal school operations. As nighttime work is not anticipated, vibration annoyance impacts on people within residential buildings related to nighttime construction would not occur. Therefore, for Alternatives A through

E, construction activities would not be expected to generate excessive vibration levels that would disturb nearby residents and institutional land uses, and this impact would be less than significant for Alternatives A through E.

As shown in Table 18, vibration from a vibratory roller could exceed the 0.3 in/sec PPV threshold for potential structural impacts to older residential buildings located within 20 feet. As described above under *Sensitive Receptors*, all receptors near the proposed alternative site locations and proposed pipe improvements would be located outside of the 20-foot buffer where a vibratory roller could exceed the 0.3 in/sec PPV threshold. Therefore, for Alternatives A through E, construction activities would not generate excessive vibration levels with the potential to damage adjacent buildings, and this impact would be less than significant for Alternatives A through E.

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?

Alternatives A through E – No Impact

The proposed alternative site locations are not located within the vicinity of a private airstrip or an airport land use plan, or within 2 miles of a public airport or public-use airport. The Marin County Gnoss Field Airport is located about 3.8 miles to the north of Site 1, and the San Rafael Airport is located about 2.3 miles to the south of Site 3. Therefore, the project would have no impact related to the exposure of people to excess noise levels from aircraft noise.

Conclusion

Under Alternatives A through E, the impact of the proposed project related to construction and operational noise would be less than significant. Alternative A would have the most substantial impact related to construction and operational noise. Under Alternatives A through E, the impact of the proposed project related to groundborne vibration and groundborne noise levels would be less than significant. Impacts of the proposed project related to the exposure of people to excess noise levels from aircraft noise would be the same for Alternatives A through E which would be no impact.

4.2.14 Population and Housing

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

DISCUSSION OF IMPACTS

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)?

Alternatives A through E - Less than Significant Impact

The proposed project would not induce substantial population growth in an area, either directly or indirectly. The purpose of the project is to replace the existing Lynwood PS to accommodate demand associated with projected future growth within the service area. In other words, the project is a proactive approach to accommodate projected demand associated with future growth that has been estimated by the City's Cycle Six Housing Element Update. The project itself would not extend infrastructure in a manner that would encourage or promote population growth in an area outside of what has been estimated by the City's Cycle Six Housing Element Update. Therefore, the project's impact related to population growth would be less than significant.

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

Alternatives A through E - No Impact

The project would not displace any persons or housing and would not necessitate the construction of replacement housing elsewhere. No impact would occur.

CONCLUSION

Under Alternatives A through E, the proposed project would have a less than significant impact regarding population and housing, and no mitigation measures would be required. The impact would be the same under each Alternative.

4.2.15 Public Services

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

ENVIRONMENTAL SETTING

Sunset Parkway Site (Site 1)

Lynwood Elementary School is located approximately 420 feet north of the Sunset Parkway Site and 560 feet west of the staging area on Sunset Parkway. Lynwood Hill Park is located approximately 0.25 miles southeast of the Sunset Parkway Site.

Ignacio Boulevard Site (Site 2)

Pacheco School is located approximately 650 feet north of the Ignacio Boulevard Site. The Ignacio Boulevard Site is located in an open space area along Arroyo San Jose Creek that is developed with a pedestrian and bicyclist path.

Bolling Drive Site (Site 3)

Novato Fire Station 65 is located approximately 110 feet south of the Bolling Drive Site and staging area adjacent to the site. The southern Bolling Drive Site staging area is located in the parking lot for Novato Fire Station 65. The Novato Children's Center is located approximately 615 feet west of the Bolling Drive Site, and the Hamilton School is located approximately 0.22 miles northwest. Clark A Blasdel Park is located approximately 340 feet northeast of the Bolling Drive Site.

Main Gate Road Site (Site 4)

The Hamilton School is located approximately 590 feet southwest of the Main Gate Road Site, and the Novato Charter School is located approximately 790 feet east.

C Street Site (Site 5)

The C Street Site is located on the baseball field that belongs to the Novato Charter School, and the Hamilton School is also located approximately 0.20 miles southwest of the site.

Existing PS Site

Lynwood Elementary School is located approximately 230 feet northwest of the Existing PS Site and 560 feet west of the staging area on Sunset Parkway. Lynwood Hill Park is located approximately 0.20 miles southeast of the Sunset Parkway Site.

DISCUSSION OF IMPACTS

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

- ***Fire Protection?***
- ***Police Protection?***
- ***Schools?***
- ***Parks?***
- ***Other Public Facilities?***

Alternatives A through E – No Impact

As described in Section 4.2.14, Population and Housing, the project would not induce population growth outside of what has been estimated by the City's Cycle Six Housing Element Update. As such, the project would not result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. The project would not include the provision of any new or physically altered governmental facilities. Therefore, no impact would occur.

CONCLUSION

Under Alternatives A through E, the proposed project would have no impact related to public services, and no mitigation measures would be required. The impact would be the same under each Alternative.

4.2.16 Recreation

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

ENVIRONMENTAL SETTING

Sunset Parkway Site (Site 1)

Lynwood Hill Park is located approximately 0.25 miles southeast of the Sunset Parkway Site.

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site is located in an open space area along Arroyo San Jose Creek that is developed with a pedestrian and bicyclist path.

Bolling Drive Site (Site 3)

The Bolling Drive Site is located within an open space area with hiking trails. Clark A Blasdel Park is located approximately 340 feet northeast of the Bolling Drive Site.

Main Gate Road Site (Site 4)

A baseball field for the Hamilton School is located approximately 250 feet west of the Main Gate Road Site.

C Street Site (Site 5)

The C Street Site is located in a baseball field that belongs to the Novato Charter School.

Existing PS Site

Lynwood Hill Park is located approximately 0.20 miles southeast of the Existing PS Site.

DISCUSSION OF IMPACTS

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Alternatives A through E – No Impact

As discussed in Section 4.2.14, Population and Housing, the project would not cause substantial population growth outside of what has been estimated by the City's Cycle Six Housing Element Update. Therefore the project would not increase the use of existing neighborhood and regional

parks or other recreational facilities such that physical deterioration of the facility would occur or be accelerated. No impact would occur.

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

Alternatives A through E – No Impact

The project would not include any recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. No impact would occur.

CONCLUSION

Under Alternatives A through E, the proposed project would have no impact related to recreation and no mitigation measures would be required. The impact would be the same under each Alternative.

4.2.17 Transportation

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b)	Conflict or be inconsistent with CEQA Guidelines section 15064.3, 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

Sunset Parkway Site (Site 1)

The Sunset Parkway Site is situated within a median of Sunset Parkway between its intersection with Cambridge Street and Monte Maria Avenue. Sunset Parkway is a two-lane road separated by medians from its intersection with Cambridge Street northeast towards where the road ends past its intersection with Greenwood Drive. The staging area on Sunset Parkway is situated within a median at the end of Sunset Parkway just past Greenwood Drive. Street parking is available on both sides of Sunset Parkway.

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site is situated in an open space area adjacent to Ignacio Boulevard at the southeastern corner of its intersection with Palmer Drive. Ignacio Boulevard is a four-lane roadway separated by landscaped medians. The intersection at Ignacio Boulevard and Palmer drive is stoplight controlled. No on-street parking is available along Ignacio Boulevard in the project site area; however, a bike lane is present on both sides of Ignacio Boulevard.

Bolling Drive Site (Site 3)

The Bolling Drive Site is situated in an open space area adjacent to Bolling Circle just north of its intersection with Bolling Drive. Bolling Drive and Bolling Circle are both two-lane roadways. The Bolling Drive Site southern staging area is situated within the parking lot for the Novato Fire Station 65. The intersection at Bolling Drive and Bolling Circle is moderate by all way stop signs.

Main Gate Road Site (Site 4)

The Main Gate Road Site is situated in an open space area adjacent to the southern side of Main Gate Road. Main Gate Road is a two-lane road separated by landscaped medians in the area of the project site. No on-street parking is available along Main Gate Road and no bike lanes are present. Sidewalks are present along both sides of the road.

C Street Site (Site 5)

The C Street Site is situated in a baseball field at the northeastern corner of the intersection of Main Gate Road and C Street. Main Gate Road is a two-lane road separated by landscaped medians in the area of the project site. No on-street parking is available along Main Gate Road and no bike lanes are present. Sidewalks are present along both sides of the road. C Street is a two-lane road with no sidewalks or bike lanes. The intersection of C Street and Main Gate Road is moderated by a single stop sign at the C Street exit onto Main Gate Road.

Existing PS Site

The Existing PS Site is situated within a median of Sunset Parkway between its intersection with South Novato Boulevard and Lynwood Drive. Sunset Parkway is a two-lane road separated by medians from its intersection with Cambridge Street northeast towards where the road ends past its intersection with Greenwood Drive. The staging area on Sunset Parkway is situated within a median at the end of Sunset Parkway just past Greenwood Drive. Street parking is available on both sides of Sunset Parkway.

REGULATORY BACKGROUND

City of Novato General Plan

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the City's General Plan contains the following relevant policies related to transportation:

> **Policy MO 1: Level of Service Standards.** Establish traffic Level of Service (LOS) standards as follows for use in evaluating the impacts of proposed development projects so the project can be redesigned or effective mitigation measures can be implemented, making improvements to the roadway system, and determining appropriate traffic impact fees. Continue to consider LOS standards in evaluating the merits of proposed development or traffic infrastructure projects in addition to consideration of standards associated with Vehicle Miles Traveled (VMT) in the required environmental review process.
>
> Acceptable LOS standards for intersections in the City are:
>
> a. At intersections with signals or four-way stop signs: operation at LOS D, and
> b. At intersections with stop signs on side streets only: operation at LOS E.
>
> **Policy MO 6: Through Traffic on Existing Local Streets.** Reduce through traffic on existing local streets, as needed and feasible, to preserve the peace and quiet of residential areas. Slow traffic through traffic calming techniques where advisable and feasible.

DISCUSSION OF IMPACTS

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

Alternative A – Less than Significant Impact

The City's General Plan is the only applicable plan addressing the circulation system. The City maintains LOS standards for intersections including intersections with signals or four-way stop signs must operate at LOS D or higher, and intersections with stop signs on side streets only

must operate at LOS E or higher. The intersection of Sunset Parkway and Monte Maria Avenue near the Sunset Parkway Site is controlled with stop signs on side streets only and therefore must operate at LOS E or above. The intersection of Sunset Parkway and Cambridge Street near the Sunset Parkway Site is controlled by four-way stop signs and therefore must operate at LOS D or above. The intersection of Sunset Parkway and South Novato Boulevard near the Existing PS Site is signal controlled and must operate at LOS D or above. The intersection of Sunset Parkway and Lynwood Drive near the Existing PS Site is controlled by stop signs on side streets only and must operate at LOS E or above.

As described in Section 3.0, Project Description, Alternative A would require approximately 2,238 worker commute trips and 37 vendor trips over the entire 17-month construction duration. A total of 106 demolition haul trips and 112 import haul trips for soil, aggregate, and concrete would be required. Workers would park along nearby streets and construction equipment would be staged either within the project sites or within the staging are on Sunset Parkway. The most trips are anticipated to occur in April 2025, in which 266 total trips for workers, vendors, and import and export would be required. Assuming 22 working days in April of 2025, this would constitute an average of 12 trips per day. Twelve trips per day would not cause a significant impact on existing LOS at intersections in the project area, and therefore the project would not conflict with the City's LOS standards defined by the General Plan. The District is also exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Furthermore, construction equipment and vehicles would park along nearby streets in designated parking areas, or within the project site or staging area. No vehicles would occupy unauthorized parking spaces within Sunset Parkway or any nearby roadways, and therefore the project would not generate delays which would cause significant traffic. The impact would be less than significant.

Alternative B - Less than Significant Impact

The intersection of Sunset Parkway and South Novato Boulevard near the Existing PS Site is signal controlled and must operate at LOS D or above. The intersection of Sunset Parkway and Lynwood Drive near the Existing PS Site is controlled by stop signs on side streets only and must operate at LOS E or above. The intersection of Ignacio Boulevard and Palmer Drive near the Ignacio Boulevard Site is signal controlled and must operate at LOS D or above.

As described in Section 3.0, Project Description, Alternative B would require approximately 2,652 worker commute trips and 54 vendor trips over the entire 17-month construction duration. A total of 309 demolition haul trips and 283 import haul trips for soil, aggregate, and concrete would be required. Workers would park along nearby streets and construction equipment would be staged either within the project sites or within the staging areas. The most trips are anticipated to occur in April 2025, in which 410 total trips for workers, vendors, and import and export would be required. Assuming 22 working days in April of 2025, this would constitute an average of 19 trips per day. However, these trips would be split between two areas near the Ignacio Boulevard Site and Existing PS Site. Considering a conservative estimate that 75 percent of trips would occur in either area, a total of 14 additional trips per day would occur in either project site area. Fourteen trips per day would not cause a significant impact on existing LOS at intersections in the project areas, and therefore the project would not conflict with the City's LOS standards defined by the General Plan. The District is also exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Furthermore, construction equipment and vehicles would park along nearby streets in designated parking areas, or within the project sites or staging areas. No vehicles would occupy unauthorized parking spaces within Sunset

Parkway, Ignacio Boulevard, or any nearby roadways, and therefore the project would not generate delays which would cause significant traffic. The impact would be less than significant.

Alternative C - Less than Significant Impact

The intersection of Sunset Parkway and South Novato Boulevard near the Existing PS Site is signal controlled and must operate at LOS D or above. The intersection of Sunset Parkway and Lynwood Drive near the Existing PS Site is controlled by stop signs on side streets only and must operate at LOS E or above. The intersection of Ignacio Boulevard and Palmer Drive near the Ignacio Boulevard Site is signal controlled and must operate at LOS D or above. The intersection of Bolling Circle and Bolling Drive near the Bolling Drive Site is controlled by all-way stop signs and is required to operate at LOS D or above.

As described in Section 3.0, Project Description, Alternative C would require approximately 3,968 worker commute trips and 97 vendor trips over the entire 25-month construction duration. A total of 535 demolition haul trips and 504 import haul trips for soil, aggregate, and concrete would be required. The most trips are anticipated to occur in March 2025, in which 484 total trips for workers, vendors, and import and export would be required. Assuming 21 working days in March of 2025, this would constitute an average of 23 trips per day. However, these trips would be split between three areas near the Bolling Drive Site, Ignacio Boulevard Site, and Existing PS Site. Considering a conservative estimate that 50 percent of trips would occur in any project area, a total of 12 additional trips per day would occur in either project site area. Twelve trips per day would not cause a significant impact on existing LOS at intersections in the project areas, and therefore the project would not conflict with the City's LOS standards defined by the General Plan. The District is also exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Furthermore, construction equipment and vehicles would park along nearby streets in designated parking areas, or within the project sites or staging areas. No vehicles would occupy unauthorized parking spaces within Sunset Parkway, Ignacio Boulevard, Bolling Circle, or any nearby roadways, and therefore the project would not generate delays which would cause significant traffic. The impact would be less than significant.

Alternative D - Less than Significant Impact

The intersection of Sunset Parkway and South Novato Boulevard near the Existing PS Site is signal controlled and must operate at LOS D or above. The intersection of Sunset Parkway and Lynwood Drive near the Existing PS Site is controlled by stop signs on side streets only and must operate at LOS E or above. The intersection of Ignacio Boulevard and Palmer Drive near the Ignacio Boulevard Site is signal controlled and must operate at LOS D or above. The nearest intersection to the Main Gate Road Site is the intersection of Main Gate Road and C Street, which is stop controlled on side streets only, and therefore must operate at LOS E or above.

As described in Section 3.0, Project Description, Alternative D would require approximately 3,712 worker commute trips and 80 vendor trips would be required over the entire 25-month construction duration. A total of 353 demolition haul trips and 342 import haul trips for soil, aggregate, and concrete would be required. The most trips are anticipated to occur in March 2025, in which 465 total trips for workers, vendors, and import and export would be required. Assuming 21 working days in March of 2025, this would constitute an average of 22 trips per day. However, these trips would be split between three areas near the Main Gate Road Site, Ignacio Boulevard Site, and Existing PS Site. Considering a conservative estimate that 50 percent of trips would occur in any project area, a total of 11 additional trips per day would occur in either project site area. Eleven trips per day would not cause a significant impact on existing LOS at intersections in the project areas, and therefore the project would not conflict with the

City's LOS standards defined by the General Plan. The District is also exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Furthermore, construction equipment and vehicles would park along nearby streets in designated parking areas, or within the project sites or staging areas. No vehicles would occupy unauthorized parking spaces within Sunset Parkway, Ignacio Boulevard, Main Gate Road, or any nearby roadways, and therefore the project would not generate delays which would cause significant traffic. The impact would be less than significant.

Alternative E – Less than Significant Impact

The intersection of Sunset Parkway and South Novato Boulevard near the Existing PS Site is signal controlled and must operate at LOS D or above. The intersection of Sunset Parkway and Lynwood Drive near the Existing PS Site is controlled by stop signs on side streets only and must operate at LOS E or above. The intersection of Ignacio Boulevard and Palmer Drive near the Ignacio Boulevard Site is signal controlled and must operate at LOS D or above. The intersection of Main Gate Road and C Street is stop controlled on side streets only, and therefore must operate at LOS E or above.

As described in Section 3.0, Project Description, Alternative E would require approximately 3,688 worker commute trips and 80 vendor trips over the entire 25-month construction duration. A total of 328 demolition haul trips and 318 import haul trips for soil, aggregate, and concrete would be required. The most trips are anticipated to occur in March 2025, in which 461 total trips for workers, vendors, and import and export would be required. Assuming 21 working days in March of 2025, this would constitute an average of 22 trips per day. However, these trips would be split between three areas near the C Street Site, Ignacio Boulevard Site, and Existing PS Site. Considering a conservative estimate that 50 percent of trips would occur in any project area, a total of 11 additional trips per day would occur in either project site area. Eleven trips per day would not cause a significant impact on existing LOS at intersections in the project areas, and therefore the project would not conflict with the City's LOS standards defined by the General Plan. The District is also exempt from the City of Novato local ordinances with the exception of an Encroachment Permit. Furthermore, construction equipment and vehicles would park along nearby streets in designated parking areas, or within the project sites or staging areas. No vehicles would occupy unauthorized parking spaces within Sunset Parkway, Ignacio Boulevard, C Street, or any nearby roadways, and therefore the project would not generate delays which would cause significant traffic. The impact would be less than significant.

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

Alternative A - Less than Significant Impact

In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Section 21099 of the PRC states that the criteria for determining the significance of transportation impacts must promote: (1) reduction of GHG emissions; (2) development of multimodal transportation networks; and (3) a diversity of land uses. Section 21099 subd. (b)(1) further directed the Office of Planning and Research (OPR) to prepare and develop criteria for determining significance. The OPR identifies a screening threshold for small, land use projects as a project that generates or attracts fewer than 110 trips per day. Projects that generate fewer than this threshold may be assumed to cause a less-than-significant transportation impact (OPR 2018).

As described above in Impact a), the project would generate a maximum average of 12 trips per day in April 2025. As such, the daily number of vehicle trips associated with the project would

not exceed 110 trips per day, which is the OPR's screening threshold for conducting a VMT analysis. Once constructed, the project would only require occasional maintenance inspection, which would be similar to existing conditions. The project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

Alternative B - Less than Significant Impact

As described above in Impact a), the project would generate a maximum average of 19 trips per day in April 2025. As such, the daily number of vehicle trips associated with the project would not exceed 110 trips per day, which is the OPR's screening threshold for conducting a VMT analysis. Once constructed, the project would only require occasional maintenance inspection, which would not generate 110 trips per day. The project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

Alternative C - Less than Significant Impact

As described above in Impact a), the project would generate a maximum average of 23 trips per day in March 2025. As such, the daily number of vehicle trips associated with the project would not exceed 110 trips per day, which is the OPR's screening threshold for conducting a VMT analysis. Once constructed, the project would only require occasional maintenance inspection, which would be similar to existing conditions. The project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

Alternative D - Less than Significant Impact

As described above in Impact a), the project would generate a maximum average of 22 trips per day in March 2025. As such, the daily number of vehicle trips associated with the project would not exceed 110 trips per day, which is the OPR's screening threshold for conducting a VMT analysis. Once constructed, the project would only require occasional maintenance inspection, which would be similar to existing conditions. The project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact would be less than significant.

Alternative E – Less than Significant Impact

As described above in Impact a), the project would generate a maximum average of 22 trips per day in March 2025. As such, the daily number of vehicle trips associated with the project would not exceed 110 trips per day, which is the OPR's screening threshold for conducting a VMT analysis. Once constructed, the project would only require occasional maintenance inspection, which would be similar to existing conditions. The project would not conflict with CEQA Guidelines section 15064.3, subdivision (b). The impact 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)?

Alternatives A through E – Less than Significant Impact

Construction of the proposed project would not increase hazards as all construction work and staging would take place within designated project sites and staging areas. No permanent improvements would occur outside of any median within the public right of way. Temporary construction work and staging of construction equipment consistent with the City's encroachment permit requirements would occur within the public right-of-way. Construction of new infrastructure at any of the project sites would not be incompatible with current land uses of the sites and would not create hazards due to a geometric design feature. Installation of pipeline infrastructure within the public right-of-way would not result in an incompatible use or

geometric design feature because the new infrastructure would be located underground. Therefore, the project would not increase hazards due to a geometric design feature or incompatible use. The impact would be less than significant.

d) Result in inadequate emergency access?

Alternatives A through E – Less than Significant Impact

During construction, all project work and equipment staging would occur within designated project sites and staging areas. All work within the public right-of-way would be consistent with the requirements of the encroachment permit. If lane closure is necessary during construction activities, such as open trenching and pipeline installation, proper traffic controls would be provided to ensure adequate emergency access. Operation of the proposed new infrastructure would not result in inadequate emergency access as the sites are not located within the roadway and do not obstruct any occupied dwellings. Therefore, the project would not result in inadequate emergency access. The impact would be less than significant.

CONCLUSION

Under Alternatives A through E, the project would result in less than significant impacts related to conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. The impact would be the same under each Alternative. Under Alternatives A through E, the project would result in less than significant impacts related to conflict or inconsistency with CEQA Guidelines section 15064.3, subdivision (b). The impact would be the same under each Alternative. Under Alternatives A through E, the project would result in less than significant impacts related to increased hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), or inadequate emergency access. The impact would be the same under each Alternative.

4.2.18 Tribal Cultural Resources

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

ENVIRONMENTAL SETTING

A description of the environmental setting related to tribal cultural resources can be found in Section 5.2.5, Cultural Resources.

REGULATORY BACKGROUND

Tribal Cultural Resources Assembly Bill 52 (AB 52)

AB 52 (Chapter 532, Statutes 2014) required an update of the CEQA Guidelines to include questions related to impacts to tribal cultural resources. AB 52 establishes a consultation process with all California Native American Tribes on the Native American Heritage Commission List, Federal and Non-Federal Recognized Tribes. AB 52 also establishes a new class of resources: Tribal Cultural Resources. Key components of AB 52 include consideration of Tribal Cultural Values in determination of project impacts and mitigation, and required Tribal notice and meaningful consultation.

PRC Section 21080.3.2(b) states that consultation ends when either 1) parties agree to mitigation measures or avoid a significant effect on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort concludes that mutual agreement cannot be reached.

State of California Public Resources Code

Section 21074 of the PRC defines historical resources related to tribal cultural resources.

a) "Tribal cultural resources" are either of the following:
    1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
        A. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
        B. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
    2. 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 Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Section 5020.1(k) defines "Local register of historical resources" as a list of properties officially designated or recognized as historically significant by a local government pursuant to a local ordinance or resolution.

Section 5024.1 is the establishment of the California Register of Historical Resources.

METHODOLOGY

As part of the Cultural Resources Study, Origer sent a request to the NAHC seeking information from the Sacred Lands File and the names of Native American individuals and groups that would be appropriate to contact regarding the proposed project. The NAHC replied with a response dated November 16, 2023, stating that the Sacred Lands File results showed the presence of cultural resources within the township and range of the project sites. The NAHC recommended that the Federated Indians of Graton Rancheria be contacted for additional details. The NAHC also sent a list of Native American tribes to contact for additional information, and letters were sent to the following groups:

- Federated Indians of Graton Rancheria
- Guidiville Indian Rancheria

An email response from Buffy McQuillen, Tribal Historic Preservation Officer for the Federated Indians of Graton Rancheria stated that the project sites are within the Tribe's ancestral territory and requested the research results and recommendations of the Cultural Resources Study. No

other comments were received as of the date of this IS/MND. Pursuant to AB 52, the District also contacted the Federated Indians of Graton Rancheria and the Guidiville Indian Rancheria to initiate Tribal Resources Consultation. No responses have been received from the tribes as of the date of this IS/MND.

DISCUSSION OF IMPACTS

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 size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

ii) ***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.***

Alternative A - Less than Significant Impact with Mitigation Incorporated

The NAHC reported that the Sacred Lands File results showed the presence of cultural resources within the township and range of the project sites. No tribal cultural resources on the Sunset Parkway Site, Existing PS Site, or staging area on Sunset Parkway have been identified by previous cultural resources study or by Native American individuals or groups to date. However, as described in Section 4.2.5, Cultural Resources, ground-disturbing activities during construction may lead to the discovery of buried archaeological resources on the project sites, which may include tribal cultural resources. The project will implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources, which will ensure that the project will not damage any unknown cultural resources, including tribal cultural resources, that may be present on the project sites.

AB 52 (Chapter 532, Statutes 2014) requires a direct consulting relationship between tribes and the lead agency. The District has initiated Tribal consultation pursuant to AB 52 by sending letters to the Federated Indians of Graton Rancheria and Guidiville Indian Rancheria. The District will follow the five-step process outlined by the NAHC to meet their obligations under AB 52 and CEQA to make a good faith effort to conduct tribal consultation under State guidelines. An overview of this process can be found at https://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf.

Alternative B – Less than Significant Impact with Mitigation Incorporated

The NAHC reported that the Sacred Lands File results showed the presence of cultural resources within the township and range of the project sites. No tribal cultural resources on the Ignacio Boulevard Site and staging area, Existing PS Site, or staging area on Sunset Parkway have been identified by previous cultural resources study or by Native American individuals or groups to

date. However, as described in Section 4.2.5, Cultural Resources, ground-disturbing activities during construction may lead to the discovery of buried archaeological resources on the project sites, which may include tribal cultural resources. The project will implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources, which will ensure that the project will not damage any unknown cultural resources, including tribal cultural resources, that may be present on the project sites.

AB 52 (Chapter 532, Statutes 2014) requires a direct consulting relationship between tribes and the lead agency. The District has initiated Tribal consultation pursuant to AB 52 by sending letters to the Federated Indians of Graton Rancheria and Guidiville Indian Rancheria. The District will follow the five-step process outlined by the NAHC to meet their obligations under AB 52 and CEQA to make a good faith effort to conduct tribal consultation under State guidelines. An overview of this process can be found at https://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf.

Alternative C – Less than Significant Impact with Mitigation Incorporated

The NAHC reported that the Sacred Lands File results showed the presence of cultural resources within the township and range of the project sites. No tribal cultural resources on the Bolling Drive Site and staging areas, Ignacio Boulevard Site and staging area, Existing PS Site, or staging area on Sunset Parkway have been identified by previous cultural resources study or by Native American individuals or groups to date. However, as described in Section 4.2.5, Cultural Resources, ground-disturbing activities during construction may lead to the discovery of buried archaeological resources on the project sites, which may include tribal cultural resources. The project will implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources, which will ensure that the project will not damage any unknown cultural resources, including tribal cultural resources, that may be present on the project sites.

AB 52 (Chapter 532, Statutes 2014) requires a direct consulting relationship between tribes and the lead agency. The District has initiated Tribal consultation pursuant to AB 52 by sending letters to the Federated Indians of Graton Rancheria and Guidiville Indian Rancheria. The District will follow the five-step process outlined by the NAHC to meet their obligations under AB 52 and CEQA to make a good faith effort to conduct tribal consultation under State guidelines. An overview of this process can be found at https://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf.

Alternative D – Less than Significant Impact with Mitigation Incorporated

The NAHC reported that the Sacred Lands File results showed the presence of cultural resources within the township and range of the project sites. No tribal cultural resources on the Main Gate Road Site and staging area, Ignacio Boulevard Site and staging area, Existing PS Site, or staging area on Sunset Parkway have been identified by previous cultural resources study or by Native American individuals or groups to date. However, as described in Section 4.2.5, Cultural Resources, ground-disturbing activities during construction may lead to the discovery of buried archaeological resources on the project sites, which may include tribal cultural resources. The project will implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources, which will ensure that the project will not damage any unknown cultural resources, including tribal cultural resources, that may be present on the project sites. As the Main Gate Road Site was determined to have a high potential for buried archaeological resources, Alternative D would also implement Mitigation Measure CUL-2, which requires that construction crews receive an archaeological training session prior to the commencement of

excavation work, and that an archaeologist who meets the Secretary of the Interiors Standards for Archaeology monitor all excavation work on-site.

AB 52 (Chapter 532, Statutes 2014) requires a direct consulting relationship between tribes and the lead agency. The District has initiated Tribal consultation pursuant to AB 52 by sending letters to the Federated Indians of Graton Rancheria and Guidiville Indian Rancheria. The District will follow the five-step process outlined by the NAHC to meet their obligations under AB 52 and CEQA to make a good faith effort to conduct tribal consultation under State guidelines. An overview of this process can be found at https://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf.

Alternative E – Less than Significant Impact with Mitigation Incorporated

The NAHC reported that the Sacred Lands File results showed the presence of cultural resources within the township and range of the project sites. No tribal cultural resources on the C Street Site and staging area, Ignacio Boulevard Site and staging area, Existing PS Site, or staging area on Sunset Parkway have been identified by previous cultural resources study or by Native American individuals or groups to date. However, as described in Section 4.2.5, Cultural Resources, ground-disturbing activities during construction may lead to the discovery of buried archaeological resources on the project sites, which may include tribal cultural resources. The project will implement Mitigation Measure CUL-1 pertaining to the accidental discovery of buried archaeological resources, which will ensure that the project will not damage any unknown cultural resources, including tribal cultural resources, that may be present on the project sites. As the C Street Site was determined to have a high potential for buried archaeological resources, Alternative D would also implement Mitigation Measure CUL-2, which requires that construction crews receive an archaeological training session prior to the commencement of excavation work, and that an archaeologist who meets the Secretary of the Interiors Standards for Archaeology monitor all excavation work on-site.

AB 52 (Chapter 532, Statutes 2014) requires a direct consulting relationship between tribes and the lead agency. The District has initiated Tribal consultation pursuant to AB 52 by sending letters to the Federated Indians of Graton Rancheria and Guidiville Indian Rancheria. The District will follow the five-step process outlined by the NAHC to meet their obligations under AB 52 and CEQA to make a good faith effort to conduct tribal consultation under State guidelines. An overview of this process can be found at https://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf.

CONCLUSION

Under Alternatives A through E, impacts related to tribal cultural resources could be mitigated to a less-than-significant level with the implementation of mitigation measures. No tribal cultural resources on any of the sites have been identified by previous cultural resources study or by Native American individuals or groups to date.

4.2.19 Utilities and Service Systems

Would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction 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

Water in the City of Novato is supplied by the District. Drinking water in the City comes from two primary sources: a groundwater aquifer adjacent to the Russian River, and Stafford Lake. Recycled water is used for irrigation and some commercial applications. The District purchases approximately 80 percent of its water supply from the SCWA. The SCWA's water is collected 60 to 100 feet below the gravel beds adjacent to the Russian River and is conveyed to the District's Novato Water System via a 7.1-mile-long aqueduct known as the North Marin Aqueduct (NMA). Approximately 20 percent of the District's water supply comes from Stafford Lake, which is situated about ½ mile outside of the City limits to the northeast.

City of Novato General Plan

While the District is exempt from the City of Novato local ordinances with the exception of an Encroachment Permit, the City of Novato General Plan contains the following policies related to

utilities and service systems:

> **Policy LU 3: Anticipated Growth.** Plan the City's infrastructure and service levels to provide capacity for the total amount of development expected by 2035 as shown in Table GP-4.

DISCUSSION OF IMPACTS

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?

Alternatives A through E – Less than Significant Impact with Mitigation Incorporated

The proposed project would include the construction of either one or two new PS and associated water pipelines. Potential environmental effects of the proposed new water facilities are discussed throughout this IS/MND. Section 4.2.21, Mandatory Findings of Significance, describes the cumulative impacts of project alternatives. As described throughout this IS/MND, the project would not result in any significant environmental impacts; all impacts would be mitigated to a less than significant level with implementation of mitigation measures described throughout this document. Therefore, the environmental effects of the proposed new water facilities included in the project would be less than significant with mitigation incorporated.

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

Alternatives A through E – Less than Significant Impact

The District's 2020 Urban Water Management Plan (UWMP) provides an analysis of the District's projected and historical water demands, water supplies, supply reliability and potential vulnerabilities, water shortage contingency planning, and demand management programs. The UWMP estimates, taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, that potable and raw water demand within the District's service area is projected to increase to 10.50 acre-feet per year by 2045, which represents an increase of 23 percent compared to the 2016-2020 average. As described above, water supply for the District primarily comes from purchased water from the SCWA's Russian River Project.

The project is being proposed for the purpose of replacing the Lynwood PS due to its overall poor condition, and to meet projected future demands within the service area that may require the capacity of the existing PS to be increased. The District, as the lead agency, has considered the information contained in the UWMP and has determined that the proposed project is a necessary infrastructure upgrade to continue providing water throughout its service area. The District has considered its water supply reliability in planning future infrastructure upgrades, such as the proposed project, and is responsible for addressing and planning for water supply shortages. The District also updates its Water Shortage Contingency Plan (WSCP) every five years, which aims to mitigate potential water supply deficiencies in dry and multiple dry years. The District is aware of future water demand projections and has determined that the proposed project is necessary to continue providing water to its service area. The District, as the CEQA lead agency, will ensure that there are sufficient water supplies to serve the project and other

reasonably foreseeable future development during normal, dry, and multiple dry years. The impact would be less than significant.

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?

Alternatives A through E – No Impact

As discussed in Section 4.2.14, Population and Housing, the project would not cause substantial population growth outside of what has been estimated by the City's Cycle Six Housing Element Update. As such, the project would not impact demand for wastewater treatment during construction or operation. No impact would occur.

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?

Alternatives A through E – Less than Significant Impact

The project would generate construction and demolition (C&D) waste during construction, which would need to be disposed of at a facility that accepts C&D waste. Project operations would not cause a significant increase in solid waste generation. The impact would be less than significant.

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

Alternatives A through E - Less than Significant Impact

Project construction activities would generate C&D waste from the demolition of the existing Lynwood PS and construction of one or two new PS. The project would comply with all federal, state, and local management and reduction statutes and regulations related to solid waste. C&D waste from project construction would be disposed of in accordance with all federal, state, and local regulations. Therefore, the impact of the project related to solid waste requirements would be less than significant.

CONCLUSION

Under Alternatives A through E, the project would include the construction of new and expanded water infrastructure, the potential environmental impacts of which are discussed throughout this IS/MND. Under Alternatives A through E, impacts related to water supply and wastewater treatment would be similar, and no Alternative would have a less or more substantial impact. Alternatives A and B would generate the least amount of C&D waste as only one new PS would be constructed under those alternatives. The impact related to solid waste would be more substantial under Alternatives C, D, and E because the construction of two new PS would generate more C&D waste; however, the impact would remain less than significant.

4.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:		*Potentially Significant Impact*	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b)	Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c)	Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

ENVIRONMENTAL SETTING

The project sites are located in a Local Responsibility Area within the City of Novato. The City is generally surrounded by State Responsibility Area (SRA) High Fire Hazard Severity Zones (FHSZ)to the west.

Sunset Parkway Site (Site 1)

The Sunset Parkway Site is situated within the Wildland Urban Interface (WUI) approximately 0.80 miles southwest of an SRA High FHSZ (Calfire 2023; City of Novato 2020a).

Ignacio Boulevard Site (Site 2)

The Ignacio Boulevard Site is situated within the WUI approximately 1.30 miles west of an SRA High FHSZ (City of Novato 2020a; Calfire 2023).

Bolling Drive Site (Site 3)

The Bolling Drive Site is situated approximately 0.65 miles north of an SRA Moderate FHSZ and approximately 0.60 miles northeast of a High FHSZ (Calfire 2023). The site is not situated within the WUI (City of Novato 2020a).

Main Gate Road Site (Site 4)

The Main Gate Road Site is situated approximately 0.40 miles northwest of an SRA Moderate FHSZ (Calfire 2023). The site is not situated within the WUI (City of Novato 2020a).

C Street Site (Site 5)

The C Street Site is situated approximately 0.30 miles northwest of an SRA Moderate FHSZ (Calfire 2023). The site is not situated within the WUI (City of Novato 2020a).

Existing PS Site

The Existing PS Site is situated within the WUI approximately 0.80 miles southwest of an SRA High FHSZ (Calfire 2023; (City of Novato 2020a).

DISCUSSION OF IMPACTS

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

Alternative A -Less than Significant Impact

As discussed in Section 4.2.10, Hazards and Hazardous Materials, the project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. The Existing PS Site and staging area on Sunset Parkway are not located along a designated evacuation route. The Sunset Parkway Site is situated in a median of Sunset Parkway in a section that is designated as a secondary evacuation route (Marin County 2023). The project would not stage any equipment outside of the project site and staging area, and therefore the project would not obstruct the evacuation route during construction. Operational conditions would be similar to existing conditions because the new PS would be contained within the roadway median. The impact would be less than significant.

Alternative B – Less than Significant Impact

As discussed in Section 4.2.10, Hazards and Hazardous Materials, the project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. The Existing PS Site and staging area on Sunset Parkway are not located along a designated evacuation route. The Ignacio Boulevard Site is situated in an open space area along Ignacio Boulevard across from its intersection with Palmer Drive. Ignacio Boulevard is a designated primary evacuation route and Palmer Drive is a designated secondary evacuation route (Marin County 2023). The project would not stage any equipment outside of the project site and staging area, and therefore the project would not obstruct the evacuation route during construction. Operational conditions would be similar to existing conditions because the new PS would be contained within the existing open space area. The impact would be less than significant.

Alternative C – Less than Significant Impact

As discussed in Section 4.2.10, Hazards and Hazardous Materials, the project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. The Existing PS Site and staging area on Sunset Parkway are not located along a designated evacuation route. The Ignacio Boulevard Site is situated in an open space area along Ignacio Boulevard across from its intersection with Palmer Drive. Ignacio Boulevard is a designated primary evacuation route and Palmer Drive is a designated secondary evacuation route (Marin County 2023). The Bolling Drive Site is situated in an open space area at the intersection of Bolling Circle and Bolling Drive, both of which are designated secondary evacuation routes (Marin County 2023). The project would not stage any equipment outside of the project site and staging area, and therefore the project would not obstruct the evacuation

route during construction. Operational conditions would be similar to existing conditions because the new PS would be contained within the existing open space area. The impact would be less than significant.

Alternative D – Less than Significant Impact

As discussed in Section 4.2.10, Hazards and Hazardous Materials, the project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. The Existing PS Site and staging area on Sunset Parkway are not located along a designated evacuation route. The Ignacio Boulevard Site is situated in an open space area along Ignacio Boulevard across from its intersection with Palmer Drive. Ignacio Boulevard is a designated primary evacuation route and Palmer Drive is a designated secondary evacuation route (Marin County 2023). The Main Gate Road Site is situated in an open space area along Main Gate Road, which is a designated secondary evacuation route (Marin County 2023). The project would not stage any equipment outside of the project site and staging area, and therefore the project would not obstruct the evacuation route during construction. Operational conditions would be similar to existing conditions because the new PS would be contained within the existing open space area. The impact would be less than significant.

Alternative E – Less than Significant Impact

As discussed in Section 4.2.10, Hazards and Hazardous Materials, the project would not impair implementation of or physically interfere with an adopted emergency response plan or evacuation plan. The Existing PS Site and staging area on Sunset Parkway are not located along a designated evacuation route. The Ignacio Boulevard Site is situated in an open space area along Ignacio Boulevard across from its intersection with Palmer Drive. Ignacio Boulevard is a designated primary evacuation route and Palmer Drive is a designated secondary evacuation route (Marin County 2023). The C Street Site is situated in a baseball field along Main Gate Road, which is a designated secondary evacuation route (Marin County 2023). The project would not stage any equipment outside of the project site and staging area, and therefore the project would not obstruct the evacuation route during construction. Operational conditions would be similar to existing conditions because the new PS would be contained within the existing open space area. The impact 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?

Alternative A – Less than Significant Impact

The Sunset Parkway Site, Existing PS Site, and staging area on Sunset Parkway are located in developed areas within the WUI. There is potential for equipment used during project construction to create sparks which could pose an exacerbated fire risk. Construction activities would adhere to all applicable policies and regulations related to fire safety and stopping the spread of wildfire in case of ignition. This would reduce the risks associated with wildfires and the uncontrolled spread of wildfire during construction to a less than significant level. Project operation would not introduce a substantial new risk of wildfire or exacerbate the uncontrolled spready of wildfire. The new PS would be constructed within an already developed median within Sunset Parkway. The project would include some ornamental landscaping around the new PS which would be maintained in order to prevent the buildup of dry vegetation. Therefore, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from wildfire. The impact of the proposed project would be less than significant.

Alternative B – Less than Significant Impact

The Ignacio Boulevard Site, Existing PS Site, and staging area on Sunset Parkway are situated within the WUI. The Ignacio Boulevard Site and staging are located within a landscaped open space area near Arroyo San Jose Creek. There is potential for equipment used during project construction to create sparks which could pose an exacerbated fire risk. Construction activities would adhere to all applicable policies and regulations related to fire safety and stopping the spread of wildfire in case of ignition. This would reduce the risks associated with wildfires and the uncontrolled spread of wildfire during construction to a less than significant level. Project operation would not introduce a substantial new risk of wildfire or exacerbate the uncontrolled spready of wildfire. The project would include some ornamental landscaping around the new PS which would be maintained in order to prevent buildup of dry vegetation. Therefore, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from wildfire. The impact of the proposed project would be less than significant.

Alternative C – Less than Significant Impact

The Bolling Drive Site is not situated within the WUI or a High FHSZ (County of Marin 2023). The Ignacio Boulevard Site, Existing PS Site, and staging area on Sunset Parkway are situated within the WUI. The Ignacio Boulevard Site and staging are located within a landscaped open space area near Arroyo San Jose Creek. There is potential for equipment used during project construction to create sparks which could pose an exacerbated fire risk. Construction activities would adhere to all applicable policies and regulations related to fire safety and stopping the spread of wildfire in case of ignition. This would reduce the risks associated with wildfires and the uncontrolled spread of wildfire during construction to a less than significant level. Project operation would not introduce a substantial new risk of wildfire or exacerbate the uncontrolled spready of wildfire. The project would include some ornamental landscaping around the new PS which would be maintained in order to prevent buildup of dry vegetation. Therefore, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from wildfire. The impact of the proposed project would be less than significant.

Alternative D – Less than Significant Impact

The Main Gate Road Site is not situated within the WUI or a High FHSZ (County of Marin 2023). The Ignacio Boulevard Site, Existing PS Site, and staging area on Sunset Parkway are situated within the WUI. The Ignacio Boulevard Site and staging are located within a landscaped open space area near Arroyo San Jose Creek. There is potential for equipment used during project construction to create sparks which could pose an exacerbated fire risk. Construction activities would adhere to all applicable policies and regulations related to fire safety and stopping the spread of wildfire in case of ignition. This would reduce the risks associated with wildfires and the uncontrolled spread of wildfire during construction to a less than significant level. Project operation would not introduce a substantial new risk of wildfire or exacerbate the uncontrolled spready of wildfire. The project would include some ornamental landscaping around the new PS which would be maintained in order to prevent buildup of dry vegetation. Therefore, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from wildfire. The impact of the proposed project would be less than significant.

Alternative E – Less than Significant Impact

The C Street Site is not situated within the WUI or a High FHSZ (County of Marin 2023). The Ignacio Boulevard Site, Existing PS Site, and staging area on Sunset Parkway are situated within the WUI. The Ignacio Boulevard Site and staging are located within a landscaped open space

area near Arroyo San Jose Creek. There is potential for equipment used during project construction to create sparks which could pose an exacerbated fire risk. Construction activities would adhere to all applicable policies and regulations related to fire safety and stopping the spread of wildfire in case of ignition. This would reduce the risks associated with wildfires and the uncontrolled spread of wildfire during construction to a less than significant level. Project operation would not introduce a substantial new risk of wildfire or exacerbate the uncontrolled spready of wildfire. The project would include some ornamental landscaping around the new PS which would be maintained in order to prevent buildup of dry vegetation. Therefore, the project would not exacerbate wildfire risks or expose project occupants to pollutant concentrations from wildfire. The impact of the proposed project 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?*

Alternative A – No Impact

The project would not require the installation or maintenance of any associated infrastructure that may exacerbate fire risk or result in impacts to the environment. The proposed PS and piping at the Sunset Parkway Site would be accessed by existing roads and served by existing utilities. No other infrastructure, such as fuel breaks, would be required. No impact would occur.

Alternative B – No Impact

The project would not require the installation or maintenance of any associated infrastructure that may exacerbate fire risk or result in impacts to the environment. The proposed PS and piping at the Ignacio Boulevard Site would be accessed by existing roadways and served by existing utilities. No other infrastructure, such as fuel breaks, would be required. No impact would occur.

Alternative C – No Impact

The project would not require the installation or maintenance of any associated infrastructure that may exacerbate fire risk or result in impacts to the environment. The proposed PS and piping at the Ignacio Boulevard Site and Bolling Drive Site would be accessed by existing roadways and served by existing utilities. No other infrastructure, such as fuel breaks, would be required. No impact would occur.

Alternative D – No Impact

The project would not require the installation or maintenance of any associated infrastructure that may exacerbate fire risk or result in impacts to the environment. The proposed PS and piping at the Ignacio Boulevard Site and Main Gate Road Site would be accessed by existing roadways and served by existing utilities. No other infrastructure, such as fuel breaks, would be required. No impact would occur.

Alternative E – No Impact

The project would not require the installation or maintenance of any associated infrastructure that may exacerbate fire risk or result in impacts to the environment. The proposed PS and piping at the Ignacio Boulevard Site and C Street Site would be accessed by existing roadways and served by existing utilities. No other infrastructure, such as fuel breaks, would be required. No impact would occur.

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?*

Alternative A – Less than Significant Impact

As discussed in Section 4.2.7, Geology and Soils, the project would not significantly alter slope stability or drainage patterns. The Sunset Parkway Site, Existing PS Site, and staging area on Sunset Parkway are all within developed roadway medians and are situated on relatively flat land. The sites are not located near areas that are at risk of landslide. The construction of a new PS at the Sunset Parkway Site or demolition of the Lynwood PS would not expose people or structures to significant risks, including downslope flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

Alternative B – Less than Significant Impact

As discussed in Section 4.2.7, Geology and Soils, the project would not significantly alter slope stability or drainage patterns. The Existing PS Site and staging area on Sunset Parkway are within developed roadway medians and are situated on relatively flat land. The Ignacio Boulevard Site is located in a flat open space area developed with ornamental landscaping. The sites are not located near areas that are at risk of landslide. The construction of a new PS at the Ignacio Boulevard Site or demolition of the Lynwood PS would not expose people or structures to significant risks, including downslope flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

Alternative C – Less than Significant Impact

As discussed in Section 4.2.7, Geology and Soils, the project would not significantly alter slope stability or drainage patterns. The Existing PS Site and staging area on Sunset Parkway are within developed roadway medians and are situated on relatively flat land. The Ignacio Boulevard Site is located in a flat open space area developed with ornamental landscaping. The Bolling Drive Site is situated at the bottom of a slope and within an open space area. The construction of a new PS at the Ignacio Boulevard Site or Bolling Drive Site, or demolition of the Lynwood PS would not expose people or structures to significant risks, including downslope flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

Alternative D – Less than Significant Impact

As discussed in Section 4.2.7, Geology and Soils, the project would not significantly alter slope stability or drainage patterns. The Existing PS Site and staging area on Sunset Parkway are within developed roadway medians and are situated on relatively flat land. The Ignacio Boulevard Site is located in a flat open space area developed with ornamental landscaping. The Main Gate Road Site is also located in a flat open space area and is not near any residences or occupied uses. The sites are not located near areas that are at risk of landslide. The construction of a new PS at the Ignacio Boulevard Site or Main Gate Road Site, or demolition of the Lynwood PS would not expose people or structures to significant risks, including downslope flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

Alternative E – Less than Significant Impact

As discussed in Section 4.2.7, Geology and Soils, the project would not significantly alter slope

stability or drainage patterns. The Existing PS Site and staging area on Sunset Parkway are within developed roadway medians and are situated on relatively flat land. The Ignacio Boulevard Site is located in a flat open space area developed with ornamental landscaping. The C Street Site is located within a baseball field in a flat area. The sites are not located near areas that are at risk of landslide. The construction of a new PS at the Ignacio Boulevard Site or C Street Site, or demolition of the Lynwood PS would not expose people or structures to significant risks, including downslope flooding or landslides, as a result of runoff, post-fire instability, or drainage changes. The impact would be less than significant.

4.2.21 Mandatory Findings of Significance

		Potentially Significant Impact	*Less than Significant with Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
a)	Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c)	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

DISCUSSION OF IMPACTS

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

Alternative A through Alternative E – Less than Significant Impact with Mitigation Incorporated

Under Alternatives A through E, the proposed project would have the potential to impact non-special status nesting birds, which are protected under the MBTA. The project would implement Mitigation Measure BIO-1, which requires pre-construction nesting bird surveys, which would reduce this potential impact to a less than significant level. No other potentially significant impact to biological resources would occur under Alternatives A through E.

Although there are no known cultural, historical, or tribal cultural resources on any of the project sites or staging areas, ground-disturbing activities at the project sites could potentially uncover unknown archaeological resources, which is a potentially significant impact. Under Alternatives A through E, Mitigation Measure CUL-1 and CUL-3 would be implemented which describe proper protocols to be followed should any unknown archaeological resources be uncovered during project construction. In addition, Mitigation Measure CUL-2 would be implemented under

Alternatives D and E which would require archeological resources identification training for the project construction crew at the Main Gate Road Site and C Street Site, and that an archaeologist who meets the Secretary of the Interiors Standards for Archaeology monitor all excavation work on-site. With implementation of these measures, no potentially significant impacts would occur to cultural, historical, or tribal cultural resources. Therefore, 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, 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 impact under Alternatives A through E would be less than significant with mitigation incorporated.

b) *Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Alternative A through Alternative E – Less than Significant Impact with Mitigation Incorporated

Other projects within the proposed project area include but may not limited to:

- City of Novato Citywide Crosswalk Enhancements and Traffic Management Project
- City of Novato 2023 & 2024 Annual Pavement Rehabilitation Project

A portion of the Citywide Crosswalk Enhancements and Traffic Management Project would occur along Main Gate Road adjacent north of the Main Gate Road Site and just southwest of the C Street Site. Should Alternative D or E be implemented, the District would coordinate construction schedules with the City to ensure that the two projects are not ongoing at the same time to avoid cumulatively considerable impacts related to air quality and noise. In addition, the proposed project would implement air quality mitigation measures which would ensure air quality emissions would remain at a less-than-significant level. It is not likely that a minor circulation project, such as crosswalk or traffic infrastructure enhancements, or other projects in the vicinity would result in significant air quality impacts that would be cumulatively considerable when combined with the proposed project. Cumulatively considerable impacts would not result from the operation of both projects as the Citywide Crosswalk Enhancements and Traffic Management Project would not introduce a new source of emissions or cause other growth inducing impacts.

In addition, a portion of South Novato Boulevard that runs north to south and intersects Sunset Parkway near the Sunset Parkway Site and Existing PS Site is included in the City's Annual Pavement Rehabilitation Project. The District would coordinate construction schedules with the City to ensure that construction at the intersection of South Novato Boulevard and Sunset Parkway is not occurring at the same time as project activities at the Sunset Parkway Site or Existing PS Site. In addition, the proposed project would implement air quality mitigation measures which would reduce air quality emissions to a less-than-significant level. It is not likely that a minor circulation project, such as road paving, or other projects in the vicinity would result in significant air quality impacts that would be cumulatively considerable when combined with the proposed project. Cumulatively considerable impacts would not result from the operation of both projects as the Annual Pavement Rehabilitation Project would not introduce a new source of emissions or cause other growth inducing impacts.

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

Potential impacts to human beings have been addressed in this IS/MND, including impacts related to air quality, noise, and transportation. Project construction activities would cause potential temporary impacts to humans due to the generation of criteria air pollutants, which would be considered less than significant under CEQA with implementation of Mitigation Measure AQ-1. Mitigation Measure AQ-1 requires that the project implement BMPs as recommended by the BAAQMD 2022 CEQA Air Quality Guidelines. Project impacts related to noise and transportation were found to be less than significant. Therefore, the project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly.

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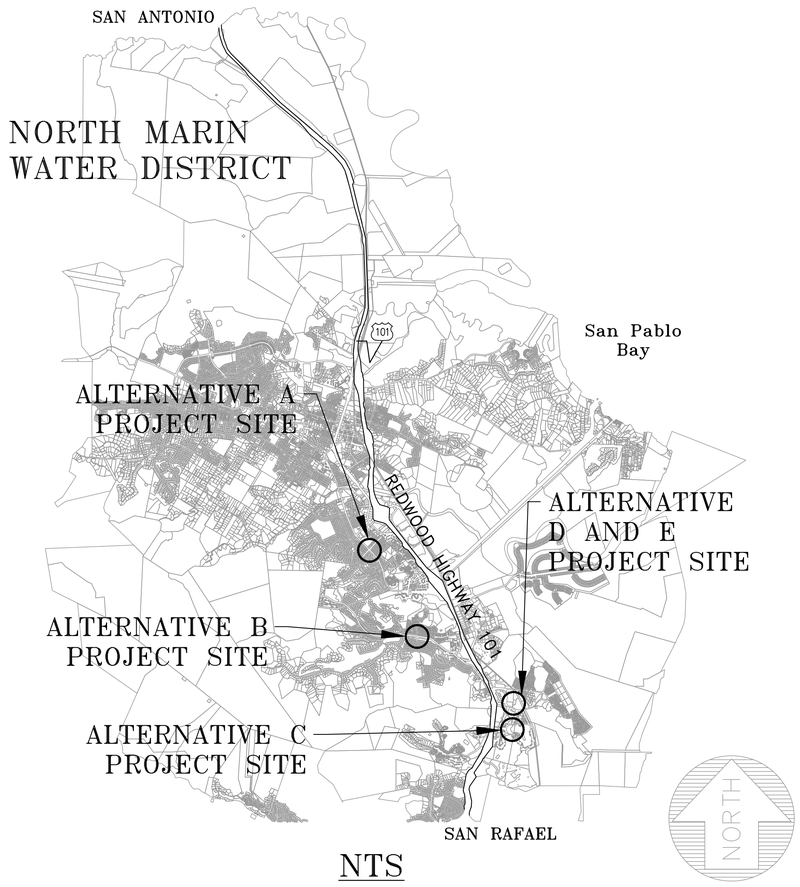
APPENDIX A. PROJECT CONCEPTUAL PLANS

NORTH MARIN WATER DISTRICT

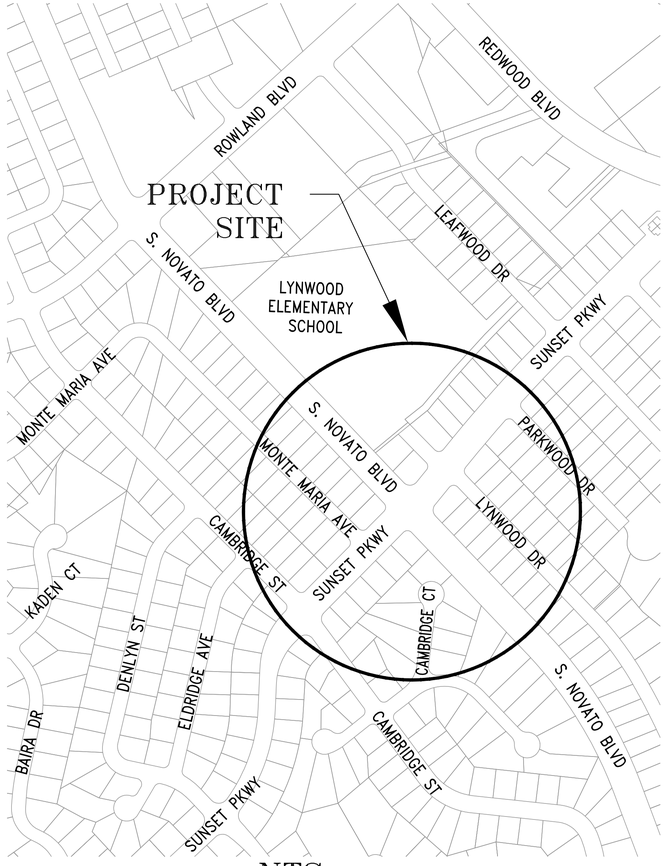
LYNWOOD PUMP STATION REPLACEMENT PROJECT

LOCATION MAP



NTS

EXISTING PUMP STATION SITE LOCATION



NTS

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NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

TITLE SHEET

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 1 OF 19 SHEETS	
R.E. C78430			SERVICE AREA	JOB.NO. NO. G1

SYMBOLS

EXISTING	PROPOSED	
		LIMIT OF WORK
		PROPERTY LINE
SS		SANITARY SEWER LINE
GAS		GAS LINE
W	W	WATER LINE
E	E	ELECTRICAL LINE
SD		STORM DRAIN
		CHAIN LINK FENCE
		EASEMENT
111		ADDRESS NUMBER
		WATER VALVE
157.7		SPOT ELEVATION
FH	FH	FIRE HYDRANT
		POST OR BOLLARD
		POT HOLE
		BUILDING
102		MAJOR CONTOUR AND ELEVATION
102		MINOR CONTOUR AND ELEVATION
	1 / C4.5	DETAIL & SHEET NOTATION
		BACKFLOW PREVENTOR
		FLEX-TEND FORCED BALANCED FLEXIBLE EXPANSION JOINTS
		MANHOLE
		ELECTRICAL POLE
SS		SANITARY SEWER MANHOLE

NOTES:

1. SYMBOLS ON THIS SHEET APPLY ONLY TO THE CIVIL DRAWINGS.
2. THIS IS A STANDARD SYMBOLS SHEET, THEREFORE, SOME SYMBOLS AND ABBREVIATIONS MAY APPEAR ON THIS SHEET AND MAY NOT BE UTILIZED ON THIS PROJECT.

ABBREVIATIONS

A	ASBESTOS CEMENT
ABND	ABANDON OR ABANDONED
@	AT
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
APPROX	APPROXIMATE
AP	ANGLE POINT
APVD	APPROVED
ARCH	ARCHITECTURAL
ARV	AIR RELEASE VALVE
AUTO.	AUTOMATIC
AUX	AUXILIARY
AWWA	AMERICAN WATER WORKS ASSOCIATION
B	"BITUMASTIC"-ASPHALTIC, COAL TAR, ETC. AWWA C203
BFV	BUTTERFLY VALVE
BV	BALL VALVE
BM	"B" WITH "M" OVER IT
C	CAST IRON
CARV	COMBINATION AIR RELEASE VALVE
CATV	CABLE TELEVISION
CB	CATCH BASIN
CI	CAST IRON
CIMJ	CAST IRON MECHANICAL JOINT
CIP	CAST IRON PIPE
CIRJ	CAST IRON RESTRAINED JOINT
CISP	CAST IRON SOIL PIPE
CL	CENTERLINE
CLDIP	CEMENT-LINED DUCTILE IRON PIPE
CLR	CLEAR, CLASS
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS, CONTINUATION
COORD	COORDINATE
COP.	COPPER
CPLG	COUPLING
CTE	CONNECT TO EXISTING
CV	CHECK VALVE
DI	DROP INLET
DIMJ	DUCTILE IRON MECHANICAL JOINT
DIP	DUCTILE IRON PIPE
DN	DOWN
DR	DRAIN
(E),EX,EXIST	EXISTING
E	EPOXY, LIQUID-AWWA C210 OR FUSION BONDED - AWWA C213
EP	EDGE OF PAVEMENT
EQPT	EQUIPMENT
EX	EXISTING
EXP	EXPOSED, EXPANSION
F	FUSED PVC
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FDA	FLOOR DRAIN W/INTEGRAL TRAP
FDN	FOUNDATION
FF	FINISH FLOOR
FG	FINISH GRADE
FH	FIRE HYDRANT
FIG.	FIGURE
FLG	FLANGE
FL	FLOW LINE
FNSH	FINISH
FO	FIBER OPTICS
FOC	FACE OF CONCRETE
FP	FINISH PAVEMENT
FT	FOOT OR FEET
FTG	FOOTING
FW	FIRE WATER
°F	DEGREE FAHRENHEIT
G	GAS
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GPM	GALLONS PER MINUTE
GR	GRATE, GROUND
GRTG	GRATING
GS	GALVANIZED STEEL
GV	GATE VALVE
H	HIGH DENSITY POLYETHYLENE
HGL	HYDRAULIC GRADE LINE
HORIZ	HORIZONTAL
HP	HIGH POINT, HINGE POINT
HPG	HIGH PRESSURE GAS
HPW	HIGH PRESSURE WATER
ID	INSIDE DIAMETER
IF.	INSIDE FACE
IN.	INCH
INV	INVERT
L, R, T OR P	RENFORCED CONCRETE
LF	LINEAR FEET
L.O.W.	LIMIT OF WORK
M	MORAR OR CEMENT AWWA C205
MB	"M" WITH "B" OVER IT
N	PLASTIC
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
(OH)	OVERHEAD
OC	ON CENTER
OD	OUTSIDE DIAMETER, OVERFLOW DRAIN
OG	ORIGINAL GROUND
PAE	PUBLIC ACCESS EASEMENT
P	PLASTIC TAPE WRAP, AWWA C214, OR EXTRUDED - AWWA C215 OR C216
PL	PROPERTY LINE
POC	POINT OF CONNECTION
PREFAB	PREFABRICATED
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSIG	POUNDS PER SQUARE INCH, GAUGE
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PSIG	POUNDS PER SQUARE INCH, GAUGE
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
PVT	PRIVATE
R, RAD	RADIUS
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RCW	RECLAIMED WATER
RD	ROAD, ROOF DRAIN
RDCR	REDUCER
REINF	REINFORCED, REINFORCING, REINFORCE
REQD	REQUIRED
RJ	RESTRAINED JOINT
RMV	REMOVE
ROW	RIGHT-OF-WAY
RST	REINFORCING STEEL
RWL	RECLAIMED WATER LINE
S	STEEL
SD	STORM DRAIN
SDI	STORM DRAIN INLET
SEC	SECTION
SPEC	SPECIFICATIONS
SQ	SQUARE
SQ FT	SQUARE FOOT
SQ IN	SQUARE INCH
SS	SANITARY SEWER
SSMH	SANITARY SEWER MANHOLE
SST	STAINLESS STEEL
ST	STREET
STA	STATION
STD	STANDARD
S/W, SW	SIDEWALK
U	UNLINED
UON	UNLESS OTHERWISE NOTED
VIF	VERIFY IN FIELD
W/	WITH
W	WATER, WEST
WM	WATER METER
WS	WATER SURFACE, WATER STOP
WSP	WELDED STEEL PIPE

GENERAL NOTES

GR GENERAL REQUIREMENTS

GR-1) AS USED IN THESE GENERAL NOTES:
"DRAWINGS" MEANS THE LATEST DRAWINGS, UON.
"SPECIFICATIONS" MEANS THE LATEST PROJECT SPECIFICATIONS, UON.
"CONTRACT DOCUMENTS" IS DEFINED AS THE ENGINEER OF RECORD FOR THE FINAL CONDITION.
"DESIGN PROFESSIONALS" IS DEFINED AS THE OWNER'S CIVIL ENGINEER AND SER.
"MEP" INCLUDES, BUT IS NOT LIMITED TO MECHNIAL, ELECTRICAL, PLUMBING.

"CONTRACTOR" IS DEFINED TO INCLUDE ANY OF THE FOLLOWING: GENERAL CONTRACTOR AND THEIR SUBCONTRACTORS, CONSTRUCTION MANAGER AND THEIR SUBCONTRACTORS.

GR-2) THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE PROJECT WORK WITH THE CIVIL, MEP CONTRACT DOCUMENTS, AS WELL AS ANY OTHER APPLICABLE TRADES.

GR-3) THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE UNTIL THE CONSTRUCTION OF THE STRUCTURE REACHES ITS FINAL CONDITION.

GR-4) THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE INSTALLATION, AND REMOVAL OF TEMPORARY BRACING AND OTHER REQUIRED CONSTRUCTION SUPPORTS, FOR NEW AND EXISTING STRUCTURES, AS NECESSARY TO COMPLETE THE PROJECT. NO PORTION OF THE PROJECT WHILE UNDER CONSTRUCTION IS INTENDED TO BE STABLE IN THE ABSENCE OF THE TEMPORARY SUPPORTS AND BRACES. CONTRACTOR SHALL RETAIN A STRUCTURAL ENGINEER LICENSED IN THE STATE IN WHICH THE PROJECT IS LOCATED TO ASSIST TEMPORARY BRACING INSTALLATION AND REMOVAL AND OTHER CONSTRUCTION SUPPORTS.

GR-5) THE SPECIFICATIONS ARE AN INTEGRAL PART OF THE CONTRACT DOCUMENTS AND SHALL BE USED IN CONJUNCTION WITH THE DRAWINGS.

GR-6) IN CASES OF CONFLICT BETWEEN DRAWINGS AND/OR SPECIFICATIONS AND OTHER DISCIPLINES OR EXISTING CONDITIONS, CONTRACTOR SHALL NOTIFY THE DESIGN PROFESSIONALS AND OBTAIN CLARIFICATION PRIOR TO BIDDING AND PROCEEDING WITH WORK.

GR-7) APPLY DETAILS, SECTIONS, AND NOTES ON THE DRAWINGS WHERE CONDITIONS ARE SIMILAR TO THOSE INDICATED BY DETAIL, DETAIL TITLE OR NOTE.

GR-8) ONLY USE DIMENSIONS INDICATED ON THE DRAWINGS. DO NOT SCALE DRAWINGS.

GR-9) ASSUME EQUAL SPACING BETWEEN ESTABLISHED DIMENSIONS, IF NOT INDICATED ON DRAWINGS.

GR-10) THE CONTRACTOR SHALL PROTECT EXISTING FACILITIES, STRUCTURES AND UTILITIES FROM DAMAGE, UON.

GR-11) THE CONTRACTOR SHALL VERIFY THAT CONSTRUCTION LOADS DO NOT EXCEED THE CAPACITY OF THE STRUCTURE AT THE TIME THE LOAD IS APPLIED.

GR-12) ELEVATIONS INDICATED ON DRAWINGS ARE BASED ON A PROJECT DATUM INDICATED ON THE CIVIL DRAWINGS.

CM CONCRETE MATERIALS

CM-1) CONCRETE STRENGTHS AND WEIGHT (SEE SPECIFICATION SECTION FOR ADDITIONAL CONCRETE PROPERTIES):

LOCATION	MIN COMPRESSIVE STRENGTH (PSI)	MAX WEIGHT (PCF)
ALL OTHER CONC NOT SPECIFICALLY SPECIFIED	4000 PSI @ 28 DAYS	145

CM-2) ALL CONCRETE SHALL BE THOROUGHLY CONSOLIDATED.

CM-3) THE USE OF CALCIUM CHLORIDE AND OTHER CHLORIDE CONTAINING AGENTS IS PROHIBITED. THE USE OF RECYCLED CONCRETE IS PROHIBITED. PLACEMENT WITHIN AND CONTACT BETWEEN ALUMINUM ITEMS, INCLUDING ALUMINUM CONDUIT, AND CONCRETE IS PROHIBITED.

RE CONCRETE REINFORCEMENT

RE-1) ALL CONCRETE SHALL INCLUDE REINFORCEMENT. IF REINFORCEMENT IS NOT SPECIFICALLY INDICATED ON THE DRAWINGS, VERIFY WITH THE ENGINEER BEFORE PROCEEDING WITH WORK.

RE-2) REINFORCEMENT SHALL CONFORM TO THE FOLLOWING STANDARDS AND MATERIAL PROPERTIES:

DEFORMED BARS:	ASTM A615, GRADE 60, UON
WELDABLE DEFORMED BARS:	ASTM A706, GRADE 60, UON
WELDED BAR ANCHORS:	NELSON D2L DEFORMED BAR ANCHORS (ICC-ES REPORT ER-5217)

RE CONCRETE REINFORCEMENT (CONT)

RE-3) DETAIL REINFORCEMENT BASED ON THE PROJECT REQUIREMENTS, ACI-318 AND ACI-315, UON.

RE-4) WHERE A 90-DEG, 135 -DEG OR 180-DEG HOOK IS GRAPHICALLY INDICATED, PROVIDE CORRESPONDING ACI STANDARD HOOKS, UON.

RE-5) DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCEMENT, UON.

RE-6) REINFORCEMENT SHALL HAVE CONCRETE PROTECTION (CLEAR COVER) PER ACI 318 UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

RE-7) LAP REINFORCEMENT AS SPECIFICALLY DETAILED ON THE DRAWINGS.

RE-8) UNLESS OTHERWISE NOTED ALL LAP SPLICES ARE TO BE CLASS "B" SPLICES.

RE-9) PROVIDE MECHANICAL SPLICES FOR BARS LARGER THAN #11 OR WHERE INDICATED. PROVIDE TENSILE, PRE-QUALIFIED, WELDED OR THREADED MECHANICAL SPLICES UON.

RE-10) TERMINATION OF REINFORCEMENT, UON:

A. TERMINATE ALL BARS IN LAPS, 90 DEGREE BENDS, OR WITH DOWELS INTO EXISTING CONCRETE.
B. BEND TOP MAT OR FOOTING BARS DOWN TO BOTTOM BARS AT ENDS.
C. BEND BOTTOM MAT OR FOOTING BARS UP WITH STANDARD 90 DEGREE BENDS.
D. PROVIDE DOWELS FROM FOOTINGS AND SLABS INTO WALLS AND COLUMNS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCEMENT.

SP STRUCTURAL PRECAST CONCRETE

SP-1) TYPICAL DETAILS INDICATE GENERAL CRITERIA FOR DESIGN AND DETAILING OF PRECAST CONCRETE. PROVIDE DESIGNS THAT MEET INDICATED CRITERIA BELOW AND LISTED CODES AND STANDARDS AND ICC-ES EVALUATION REPORT ESR-2660.

SP-2) PROVIDE CAMBER TO LIMIT DEFLECTION SUCH THAT NO POINT OF THE DEFLECTED STRUCTURE EXCEEDS" BELOW THE STATED ELEVATION. CAMBER DESIGN SHALL INCLUDE EFFECTS OF LONG-TERM DEFLECTION, SHRINKAGE, CREEP, AND MAXIMUM ALLOWABLE CONSTRUCTION TOLERANCES.

SP-3) DO NOT USE POWER-DRIVEN ANCHORS OR ANCHORS WHICH REQUIRE DRILLING AT PRESTRESSED UNITS. SUBMIT PROPOSED ANCHOR PROCEDURES FOR PRECAST UNITS TO THE DESIGN PROFESSIONALS AND PRECAST SUPPLIER FOR REVIEW.

PA POST-INSTALLED ANCHORS

PA-1) POST-INSTALLED ANCHORS INCLUDE EXPANSION ANCHORS, EPOXY ANCHORS/DOWELS, AND POWDER-ACTUATED FASTENERS.

PA-2) INSTALL POST-INSTALLED ANCHORS IN ACCORDANCE WITH THE APPLICABLE ICC-ES REPORT AND THE MANUFACTURER'S RECOMMENDATIONS.

PA-3) USE SCANNING EQUIPMENT OR OTHER MEANS TO LOCATE AND AVOID CUTTING OR DAMAGING REINFORCING BARS. EOR APPROVAL IS REQUIRED PRIOR TO CUTTING OR DAMAGING REINFORCING.

PA-4) SPECIAL INSPECTION IS REQUIRED FOR ALL POST-INSTALLED ANCHOR INSTALLATIONS, UON.

PA-5) FIELD TESTING OF POST-INSTALLED ANCHORS IS REQUIRED, UON. TEST INSTALLED ANCHORS IN ACCORDANCE WITH THE FOLLOWING:

A. TEST 100% OF ANCHORS AT ALL STRUCTURAL APPLICATIONS, UON.
B. TEST 50% OF ANCHORS AT ALL NON-STRUCTURAL APPLICATIONS (SUCH AS EQUIPMENT ANCHORAGE), UON.
C. TEST 10% OF ANCHORS AT SILL PLATE BOLTING APPLICATIONS, UON.
D. IF ANY ANCHOR FAILS TESTING, TEST ALL ANCHORS OF THE SAME TYPE NOT PREVIOUSLY TESTED UNTIL 20 CONSECUTIVE ANCHORS PASS.
E. FIELD TESTS SHALL BE EITHER TENSION TESTS OR TORQUE TESTS, AS REQUIRED FOR THE SPECIFIC ANCHOR TYPE.

NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

SYMBOLS, ABBREVIATIONS, AND GENERAL NOTES

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 2 OF 19 SHEETS	
R.E. C78430			SERVICE AREA	JOB.NO. NO. G2

GENERAL NOTES (CONT.)

PA POST-INSTALLED ANCHORS (CONT)

F. TENSION TESTS: APPLY TEST LOADS TO ANCHORS WITHOUT REMOVING THE NUT IF POSSIBLE. IF NOT, REMOVE NUT AND INSTALL A THREADED COUPLER TO THE SAME TIGHTNESS AS THE ORIGINAL NUT USING A TORQUE WRENCH. REACTION LOADS FROM TEST FIXTURES MAY BE APPLIED CLOSE TO THE ANCHOR BEING TESTED, PROVIDED THE ANCHOR IS NOT RESTRAINED FROM WITHDRAWING BY THE FIXTURES. TO BE ACCEPTABLE, ANCHORS SHALL HAVE NO OBSERVABLE MOVEMENT AT THE APPLICABLE TEST LOAD (OBSERVABLE MOVEMENT IS DEFINED AS THE WASHER UNDER THE NUT BECOMING LOOSE).

G. TORQUE TESTS: TO BE ACCEPTABLE, THE APPLICABLE TEST TORQUE MUST BE REACHED WITHIN ONE-HALF TURN OF THE NUT.

H. TEST EQUIPMENT IS TO BE CALIBRATED BY AN APPROVED TESTING LABORATORY IN ACCORDANCE WITH STANDARD RECOGNIZED PROCEDURES.

I. FIELD TESTING SHALL BE DONE IN THE PRESENCE OF THE PROJECT INSPECTOR.

J. TESTING SHOULD OCCUR A MINIMUM OF 24 HOURS AFTER INSTALLATION OF THE SUBJECT ANCHOR.

PA-6) EXPANSION ANCHORS

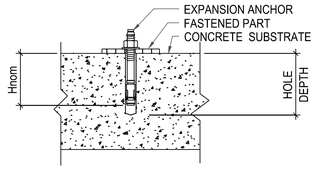
A. EXPANSION ANCHORS SHALL BE EITHER ONE OF THE FOLLOWING, UON:

HILTI KWIK BOLT TZ
(ICC-ES REPORT ESR-1917)

SIMPSON STRONG-BOLT 2
(ICC-ES REPORT ESR-3037)

USE OF CARBON STEEL EXPANSION ANCHORS IS LIMITED TO DRY, INTERIOR LOCATIONS. USE STAINLESS STEEL EXPANSION ANCHORS AT EXTERIOR, WEATHER-EXPOSED, OR DAMP LOCATIONS. USE OF EXPANSION ANCHOR INSIDE OF THE BASIN IS NOT ALLOWED.

B. ANCHOR EMBEDMENTS BELOW ARE TO BE USED WHEN EXPLICITLY SPECIFIED IN THE STRUCTURAL DRAWINGS. FOR LOCATIONS WHERE TENSION TEST VALUES ARE NOT SPECIFIED IN THE DRAWINGS, CONSULT WITH THE EOR.



CONCRETE SLAB

HILTI KWIK BOLT TZ IN NORMAL-WEIGHT CONCRETE			
ANCHOR DIAMETER	Hnom	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT-LBS)
3/8"	2 5/16"	2 5/8"	25
1/2"	2 3/8"	2 5/8"	40
5/8"	4 7/16"	4 3/4"	60
3/4"	5 9/16"	5 3/4"	110

SIMPSON STRONG-BOLT 2 IN NORMAL-WEIGHT CONCRETE			
ANCHOR DIAMETER	Hnom	MINIMUM HOLE DEPTH	TORQUE TEST VALUE (FT-LBS)
3/8"	1 7/8"	2"	30
1/2"	2 3/4"	3"	60
5/8"	5 1/8"	6"	90
3/4"	5 3/4"	5 3/8"	150

C. Hnom IS MEASURED FROM FACE OF CONCRETE SUBSTRATE TO THE END OF THE BOLT.

D. CONTRACTOR SHALL PROVIDE ANCHORS WITH SUFFICIENT TOTAL LENGTH FOR THE SPECIFIED EMBEDMENT LENGTH, THICKNESS OF FASTENED PART, WASHER AND NUT.

PA-7) EPOXY ANCHORS AND DOWELS

A. EPOXY SHALL BE EITHER ONE OF THE FOLLOWING, UON:

HILTI HIT-HY 200 (ICC-ES REPORT ESR-3187)

HILTI HIT-RE 500-SD (ICC-ES REPORT ESR-2322)

SIMPSON SET-XP (ICC-ES REPORT ESR-2508)

PA POST-INSTALLED ANCHORS (CONT.)

B. RODS EMBEDDED IN EPOXY SHALL BE STAINLESS (ASTM 593,A316) STEEL THREADED RODS PER MANUFACTURER'S ICC-ES REPORT.

C. REINFORCING STEEL BARS EMBEDDED IN EPOXY SHALL BE ASTM A615, GRADE 60, UON.

D. ANCHOR EMBEDMENT AND TENSION TEST VALUES BELOW ARE TO BE USED WHEN EXPLICITLY SPECIFIED IN THE DRAWINGS. FOR LOCATIONS WHERE TENSION TEST VALUES ARE NOT SPECIFIED IN THE DRAWINGS, CONSULT WITH THE SER.

EPOXY ANCHORS IN NORMAL-WEIGHT CONCRETE (3000 PSI MIN)				
REBAR SIZE	EMBEDMENT (IN)	TENSION TEST VALUE (LBS)		
		HILTI HIT-HY 200	HILTI HIT-RE 500-SD	SIMPSON SET-XP
#3	3	2900	940	1040
#4	4	5180	1670	3740
#5	5	8130	2600	5260
#6	6	11120	3750	6740
#7	7	12260	4320	8020
* LISTED EPOXY ADHESIVE MAY NOT BE USED WITH NOTED REBAR SIZES				

EPOXY ANCHORS IN NORMAL-WEIGHT CONCRETE (3000 PSI MIN)				
THREADED ROD DIAMETER (IN)	EMBEDMENT (IN)	TENSION TEST VALUE (LBS)		
		HILTI HIT-HY 200	HILTI HIT-RE 500-SD	SIMPSON SET-XP
3/8	3	2500	1230	1700
1/2	4	4480	2110	2600
5/8	5	7030	3170	3450
3/4	6	10180	4450	4440
7/8	7	11710	4720	5540

E. TESTING OF EPOXY DOWELS AT JOINTS BETWEEN NEW AND EXISTING SLABS-ON-GRADE IS NOT REQUIRED.

F. TESTING SHALL OCCUR AFTER EPOXY HAS CURED, AS PER MANUFACTURER'S RECOMMENDATIONS.

G. OVERHEAD AND/OR CONSTANT TENSION EPOXY ANCHOR INSTALLATIONS NOT SHOWN ON THE DRAWINGS SHALL NOT BE PERMITTED UNLESS EACH CONDITION IS REVIEWED AND APPROVED IN WRITTING BY SER.

H. EPOXY ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT TIME OF ANCHOR INSTALLATION.

I. INSTALLATION AND INSPECTION OF EPOXY ANCHORS SHALL COMPLY WITH ACI 318-11 APPENDIX D SECTIONS D.9.2.2 AND D.9.2.4.

J. FOR USES OF EPOXY DOWELS NOT EXPLICITLY SPECIFIED IN THE STRUCTURAL DRAWINGS, CONTACT THE SER.

SU SUBMITTALS

SU-1) THE CONTRACTOR IS TO REVIEW EACH SUBMITTAL PRIOR TO FORWARDING TO CIVIL ENGINEER. THE CONTRACTOR IS TO STAMP EACH SUBMITTAL VERIFYING THAT THE FOLLOWING IS ADDRESSED:

1. THE SHOP DRAWING IS REQUESTED.
2. THE SHOP DRAWING IS BASED ON THE LATEST DESIGN.
3. THE CIVIL ENGINEER'S COMMENTS FROM ANY PREVIOUS SUBMITTALS ARE ADDRESSED.
4. THE WORK IS COORDINATED AMONG ALL CONSTRUCTION TRADES.
5. REVISIONS FROM PREVIOUS SUBMITTALS ARE CLEARLY MARKED BY CIRCLING OR CLOUDS.
6. SUBMITTAL IS COMPLETE.
7. SUBMITTAL DOES NOT INCLUDE SUBSTITUTION REQUEST
8. SUBMITTAL SHALL INCLUDE A STAMP INDICATING PROJECT NAME AND LOCATION, SUBMITTAL NUMBER, SPECIFICATION SECTION NUMBER.

THE CIVIL ENGINEER SHALL RETURN, WITHOUT COMMENT, SUBMITTALS WHICH THE CONTRACTOR HAS NOT STAMPED OR WHICH DO NOT MEET THE ABOVE REQUIREMENTS. THE CIVIL ENGINEER'S REVIEW OF SUBMITTALS SHALL BE FOR GENERAL CONFORMANCE WITH THE DESIGN INTENT. NO WORK SHALL BE STARTED WITHOUT SUCH REVIEW.

SU-2) FOR COMPONENTS THAT REQUIRE ENGINEERING BY THE CONTRACTOR, PROVIDE A NOTE ON EACH SHOP DRAWING, WRITTEN AND SIGNED BY THE SUPPLIER' S ENGINEER, INDICATING THAT THE SHOP DRAWING IS IN CONFORMANCE WITH THE CALCULATIONS OF THE CONTRACTOR'S ENGINEER.

SU-3) THE FOLLOWING ITEMS REQUIRE SUBMITTALS FOR REVIEW AS OUTLINED IN THE SPECIFICATIONS:

S = SHOP DRAWINGS AND/OR PRODUCT DATA REQUIRED

CALC = SUPPORTING CALCULATIONS REQUIRED, SIGNED AND SEALED BY A LICENSED [PROFESSIONAL] ENGINEER IN THE STATE IN WHICH THE PROJECT IS LOCATED.

THE ITEMS IN THIS SECTION REQUIRE SHOP DRAWINGS, SUBMITTED FOR REVIEW OF INTERACTION WITH THE BASE BUILDING STRUCTURE.

SU SUBMITTAL (CONT.)

SU-4) DEFERRED SUBMITTALS SHALL FIRST BE SUBMITTED TO THE PROJECT CIVIL ENGINEER AND/OR THE ENGINEER OF RECORD FOR REVIEW AND COORDINATION. FOLLOWING THE COMPLETION OF THE CIVIL ENGINEER OR ENGINEER'S REVIEW, A SUBMITTAL TO THE PLAN CHECK AUTHORITY SHALL BE MADE FOR REVIEW AND APPROVAL. THIS SUBMITTAL SHALL BE PROCESSED IN ACCORDANCE WITH CBC APPENDIX CHAPTER 1, SECTION 106.3.4.2. FOR A LIST OF DEFERRED ITEMS, SEE CIVIL ENGINEER DRAWINGS.

PI PERFORMANCE ITEMS

PI-1) THE CONTRACTOR SHALL EMPLOY OR RETAIN A LICENSED STRUCTURAL ENGINEER IN THE STATE IN WHICH THIS PROJECT IS LOCATED TO DESIGN AND DETAIL PERFORMANCE ITEMS AS PART OF THE BASE BUILDING STRUCTURE INDICATED IN THE CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO:

1. TO BE DETERMINED IN DETAIL DESIGN PHASE.

SI SPECIAL INSPECTIONS AND STRUCTURAL TESTING

S1-1) SPECIAL INSPECTIONS SHALL BE PERFORMED BY A SPECIAL INSPECTOR PER CBC SECTIONS 1704 AND 1705. THE SPECIAL INSPECTOR SHALL BE EMPLOYED BY THE OWNER AND NOT BY THE CONTRACTOR OR ANY OTHER PERSON RESPONSIBLE FOR THE THE CONTRACTOR SHALL COMPLETE AND SUBMIT THE CITY OF PACIFICA'S SPECIAL INSPECTION AND TESTING AGREEMENT WORK. FORM. THE FORM MUST BE SUBMITTED PRIOR TO PERMIT ISSUANCE. ENSURE THAT ALL REQUIRED SIGNATURES ARE PROVIDED AND THE AREA OF SPECIAL INSPECTION IS CLEARLY INDICATED ON THE FORM AND ON THE COVDER SHEET OF THE PLANS.

S1-2) THE SPECIAL INSPECTOR SHALL BE A QUALIFIED (LICENSED) PERSON WHO SHALL PROVIDE WRITTEN DOCUMENTATION TO THE BUILDING OFFICIAL DEMONSTRATING HIS OR HER COMPETENCE AND RELEVANT TRAINING OR EXPERIENCE TO THE SATISFACTION OF THE BUILDING OFFICIAL. EXPERIENCE SHALL BE FOR SPECIAL INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

SI-3) THE CONTRACTOR SHALL SUBMIT A WRITTEN STATEMENT OF RESPONSIBILITY PER CBC SECTION 1704.4 TO THE BUILDING OFFICIAL AND THE OWNER PRIOR TO THE COMMENCEMENT OF WORK WHEN RESPONSIBLE FOR THE CONSTRUCTION OF A MAIN WIND FORCE OR SEISMIC FORCE RESISTING SYSTEM. THE STATEMENT OF RESPONSIBILITY SHALL CONTAIN ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED IN THE STATEMENT OF SPECIAL INSPECTION.

SI-4) THE FOLLOWING WORK REQUIRES STRUCTURAL TESTS. FOR SPECIFIC REQUIREMENTS OF STRUCTURAL TESTS, SEE THE SPECIFICATIONS AND GENERAL NOTES.

1. CONCRETE REINFORCEMENT
2. CAST-IN-PLACE CONCRETE
3. POST-INSTALLED ANCHORS
4. GROUTED DOWELS
5. WELDING: STRUCTURAL STEEL AND REINFORCING STEEL

SI-5) THE FOLLOWING ITEMS SHALL RECEIVE SPECIAL INSPECTION BY A CERTIFIED SPECIAL INSPECTOR IN ACCORDANCE WITH CBC 1704 AND 1705:

1. TBD

SPECIAL INSPECTIONS LIST
(TO BE DETERMINED IN DETAIL DESIGN PHASE)

		VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD

NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

GENERAL NOTES (CONT.)

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 3 OF 19	SHEETS
R.E. C78430			SERVICE AREA	JOB.NO. NO. G3

1. ALL EXISTING UTILITIES ARE NOTED ONLY AS APPROXIMATE. POTHOLING IS REQUIRED TO VERIFY LOCATION OF ALL EXISTING UTILITIES. NOT ALL EXISTING UTILITIES ARE NOTED. IT IS RESPONSIBILITY OF THE CONTRACTOR TO VERIFY.
2. THE EXACT POINT OF CONNECTION IS NOTED ONLY AS APPROXIMATE.
3. EXISTING UTILITY INFORMATION SHOWN WHERE CONFLICTS OCCUR. ALL OTHER EXISTING UTILITIES OMITTED FOR CLARITY.

LYNWOOD ELEMENTARY SCHOOL

S. NOVATO BLVD

SUNSET PKWY

PARKWOOD DR

LEAFWOOD HEIGHTS

LYNWOOD DR

MONTE MARIA AVE

S. NOVATO BLVD

EXISTING LYNWOOD PUMP STATION

NEW 16" ZONE 2

EX 12" ZONE 2

EX 6" ZONE 1

EX 12" ZONE 1

EX 24" ZONE 2

EX 16" ZONE 2

EX 8" ZONE 1

SD 36"

SD 24"

SD 18"

SD 15"

SD 27"

2X SD 48"

2X SD 36"

1 2 4

NORTH

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

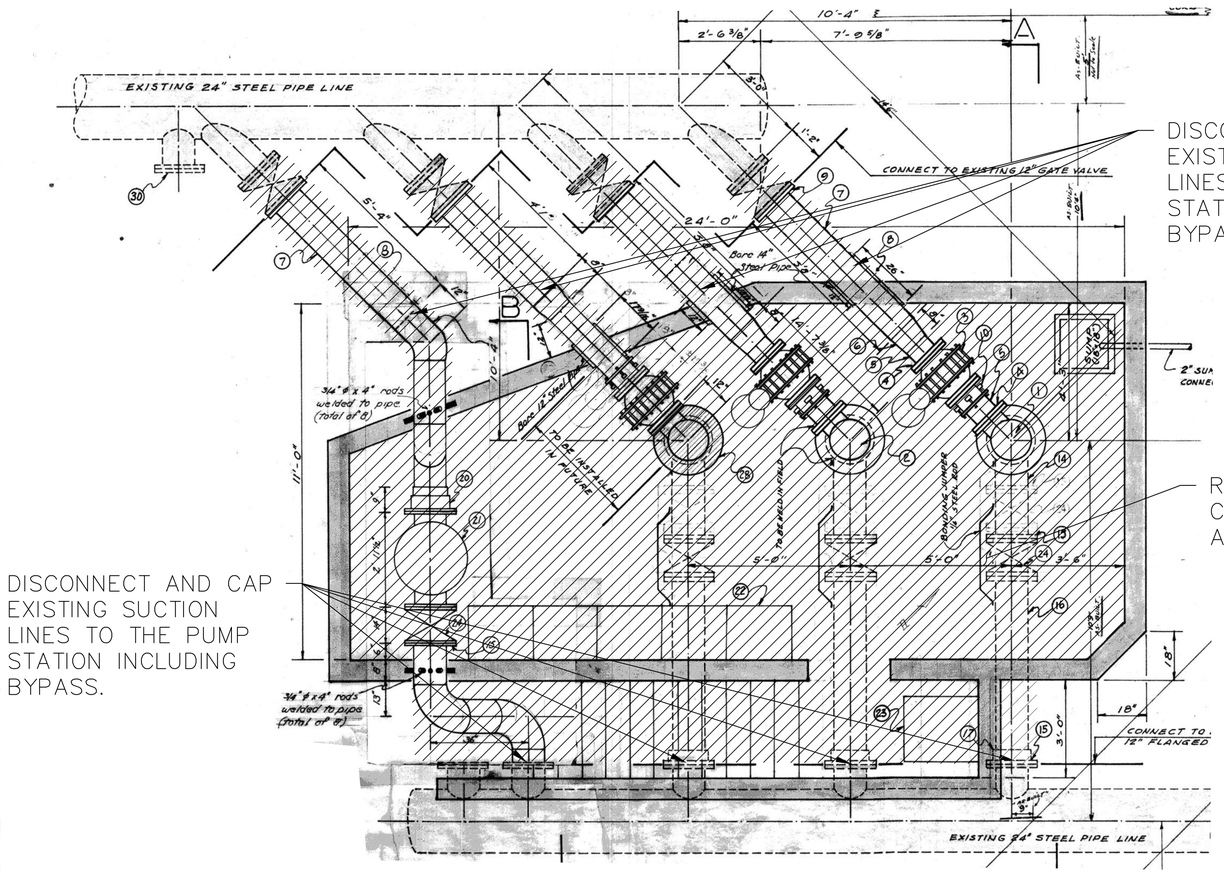
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

EXISTING CONDITIONS

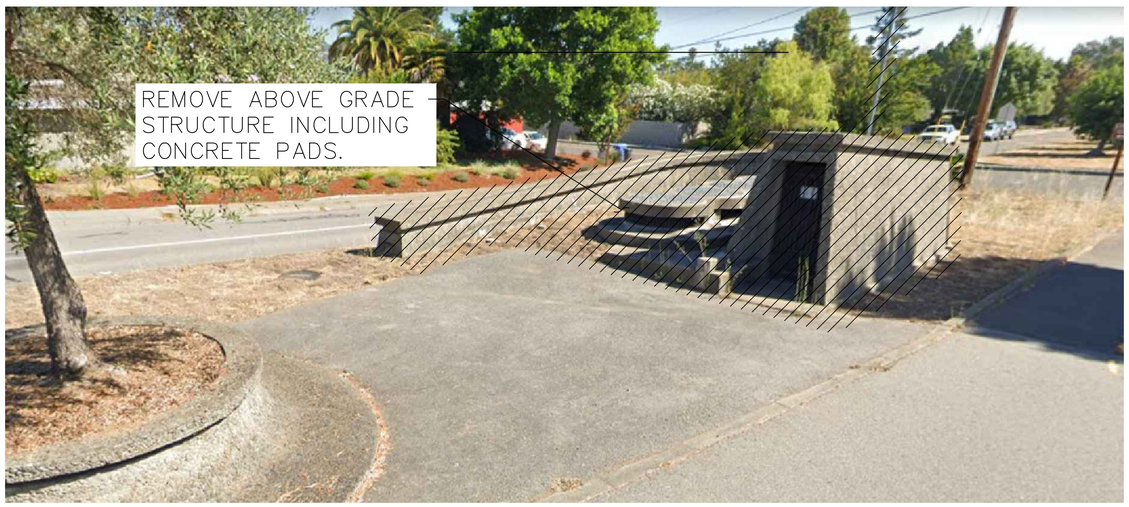
DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 4 OF 19	SHEETS
R.E. C78430			SERVICE AREA	JOB.NO. NO. C1

1 – EXISTING LYNWOOD PUMP STATION EXTERNAL BUILDING
SCALE : NO SCALE



3 – EXISTING LYNWOOD PUMP STATION PLAN VIEW
SCALE : NO SCALE

2 – EXISTING LYNWOOD PUMP STATION EXTERNAL POWER
SCALE : NO SCALE



4 – EXISTING LYNWOOD PUMP STATION LOCATION
SCALE : NO SCALE

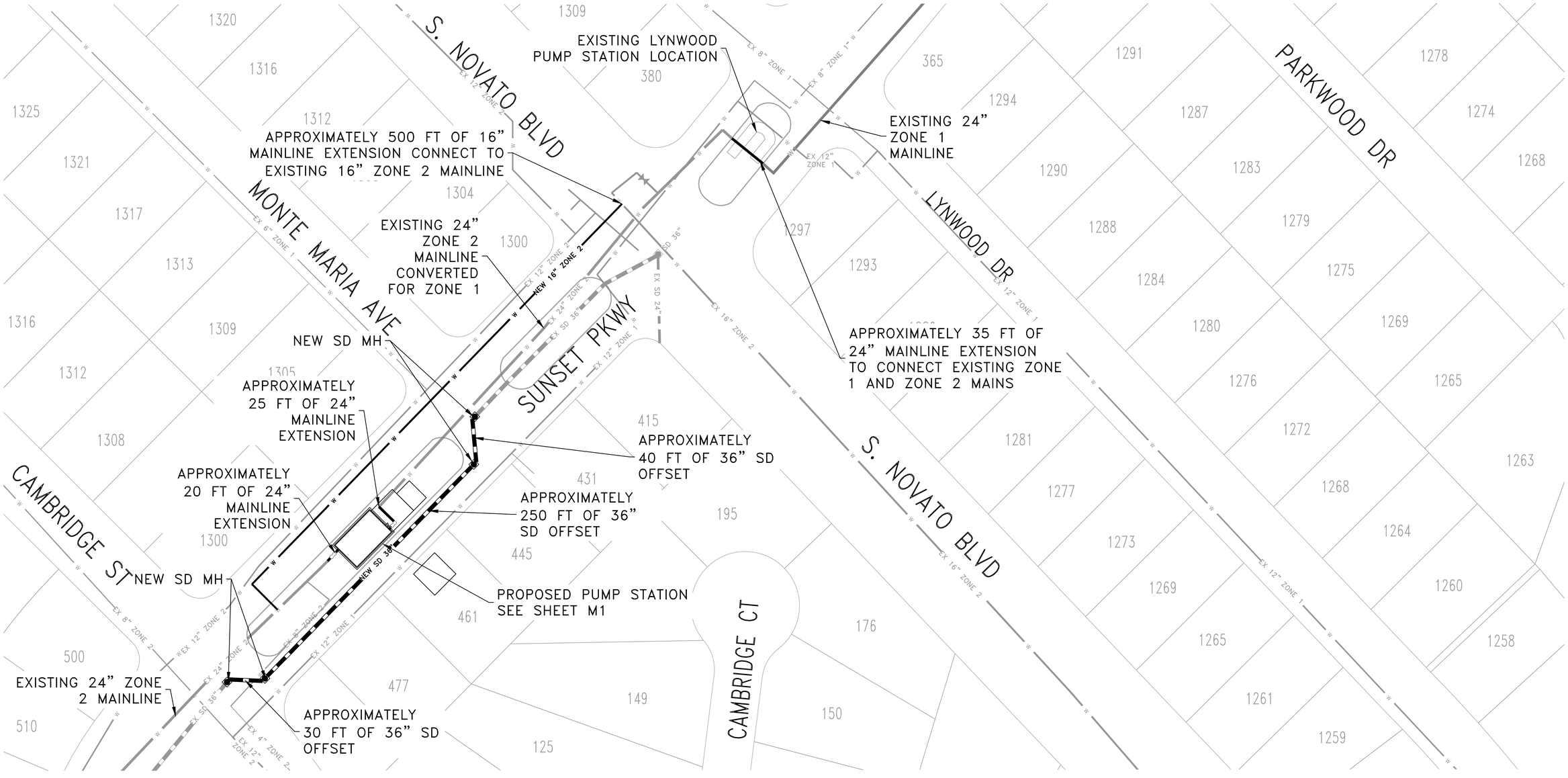
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

DEMOLITION PLAN

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 5 OF 19 SHEETS	
R.E. C78430			SERVICE AREA	JOB.NO. NO. C2



NOTES:

1. ALL EXISTING UTILITIES ARE NOTED ONLY AS APPROXIMATE. POTHOLING IS REQUIRED TO VERIFY LOCATION OF ALL EXISTING UTILITIES. NOT ALL EXISTING UTILITIES ARE NOTED. IT IS RESPONSIBILITY OF THE CONTRACTOR TO VERIFY.
2. THE EXACT POINT OF CONNECTION IS NOTED ONLY AS APPROXIMATE.
3. EXISTING UTILITY INFORMATION SHOWN WHERE CONFLICTS OCCUR. ALL OTHER EXISTING UTILITIES OMITTED FOR CLARITY.
4. THIS SITE PLAN DEPICTS THE PUMP STATION SITE PLAN FOR ALTERNATIVE 1

NORTH

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

SITE 1
ALTERNATIVE A

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 6 OF 19 SHEETS	
R.E. C78430			SERVICE AREA	JOB.NO. NO. C3

NOTES:

1. *ALL EXISTING UTILITIES ARE NOTED ONLY AS APPROXIMATE. POTHOLING IS REQUIRED TO VERIFY LOCATION OF ALL EXISTING UTILITIES. NOT ALL EXISTING UTILITIES ARE NOTED. IT IS RESPONSIBILITY OF THE CONTRACTOR TO VERIFY.*
2. *THE EXACT POINT OF CONNECTION IS NOTED ONLY AS APPROXIMATE.*
3. *EXISTING UTILITY INFORMATION SHOWN WHERE CONFLICTS OCCUR. ALL OTHER EXISTING UTILITIES OMITTED FOR CLARITY.*
4. *THIS SITE PLAN DEPICTS THE PUMP STATION SITE PLAN FOR ALTERNATIVE 2, AND ONE PUMP STATION SITE FOR ALTERNATIVES 3, 4, AND 5.*

NORTH

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)

1 inch = 40 ft.

NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

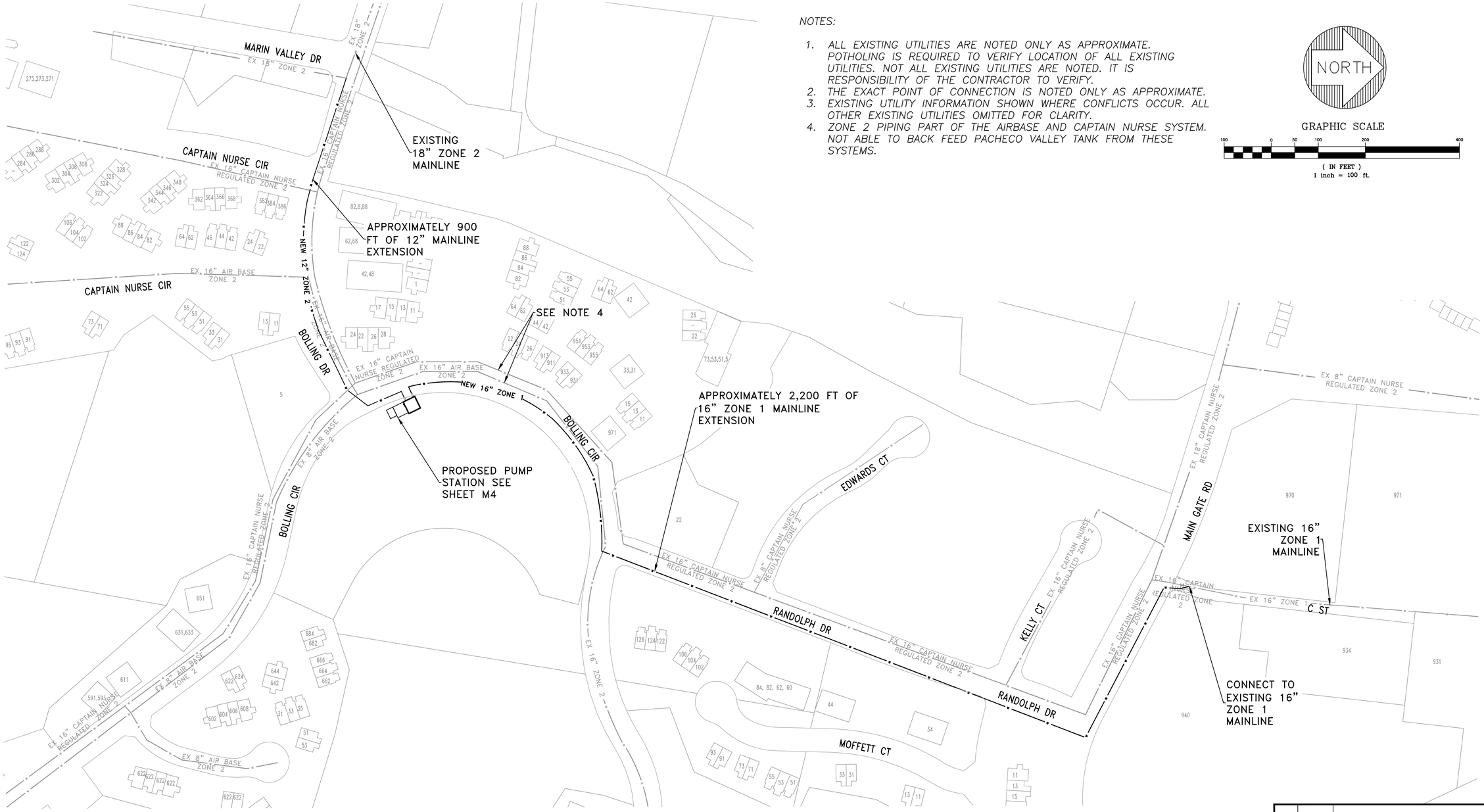
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

SITE 2

ALTERNATIVE B, C, D, AND E

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 7 OF 19 SHEETS	
R.E. C78430			SERVICE AREA	JOB.NO. NO. C4



NOTES:

1. *ALL EXISTING UTILITIES ARE NOTED ONLY AS APPROXIMATE. POTHOLING IS REQUIRED TO VERIFY LOCATION OF ALL EXISTING UTILITIES. NOT ALL EXISTING UTILITIES ARE NOTED. IT IS RESPONSIBILITY OF THE CONTRACTOR TO VERIFY.*
2. *THE EXACT POINT OF CONNECTION IS NOTED ONLY AS APPROXIMATE.*
3. *EXISTING UTILITY INFORMATION SHOWN WHERE CONFLICTS OCCUR. ALL OTHER EXISTING UTILITIES OMITTED FOR CLARITY.*
4. *ZONE 2 PIPING PART OF THE AIRBASE AND CAPTAIN NURSE SYSTEM. NOT ABLE TO BACK FEED PACHECO VALLEY TANK FROM THESE SYSTEMS.*

NORTH

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

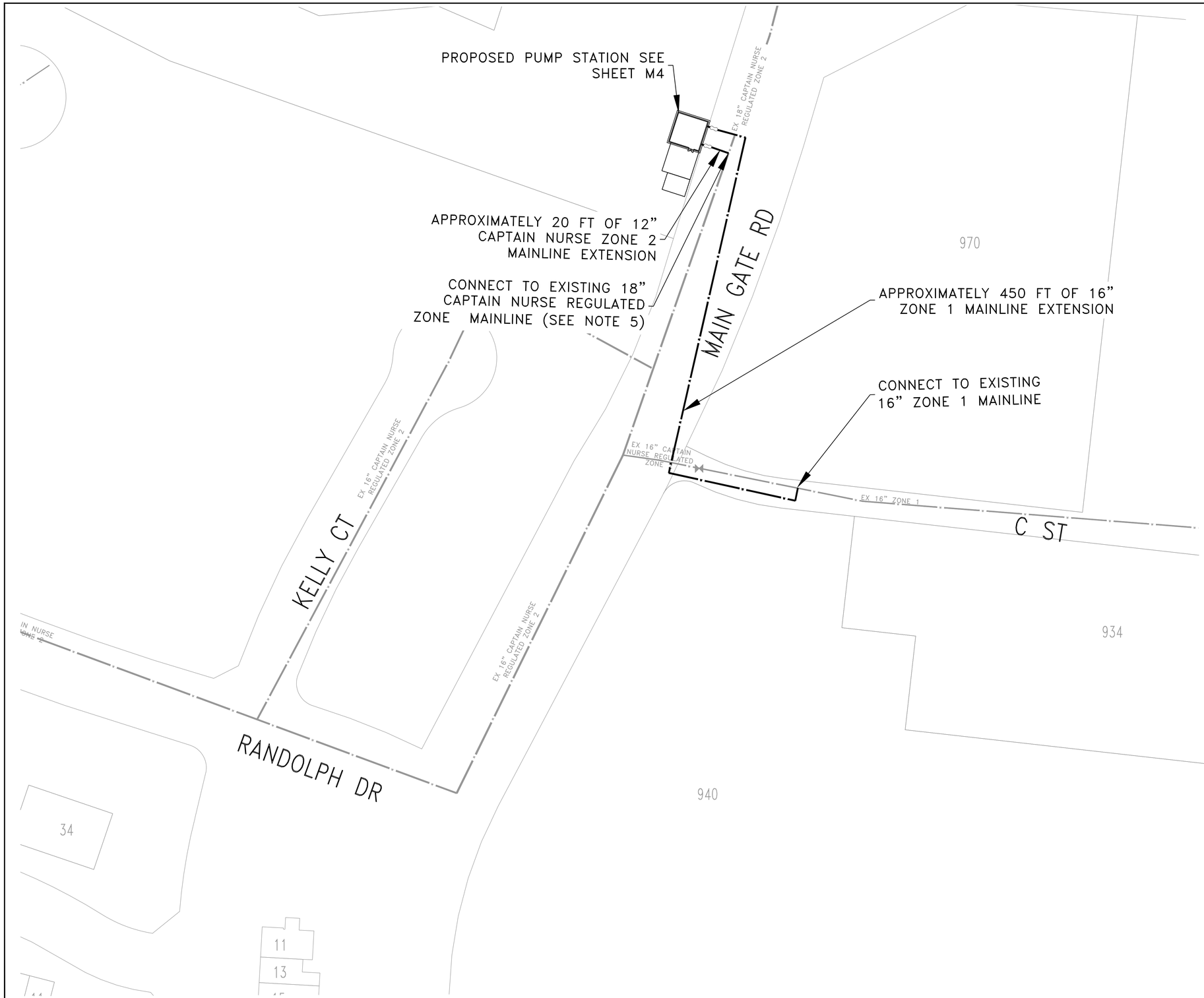
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

SITE 3
ALTERNATIVE C

DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 8 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. C5



NORTH

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOTES:

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3. *EXISTING UTILITY INFORMATION SHOWN WHERE CONFLICTS OCCUR. ALL OTHER EXISTING UTILITIES OMITTED FOR CLARITY.*
4. *THE AIRBASE AND CAPTAIN NURSE ZONE 2 SYSTEMS ARE NOT ABLE TO BACK FEED THROUGH AIR BASE TANK TO PACHECO VALLEY TANK. PROPOSED PIPE MODIFICATIONS ISOLATE AN EXISTING CAPTIAN NURSE REGULATED ZONE 2 PIPING AND CONVERTS IT TO PRIMARY ZONE 2 TO FILL PACHECO VALLEY TANK.*
5. *THIS SITE LOCATION REQUIRES THE INSTALLATION OF PRESSURE REDUCING VALVES ALONG THE CAPTAIN NURSE REGULATED ZONE 2 ALONG MAIN GATE AND NAVE DRIVE. PLEASE SEE TABLE BELOW.*

PRESSURE REDUCING VALVES		
NUMBER	*APPROXIMATE LOCATION*	*PRESSURE ZONE*
1	*ON MARTIN DR. NORTH OF MARTIN DR. AND MAIN GATE RD. INTERSECTION BEFORE LIVINGSTON CT.*	*CAPTAIN NURSE REGULATED ZONE 2*
2	*ON MAIN GATE RD. WEST OF MARTIN DR. AND MAIN GATE RD. INTERSECTION BEFORE NAVE DR.*	*CAPTAIN NURSE REGULATED ZONE 2*
3	*ON MAIN GATE RD. WEST OF MARTIN DR. AND MAIN GATE RD. INTERSECTION BEFORE NAVE DR.*	*CAPTAIN NURSE REGULATED ZONE 2*
4	*AT THE PARKING LOT OF 5530 NAVE DR. NOVATO, CA, 94949*	*CAPTAIN NURSE REGULATED ZONE 2*
5	*AT THE BASKET BALL BLACKTOP OF HAMILTON MEADOW PARK ELEMENTARY NORTHWEST OF TINKER WAY.*	*CAPTAIN NURSE REGULATED ZONE 2*
6	*PAVED ROADWAY BETWEEN 5420 NAVE DR. AND 5520 NAVE DR. NOVATO, CA, 94949*	*CAPTAIN NURSE REGULATED ZONE 2*
7	*AT THE INTERSECTION OF BOLLING DR. AND NAVE DR.*	*CAPTAIN NURSE REGULATED ZONE 2*

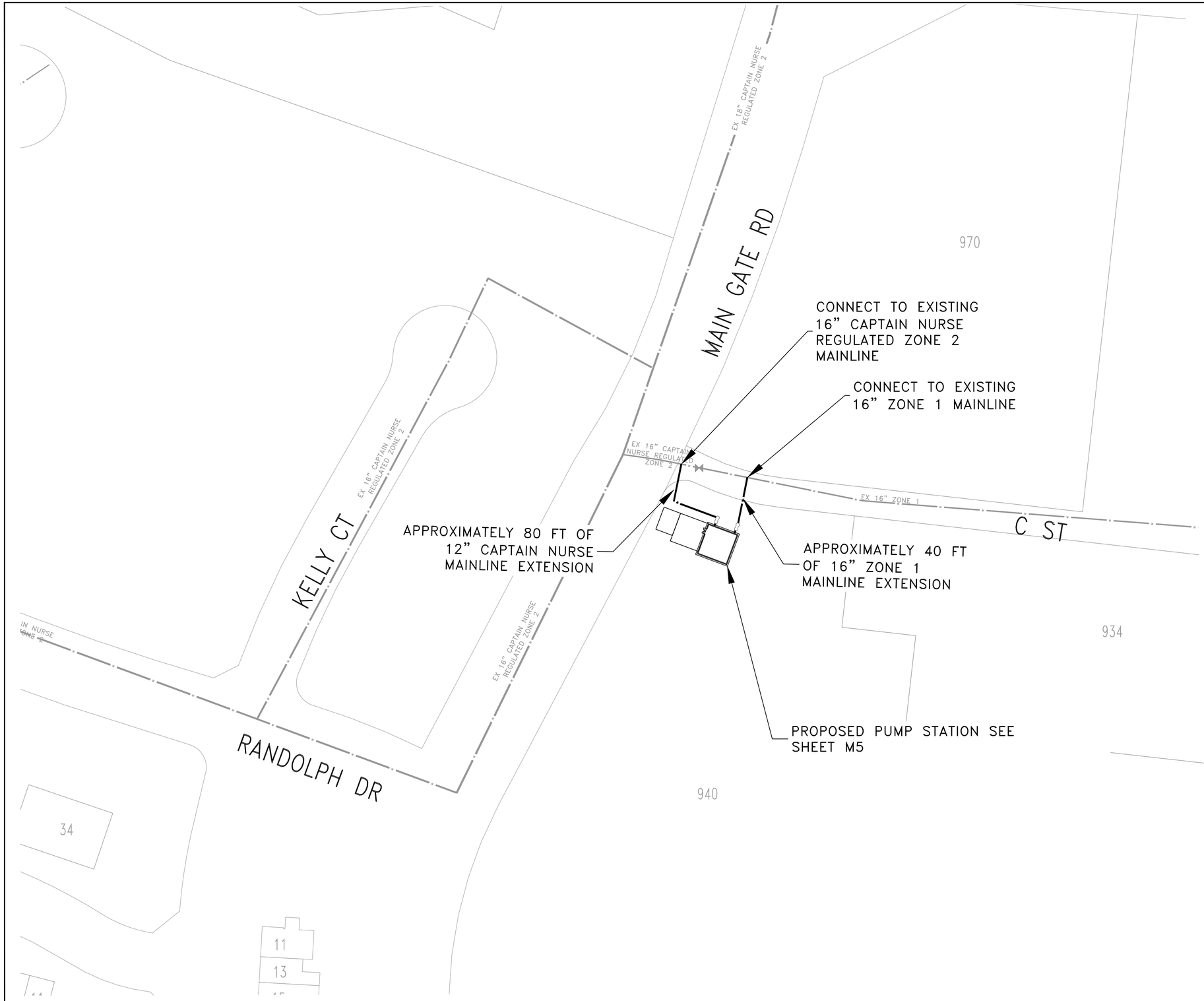
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

SITE 4
ALTERNATIVE D

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 9 OF 19	SHEETS
R.E. C78430			SERVICE AREA	JOB.NO. NO. C6



GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

NOTES:

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5. *THIS SITE LOCATION REQUIRES THE INSTALLATION OF PRESSURE REDUCING VALVES ALONG THE CAPTAIN NURSE REGULATED ZONE 2 ALONG MAIN GATE AND NAVE DRIVE. PLEASE SEE TABLE BELOW.*

PRESSURE REDUCING VALVES		
NUMBER	*APPROXIMATE LOCATION*	*PRESSURE ZONE*
1	*ON MARTIN DR. NORTH OF MARTIN DR. AND MAIN GATE RD. INTERSECTION BEFORE LIVINGSTON CT.*	*CAPTAIN NURSE REGULATED ZONE 2*
2	*ON MAIN GATE RD. WEST OF MARTIN DR. AND MAIN GATE RD. INTERSECTION BEFORE NAVE DR.*	*CAPTAIN NURSE REGULATED ZONE 2*
3	*ON MAIN GATE RD. WEST OF MARTIN DR. AND MAIN GATE RD. INTERSECTION BEFORE NAVE DR.*	*CAPTAIN NURSE REGULATED ZONE 2*
4	*AT THE PARKING LOT OF 5530 NAVE DR. NOVATO, CA, 94949*	*CAPTAIN NURSE REGULATED ZONE 2*
5	*AT THE BASKET BALL BLACKTOP OF HAMILTON MEADOW PARK ELEMENTARY NORTHWEST OF TINKER WAY.*	*CAPTAIN NURSE REGULATED ZONE 2*
6	*PAVED ROADWAY BETWEEN 5420 NAVE DR. AND 5520 NAVE DR. NOVATO, CA, 94949*	*CAPTAIN NURSE REGULATED ZONE 2*
7	*AT THE INTERSECTION OF BOLLING DR. AND NAVE DR.*	*CAPTAIN NURSE REGULATED ZONE 2*

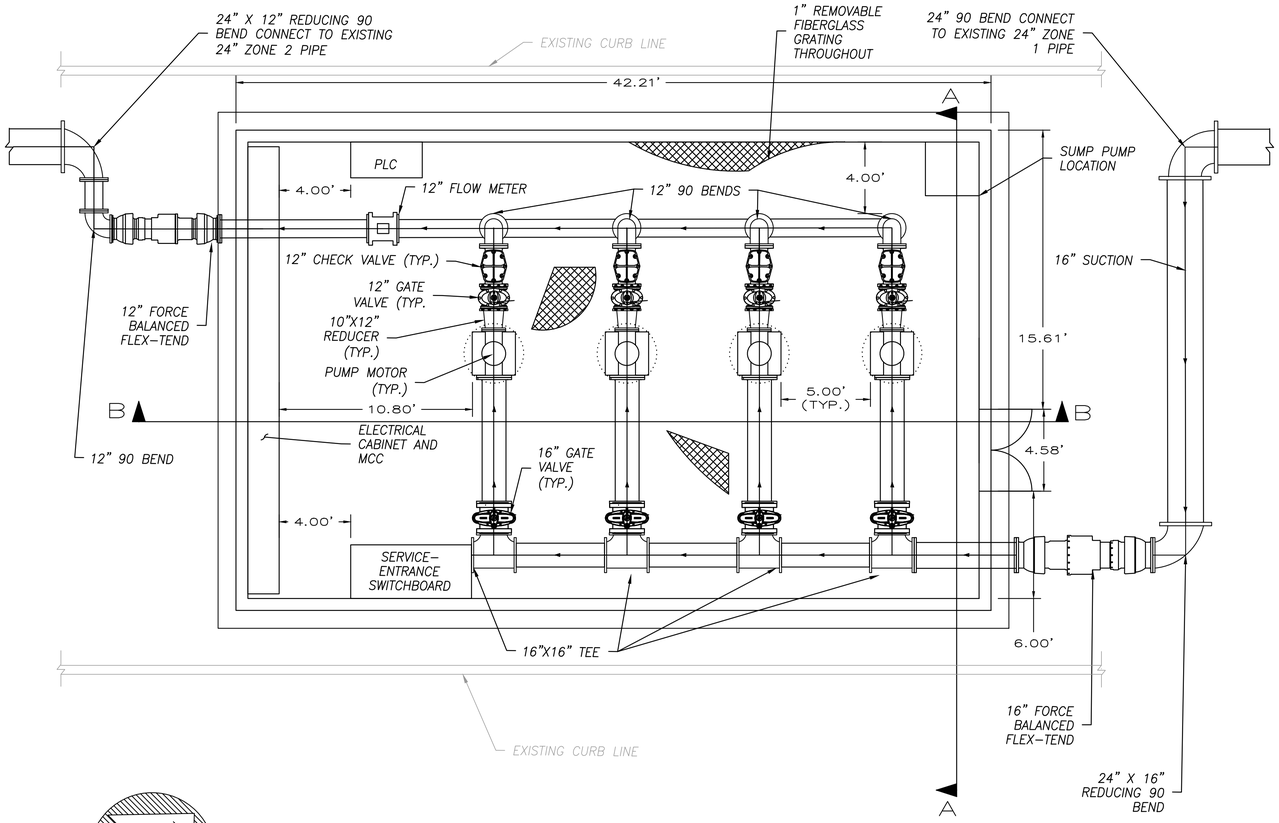
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

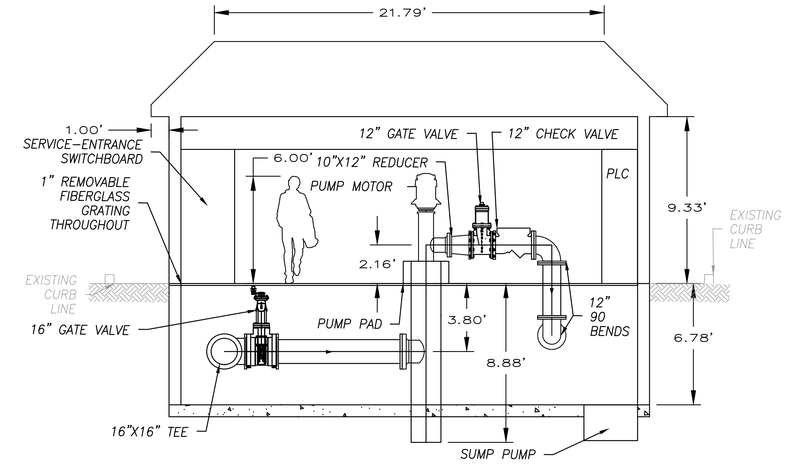
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

SITE 5
ALTERNATIVE E

DES	DR	CH	SCALE : **AS NOTED**	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : **10** OF 19 SHEETS	
R.E. C78430			SERVICE AREA	JOB.NO. NO. **C7**





A-A
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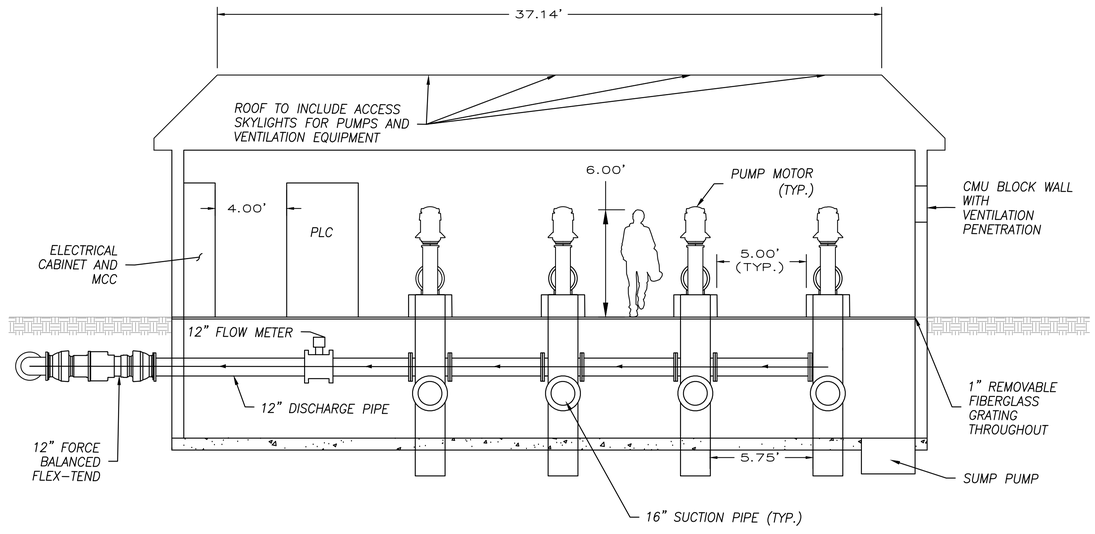
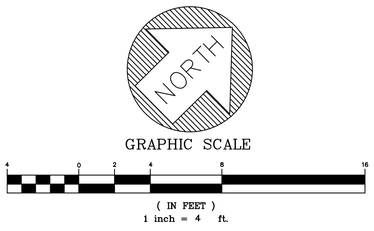
PUMP HOUSE SECTION VIEW
SCALE: 1" = 4'



B-B
–
PUMP HOUSE SECTION VIEW
SCALE: 1" = 4'



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2. THE EXACT POINT OF CONNECTION IS NOTED ONLY AS APPROXIMATE.
3. PUMP SUCTION AND DISCHARGE MUST BE 71 INCHES MEASURED FROM CENTERLINE TO CENTERLINE.
4. PER HYDRAULIC INSTITUTE GUIDELINES THERE MUST BE 5 PIPE DIAMETERS OF STRAIGHT PIPE BETWEEN ANY FLANGE AND THE SUCTION FLANGE.
5. ALL ELECTRICAL CABINETS SHALL HAVE 4 FOOT CLEAR SPACE IN FRONT.

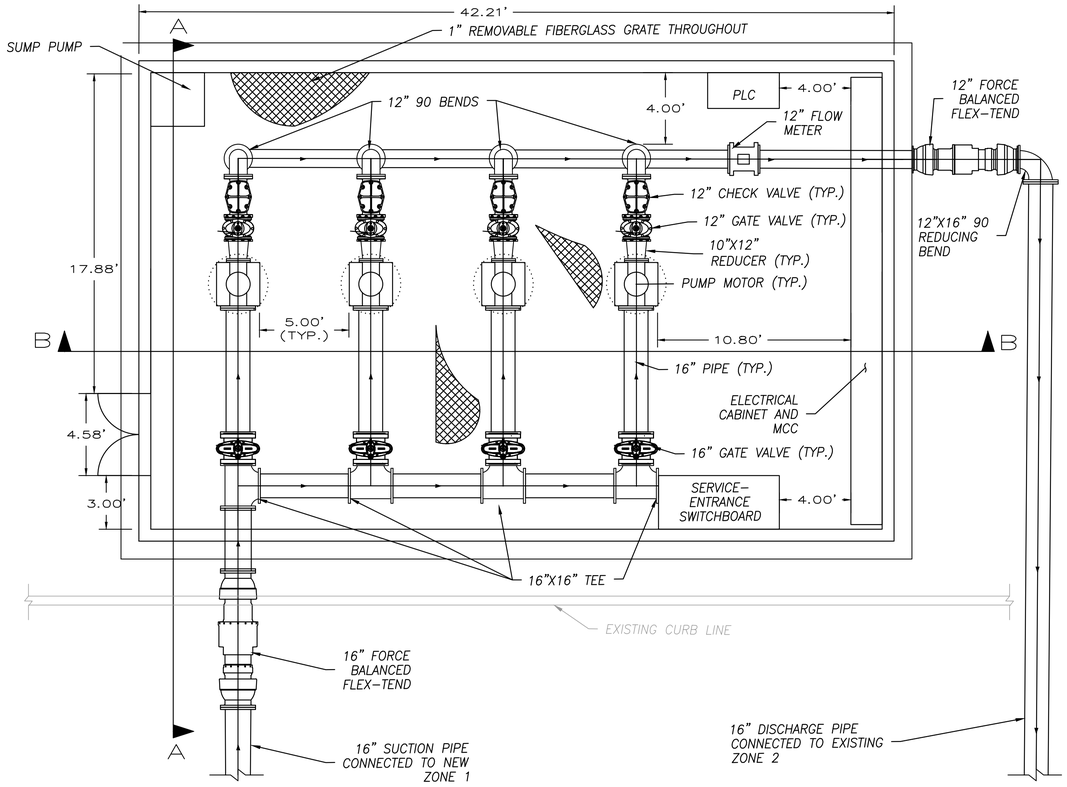
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

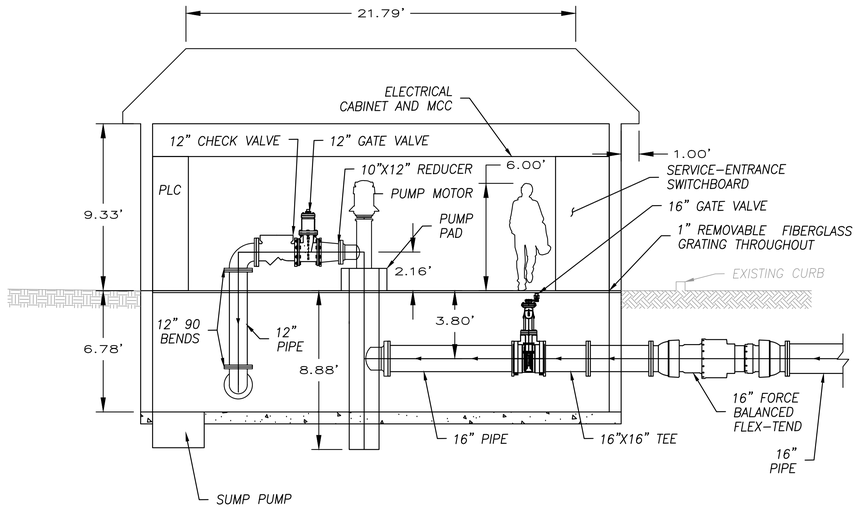
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

PUMP STATION SITE 1 ALTERNATIVE A

DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 11 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. M1

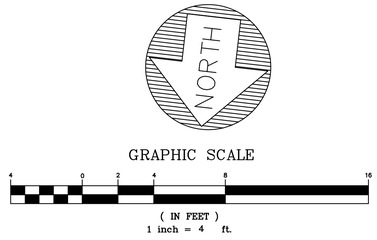


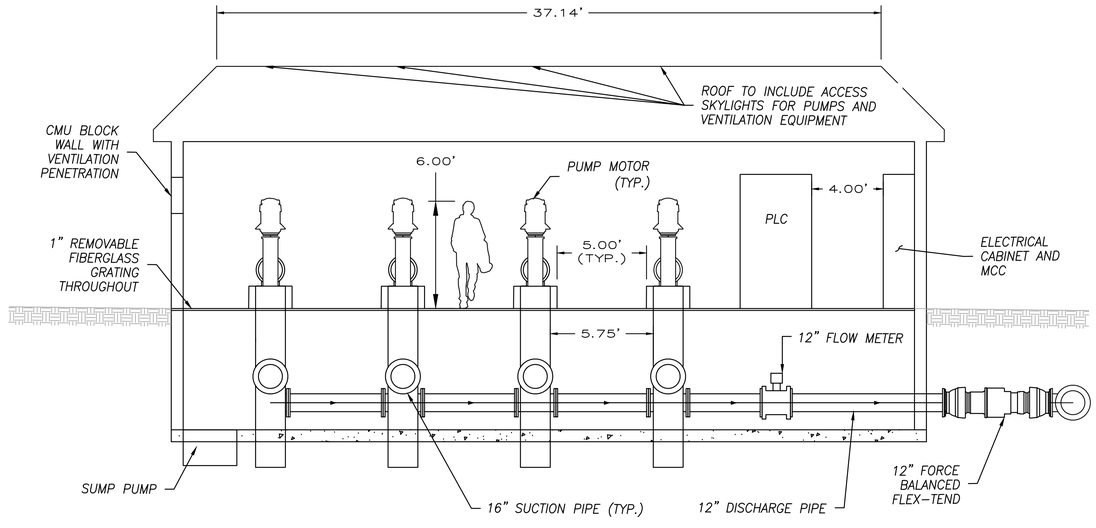


A-A
-

PUMP HOUSE SECTION VIEW

SCALE: 1" = 4'





B-B
-

PUMP HOUSE SECTION VIEW

SCALE: 1" = 4'

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5. ALL ELECTRICAL CABINETS SHALL HAVE 4 FOOT CLEAR SPACE IN FRONT.

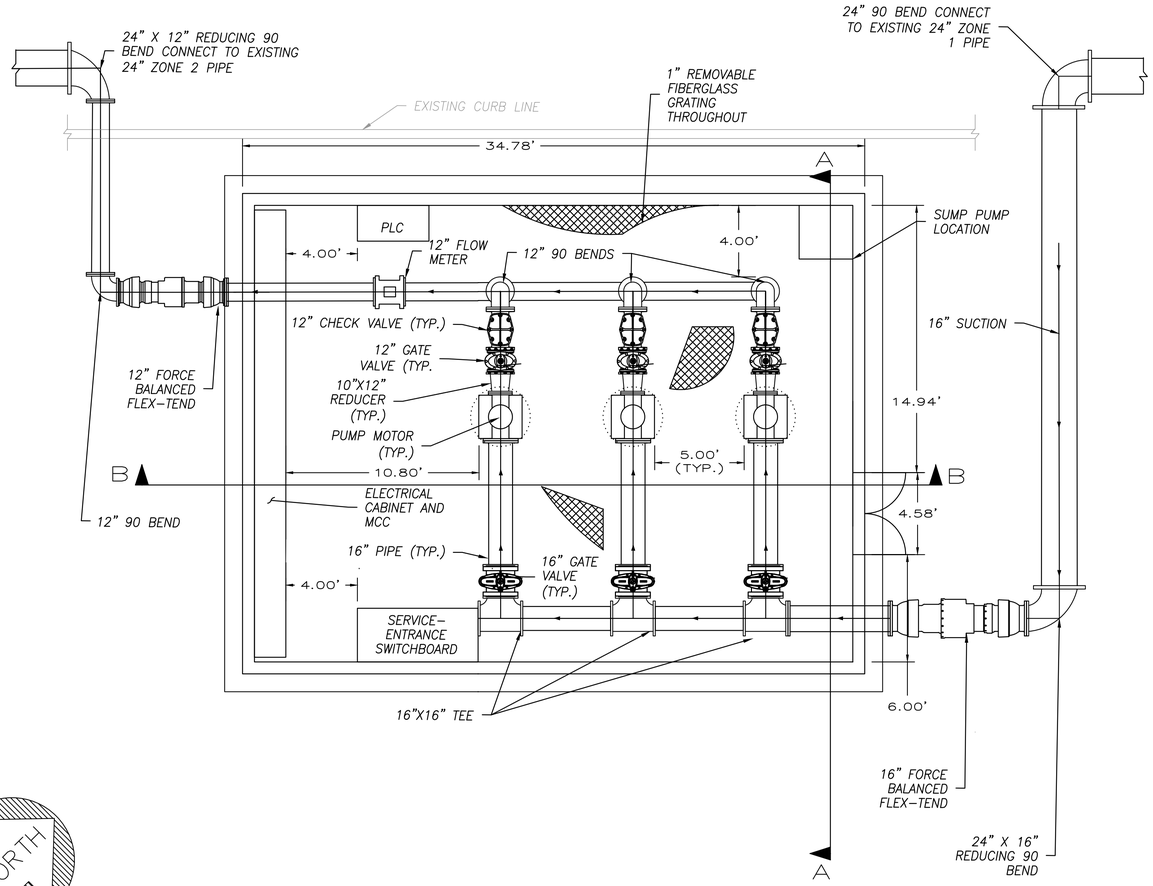
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

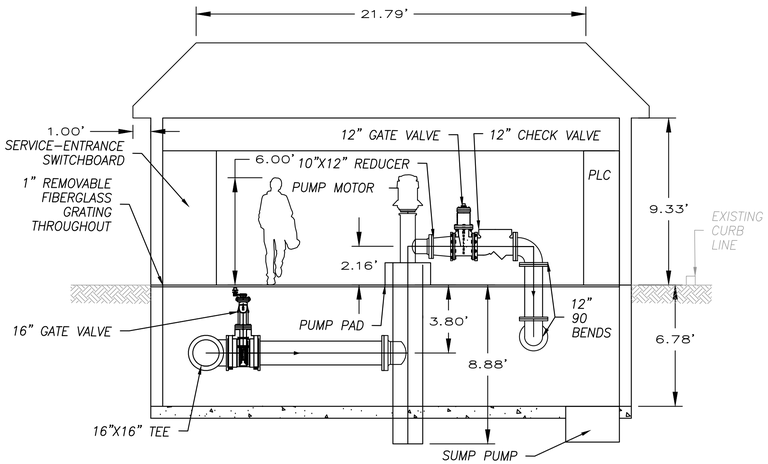
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

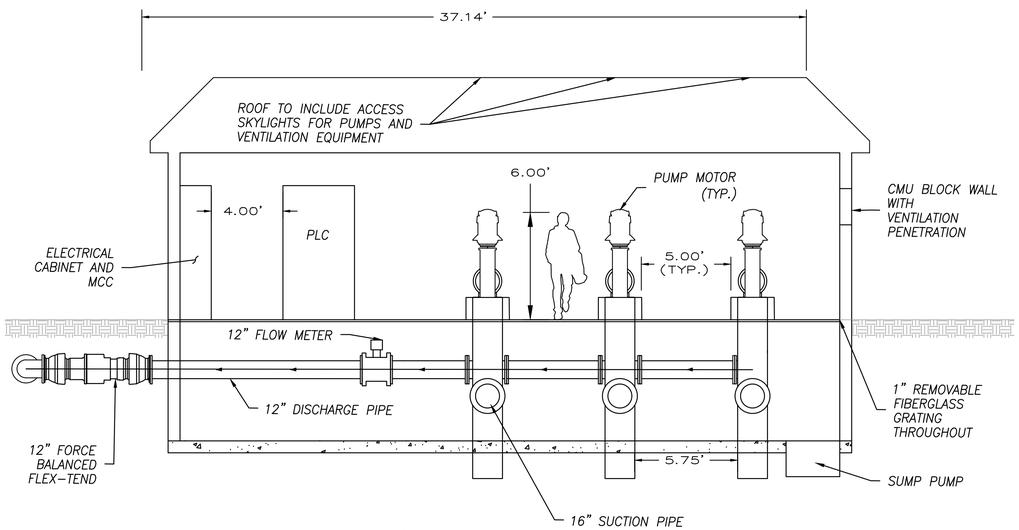
PUMP STATION SITE 2
ALTERNATIVE B

DES	DR	CH	SCALE	: AS NOTED
			DATE	: 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO.	: 12 OF 19 SHEETS
R.E. C78430			SERVICE AREA	JOB.NO. NO. M2

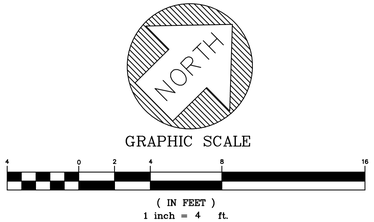




A-A
-
PUMP HOUSE SECTION VIEW
SCALE: 1" = 4'



B-B
-
PUMP HOUSE SECTION VIEW
SCALE: 1" = 4'



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5. ALL ELECTRICAL CABINETS SHALL HAVE 4 FOOT CLEAR SPACE IN FRONT.

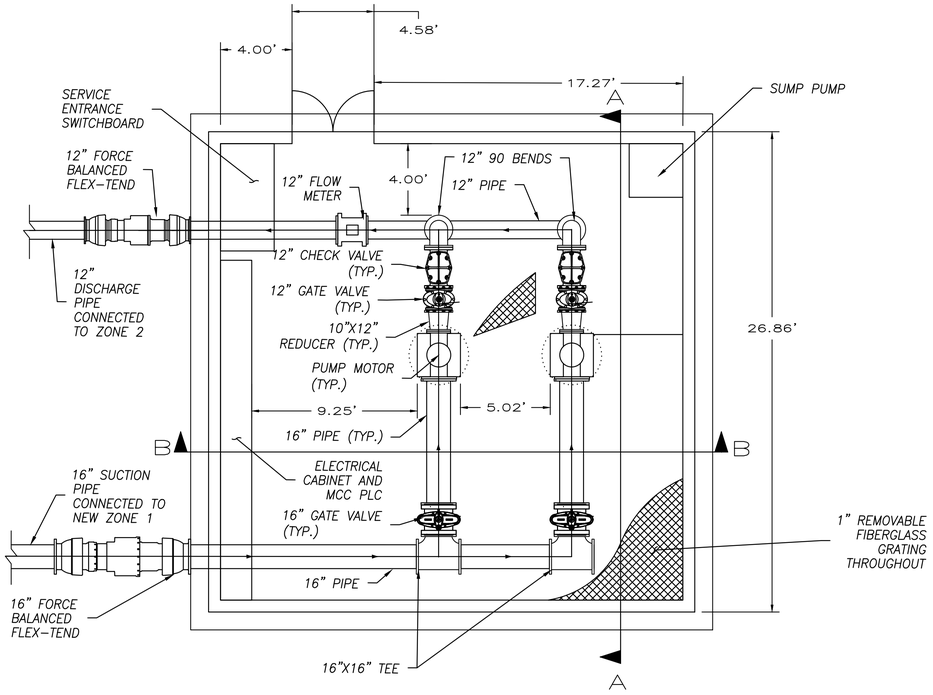
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

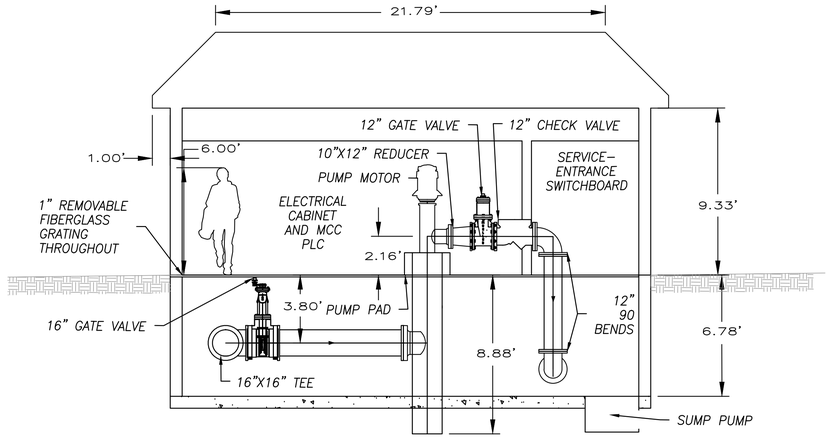
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

PUMP STATION SITE 2
ALTERNATIVE C, D, AND E

DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 13 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. M3





A-A
-

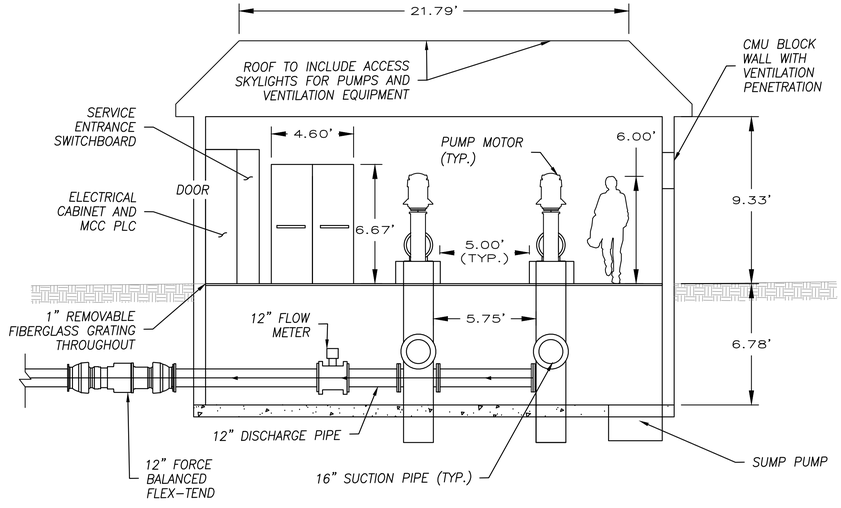
PUMP HOUSE SECTION VIEW

SCALE: 1" = 4'

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1 inch = 4 ft.



B-B
-

PUMP HOUSE SECTION VIEW

SCALE: 1" = 4'

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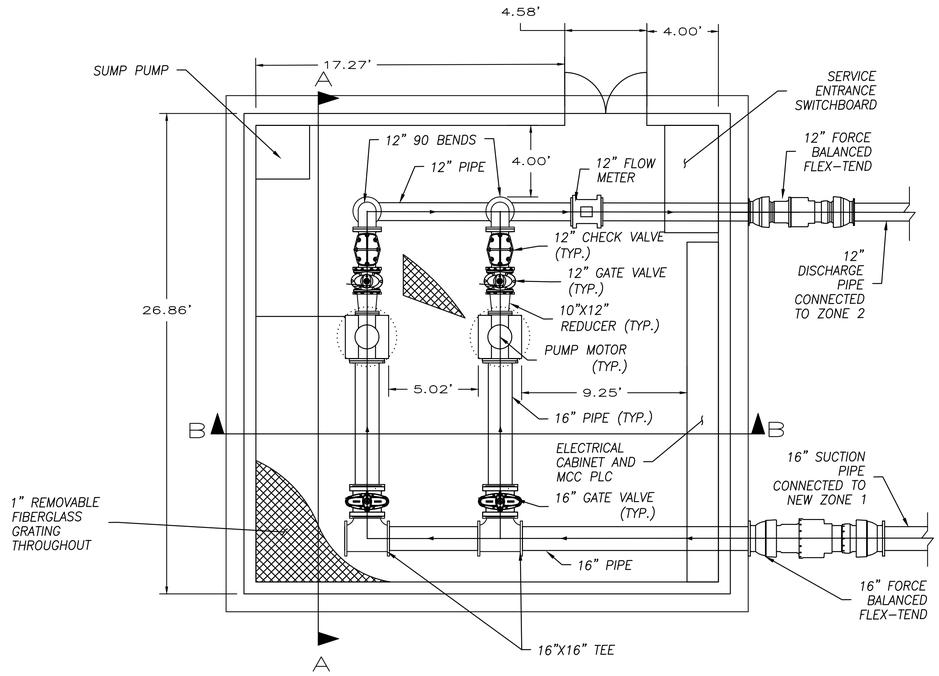
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

PUMP STATION SITE 4 ALTERNATIVE D

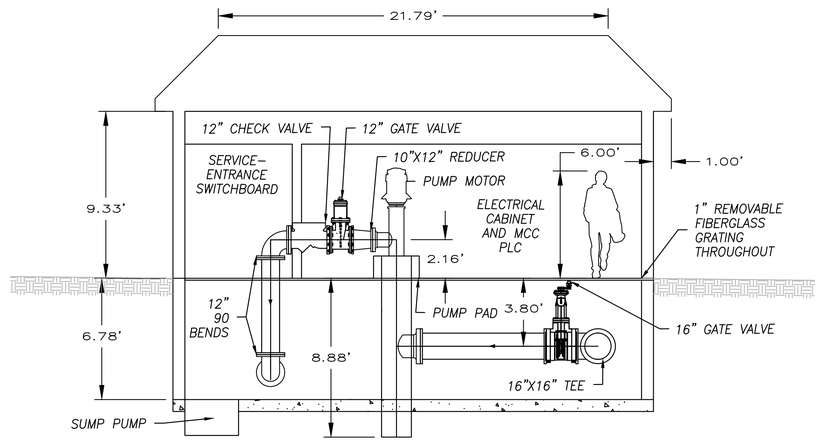
DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 14 OF 19	SHEETS
R.E. C78430			SERVICE AREA	JOB.NO. NO. M4



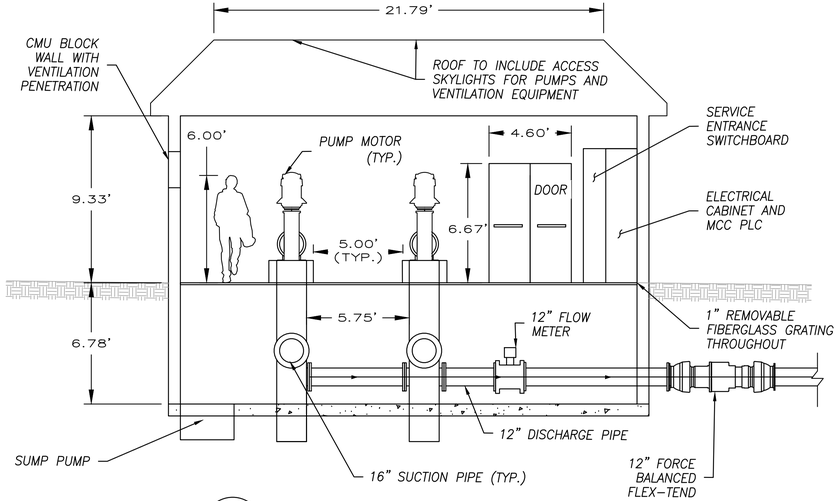
GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
1 inch = 4 ft.



A-A
-
PUMP HOUSE SECTION VIEW
SCALE: 1" = 4'



B-B
-
PUMP HOUSE SECTION VIEW
SCALE: 1" = 4'

NOTES:

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NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

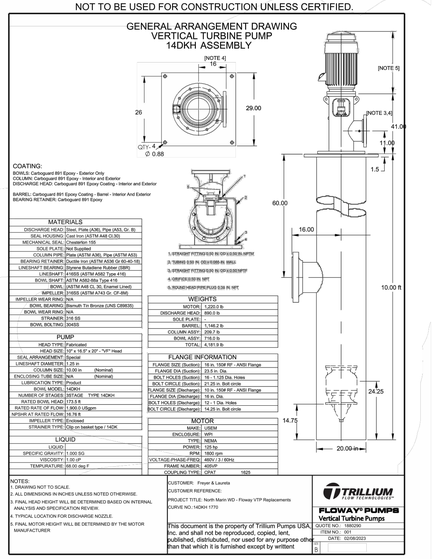
LYNWOOD PUMP STATION REPLACEMENT PROJECT

PUMP STATION SITE 3 AND 5 ALTERNATIVE C AND E

DES	DR	CH	SCALE : AS NOTED	
			DATE : 01/17/2024	
APPROVED: CHIEF ENGINEER			SHEET NO. : 15 OF 19	SHEETS
R.E. C78430			SERVICE AREA	JOB.NO. NO. M5

NOT TO BE USED FOR CONSTRUCTION UNLESS CERTIFIED.

GENERAL ARRANGEMENT DRAWING
VERTICAL TURBINE PUMP
14DKH ASSEMBLY



COATING:
BOWLS: Carboguard 891 Epoxy - Exterior Only
COLUMN: Carboguard 891 Epoxy - Interior and Exterior
DISCHARGE HEAD: Carboguard 891 Epoxy Coating - Interior and Exterior

BARREL: Carboguard 891 Epoxy Coating - Barrel - Interior And Exterior
BEARING RETAINER: Carboguard 891 Epoxy

MATERIALS	
DISCHARGE HEAD	Steel, Plate (A36), Pipe (A53, Gr. B)
SEAL HOUSING	Cast Iron (ASTM A48 CL30)
MECHANICAL SEAL	Chesterton 155
SOLE PLATE	Not Supplied
COLUMN PIPE	Plate (ASTM A36), Pipe (ASTM A53)
BEARING RETAINER	Bronze Iron (ASTM B584 Gr 87-45-18)
LINESHAFT COUPLING	Steel (ASTM A108 Gr 1045)
LINESHAFT	316SS (ASTM A582 Type 416)
BOWL SHAFT	ASTM A582-95a Type 416
BOWL	(ASTM A48 CL 35, Enamel Lined)
IMPELLER	316SS (ASTM A743 Gr. CF-8M)
IMPELLER WEAR RING	N/A
BOWL BEARING	Bismuth Tin Bronze (UNS C89835)
BOWL WEAR RING	N/A
STRAINER	316 SS
BOWL BOLTING	304SS
PUMP	
HEAD TYPE	Fabricated
HEAD SIZE	24" x 16" x 20" - "UT" Head
SEAL ARRANGEMENT	Special
LINESHAFT DIAMETER	1.25 in
COLUMN SIZE	10.00 in (Nominal)
ENCLOSING TUBE	N/A (Nominal)
LUBRICATION TYPE	Product
BOWL MODEL	14DKH
NUMBER OF STAGES	3STAGE TYPE: 14DKH
NUTATION RING	72 / 1.73a Holes
SUCTION FLOW RATING	1,900 @ 145gpm
NPSHR AT RATED FLOW	19.5 ft
IMPELLER TYPE	Enclosed
STRAINER TYPE	Drip on basket type / 14DK
LIQUID	
LIQUID	Water
SPECIFIC GRAVITY	1.000 SG
VISCOSITY	1.00 cP
TEMPERATURE	68.00 deg F

WEIGHTS	
MOTOR	1,220.0 lb
DISCHARGE HEAD	880.0 lb
SOLE PLATE	
BARREL	1,146.2 lb
COLUMN ASSY	2882 lb
BOWL ASSY	715.0 lb
TOTAL	6,181.9 lb

FLANGE INFORMATION	
FLANGE SIZE (Suction)	16 in, 150# RF - ANSI Flange
FLANGE DIA (Suction)	23.5 in, Dia.
BOLT HOLES (Suction)	16 - 1.128 Dia. Holes
BOLT CIRCLE (Suction)	21.25 in, Bolt circle
FLANGE SIZE (Discharge)	10 in, 150# RF - ANSI Flange
FLANGE DIA (Discharge)	16 in, Dia.
BOLT HOLES (Discharge)	12 - 1.0 Dia. Holes
BOLT CIRCLE (Discharge)	14.25 in, Bolt circle

MOTOR	
MAKE	USEM
ENCLOSURE	WPI
TYPE	NEMA
POWER	125 hp
RPM	1800 rpm
VOLTAGE-PHASE-FREQ	460V / 3 / 60Hz
FRAME NUMBER	405HP
COUPLING TYPE	GRAT 1825

1. STRAINER PIT/CNG/125 IN OR 0.125 IN APTER
2. TURBINE 0.09 IN OR 0.0189 IN BBG
3. STRAINER PIT/CNG/125 IN OR 0.0FX0.03/SPTF
4. VERTICO 0.09 IN WPT
5. BOWLS HEIGHT PIPE/CNG 0.03 IN WPT

NOTES:
1. DRAWING NOT TO SCALE.
2. ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE.
3. FINAL HEAD HEIGHT WILL BE DETERMINED BASED ON INTERNAL ANALYSIS AND SPECIFICATION REVIEW.
4. TYPICAL LOCATION FOR DISCHARGE NOZZLE.
5. FINAL MOTOR HEIGHT WILL BE DETERMINED BY THE MOTOR MANUFACTURER.

CUSTOMER: Freyer & Laureta
CUSTOMER REFERENCE:
PROJECT TITLE: North Marin WD - Floway VTP Replacements
CURVE NO.: 14DKH 1770

FLOWAY® PUMPS
Vertical Turbine Pumps
QUOTE NO.: 1880290
ITEM NO.: 001
DATE: 02/08/2023
REV:
S

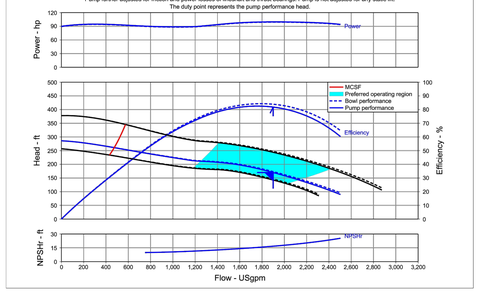
1 – 1,900 GPM PUMP CUT SHEET
SCALE: N.T.S.

FLOWAY® PUMPS — Pump Performance Datasheet

Customer	: Freyer & Laureta	Quote number	: 1880290
Customer reference	:	Size	: 14DKH
Item number	: 001	Stages	: 3
Service	: Duplicate Hydraulics to 53013, 50734-2 & 48398	Based on curve number	: 14DKH 1770 Rev. 0
Quantity	: 3	Date last saved	: 02/08/2023 12:01 PM

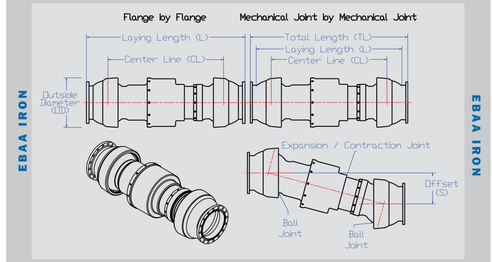
Operating Conditions		Liquid	
Flow, rated	: 1,900.0 USgpm	Liquid type	: Water - Potable
Differential head / pressure, rated (requested)	: 170.0 ft	Solids diameter, max	: -00.00 in
Differential head / pressure, rated (actual)	: 171.2 ft	Solids concentration, by volume	: 0.00 %
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Solids concentration, by weight	: 0.00 %
NPSH available, rated	: Ample	Temperature, max	: 68.00 deg F
Site Supply Frequency	: 60 Hz	Fluid density, rated / max	: 1.000 / 1.000 SG
Performance		Viscosity, rated	: 1.00 cP
Speed criteria	: Synchronous	Vapor pressure, rated	: 0.00 psi.a
Speed, rated	: 1770 rpm	**Material**	
Impeller diameter, rated	: 8.00 in	Bowl material selected	: Cast Iron
Impeller diameter, maximum	: 9.13 in	Impeller material selected	: 316SS
Impeller diameter, minimum	: 7.50 in	**Pressure Data**	
Efficiency (bowl / pump)	: 83.92 / 81.84 %	Maximum working pressure	: See the Additional Data page
NPSH required / margin required	: 16.76 / 0.00 ft	Component pressure limit	: See the Additional Data page
Ns (imp. eye flow) / Nss (imp. eye flow)	: 3,083 / 9,013 US Units	Maximum allowable suction pressure	: N/A
MCSF	: 473.7 USgpm	Hydrostatic test pressure	: See the Additional Data page
Head, maximum, rated diameter	: 286.0 ft	**Driver & Power Data (@1st density)**	
Head rise to shutoff (bowl / pump)	: 64.88 / 68.24 %	Driver sizing specification	: Max power + 4%
Flow, best eff. point (bowl / pump)	: 1,790.0 / 1,757.6 USgpm	Margin over specification	: 0.00 %
Flow ratio, rated / BEP (bowl / pump)	: 106.14 / 108.10 %	Service factor	: 1.15
Diameter ratio (rated / max)	: 87.67 %	Power, hydraulic	: 83.23 hp
Head ratio (rated dia / max dia)	: 70.13 %	Power (bowl / pump)	: 99.18 / 99.66 hp
Cq/Cm/CeCn (ANSI/HI 9.6.7-2010)	: 1.00 / 1.00 / 1.00 / 1.00	Power, maximum, rated diameter	: 99.67 hp
Selection status	: Acceptable	Minimum recommended motor rating	: 125 hp / 93.21 kW

Pump and bowl (dashed) performance. Bowl adjusted for construction and viscosity.
Pump further adjusted for friction and power losses of lineshaft and thrust bearings. Pump is not adjusted for any static lift.
The duty point represents the pump performance head.



2 – 1,900 GPM PUMP PERFORMANCE CURVE
SCALE: N.T.S.

FLEX-TEND Force Balanced Submittal Drawing



*DIMENSIONS ARE IN INCHES

Nominal Pipe Size	OD	D*	E**	CL	S	Flange by Flange: Series Number	Flange by Flange: L	Flange by Flange: Weight (lbs)	Mechanical Joint by Mechanical Joint: Series Number	Mechanical Joint by Mechanical Joint: L	Mechanical Joint by Mechanical Joint: TL	Mechanical Joint by Mechanical Joint: Weight (lbs)
3	10.2	20°	8	42.5	15.9	4403F208	53.7(±4)	210	4403M208	50.3 (±4)	55.3 (±4)	204
4	10.2	20°	8	42.5	15.9	4404F208	53.8(±4)	167	4404M208	49.7 (±4)	54.7 (±4)	206
6	12.3	20°	8	44.0	16.5	4406F208	56.8(±4)	275	4406M208	52.4 (±4)	57.4 (±4)	316
8	14.9	20°	8	48.1	17.8	4408F208	62.9(±4)	377	4408M208	57.8 (±4)	62.8 (±4)	496
10	18.1	20°	8	50.6	18.7	4410F208	67.0(±4)	594	4410M208	63.0 (±4)	68.0 (±4)	635
12	20.8	20°	8	52.9	19.4	4412F208	72.0(±4)	786	4412M208	66.3 (±4)	71.3 (±4)	880
14	26.5	15°	10	65.3	17.5	4414F208	93.5(±5)	1,846	4414M208	84.6 (±5)	91.5 (±5)	1768
16	26.5	15°	10	65.3	17.5	4416F208	91.5(±5)	1,779	4416M208	86.0 (±5)	93.0 (±5)	1709
18	29.8	15°	10	69.5	18.6	4418F208	95.4(±5)	2,573	4418M208	87.6 (±5)	94.6 (±5)	2431
20	33.1	15°	12	75.0	20.1	4420F208	98.3(±6)	2,885	4420M208	95.7 (±6)	102.7 (±6)	2697
24	39.1	15°	12	81.7	20.6	4424F208	110.9(±6)	4,394	4424M208	109.0 (±6)	116.0 (±6)	4340
30	47.8	15°	16	103.5	28.9	4430F208	136.8(±8)	9,224	4430M208	127.2 (±8)	135.2 (±8)	9156
36	59.3	15°	16	105.9	29.5	4436F208	140.1(±8)	11,158	–	–	–	–
48	79.4	12°	24	148.0	33.2	4448F208	193.0(±12)	26,680	–	–	–	–

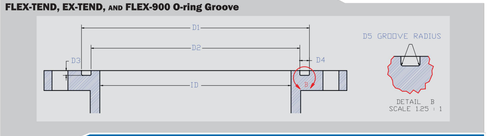
NOTE: Dimensions are in inches, and are subject to change without notice.
End connection combinations available (14 inch - 24 inch).
*Deflection Angle is per ball.
**Maximum expansion.

Additional Applications

Applicable
- Potable or Non-Potable Water (no solids or debris)
- Fire Service Mains
- Fire Sprinkler Systems
- Chilled or Heated Water Systems (HVAC)
- Above or Below Ground

Not Applicable
- Water with solids, such as storm or waste-sewage (use standard FLEX-TEND)
- Petroleum liquids or gas
- Steam

FLEX-TEND, EX-TEND, and FLEX-900 O-ring Groove



Size	D1	D2	D3	D4	D5	O-ring Diameter	O-ring Part Number
3	4.885	4.185	0.175	0.350	0.0625	0.25	983003
4	5.900	4.700	0.300	0.600	0.0625	0.5	983004
6	8.00	6.800	0.300	0.600	0.0625	0.5	983006
8	10.100	8.900	0.300	0.600	0.0625	0.5	983008
10	12.200	11.000	0.300	0.600	0.0625	0.5	983010
12	14.300	13.100	0.300	0.600	0.0625	0.5	983012
14	16.200	15.00	0.300	0.600	0.0625	0.5	983014
16	18.500	16.900	0.400	0.800	0.1250	0.625	983016
18	20.700	19.100	0.400	0.800	0.1250	0.625	983018
20	23.000	21.400	0.400	0.800	0.1250	0.625	983020
24	27.200	25.600	0.400	0.800	0.1250	0.625	983024
30	33.500	31.700	0.400	0.900	0.1250	0.75	983030
36	40.000	38.300	0.400	0.850	0.1250	0.75	983036
42	46.580	44.080	0.650	1.250	0.1250	N/A	983042
48	52.720	50.220	0.650	1.250	0.1250	1	983048

Sample Specification
1. Flexible expansion joints shall be installed in the locations indicated on the drawings and shall be manufactured of ductile iron conforming to the material requirements of ASTM A536 and ANSI/AWWA C153/A21.53. Foundry certification of material shall be readily available upon request.
2. Each flexible expansion joint shall be pressure tested prior to shipment against its own restraint to a minimum of 350 PSI for 3 inch through 16 inch and 250 PSI for 18 inch and greater. A minimum 2:1 safety factor; determined from the published pressure rating, shall apply.
3. Each flexible expansion joint shall consist of an expansion joint designed and cast as an integral part of a ball and socket type flexible joint, having a minimum per ball deflection of: 20° for sizes 4-inch through 12-inch; 15° for sizes 14-inch through 36-inch and 12 ° for size 48-inch. The flexible expansion fitting shall not expand or exert an axial imparting thrust under internal water pressure. The flexible expansion fitting shall not increase or decrease the internal water volume as the unit expands or contracts. The minimum total linear travel shall be 8-inches.
4. All internal surfaces (wetted parts) shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. Sealing gaskets shall be constructed of EPDM. The coating shall meet ANSI/NSF-61.
5. Exterior surfaces shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16.
6. Polyethylene sleeves, meeting ANSI/AWWA C105/A21.5, shall be included for direct buried applications.
7. Manufacturer's certification of compliance to the above standards and requirements shall be readily available upon request. The purchaser (or owner) shall reserve the right to inspect the manufacturer's facility for compliance. All flexible expansion joints shall be The Force Balanced FLEX-TEND as manufactured by EBAA Iron, Inc. Eastland, TX., U.S.A.

Important Notes
The EBAA Force Balanced Flex-Tend® is particularly suited for use in above ground applications where unbalanced thrust forces are neither desirable nor easily accommodated. These applications require special attention to the overall forces and restraint of the piping system.

The installation of a Force Balanced Flex-Tend requires the restraint of all adjacent pipe joints in order to transfer expansion/contraction forces to the unit and to produce the desired force-balancing effect without undue movement or separation of the adjacent joints. Lock-ring type pipe and fitting joints are required to have the assembly clearance removed by extending the joint prior to the installation of the Force Balanced Flex-Tend and pressurization of the system.

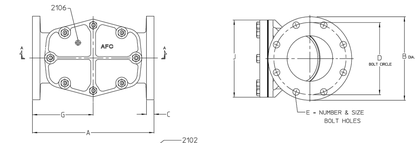
Joint restraint and clearance removal of adjacent joints is necessary in both above and below ground Force Balanced Flex-Tend installations.

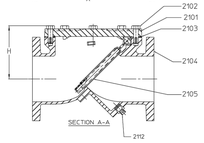
When connecting a Force Balanced FLEX-TEND to HDPE pipe, a flanged end connection is required. This is to be joined to a fused flange adapter on the HDPE pipe. A filler flange between the two gaskets is necessary to assure proper seal contact.

3 – FLEX-TEND FORCE BALANCED FLEXIBLE EXPANSION JOINTS
SCALE: N.T.S.

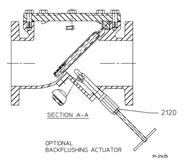
AMERICAN Flow Control Submittal Information

3" - 12" SERIES 2100 RESILIENT SEATED CHECK VALVE





Ref. No.	Description	Material
2101	Bonnet	Ductile Iron ASTM A536 Grade 65-45-12
2102	Bonnet Bolts	304 Stainless Steel
2103	Bonnet Gasket	EPDM Rubber
2104	Flanged Ends Body	Ductile Iron ASTM A536 Grade 65-45-12
2105	Disc	See Note 6
2106	Pipe Plug, 3/8" NPT	Stainless Steel
2112	Pipe Plug, Square Head	Stainless Steel
2120	Backflushing Actuator	Assembly



NOTES:
1. Series 2100 Check Valves meet or exceed requirements of ANSI/AWWA C508.
2. 250 psig rated working pressure, 500 psig test pressure.
3. Bolt patterns of class 125 flanged ends are in accordance with ANSI/AWWA C110/A21.10 (ASME B16.1 class 125).
4. Body and bonnet coated with fusion-bonded-epoxy coating in compliance with ANSI/AWWA C550.
5. Valves have manufacturer's name, pressure class and year of manufacture cast on body or bonnet.
6. Disc is ductile iron with stainless steel shaft and nylon reinforcement, all encapsulated with EPDM rubber.
7. 3"-16" valves are Certified to NSF/ANSI 61 & 372.

Size	3	4	6	8	10	12
A	11.00	13.00	16.00	19.50	24.50	27.50
B	7.50	9.00	11.00	13.50	16.00	19.00
C	0.75	0.94	1.00	1.13	1.19	1.25
D	6.00	7.50	9.50	11.75	14.25	17.00
E	4 - 0.75	8 - 0.75	8 - 0.88	8 - 0.88	12 - 1.00	12 - 1.00
G	5.50	6.50	8.00	9.75	12.25	13.75
H	4.50	5.19	7.00	8.41	10.19	11.94
J	5.31	6.75	10.25	12.06	14.88	17.63
Weight	31 lbs.	53 lbs.	110 lbs.	165 lbs.	268 lbs.	390 lbs.

AMERICAN FLOW CONTROL
THE RIGHT WAY

AMERICAN Flow Control
P.O. Box 2727
Birmingham, AL 35202-2727
Phone: 800-423-1951
Fax: 800-930-3965
Email: afcsales@american-usa.com

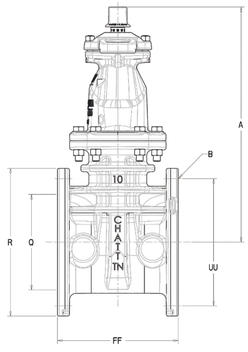
Waterous Company
125 Hardman Avenue South
South St. Paul, Mn. 55075-1191
Phone: 800-533-3636
Fax: 800-930-3636
Email: afcsales@american-usa.com

WWW.AMERICAN-USA.COM

4 – 12 IN CHECK VALVE
SCALE: N.T.S.

3"- 12" A-2361 RESILIENT WEDGE GATE VALVES - FL. x FL.

MUELLER 10.7
Rev. 1-22



Dimensions

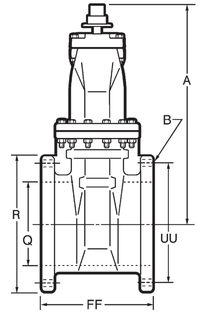
Dimension	Nominal Size: 3"	4"	6"	8"	10"	12"
A	12.38	14.19	18.00	21.50	25.50	28.62
R	7.50	9.00	11.00	13.50	16.00	19.00
FF	8.00	9.00	10.50	11.50	13.00	14.00
Q (bore)	3.30	4.30	6.30	8.30	10.30	12.30
UU (bolt circle diameter)	6.00	7.50	9.50	11.75	14.25	17.00
B (number and size of holes)	4–.75	8–.75	8–.88	8–.88	12–1.00	12–1.00
Turns to open	11	14	20.5	26.5	33	38.5
Weight*	73	81	136	213	326	440
Closing Torque (FT-LBS), Non-Geared	52	75	110	150	185	225
Closing Torque (FT-LBS), Bevel	31	44	65	88	109	132
Closing Torque (FT-LBS), Spur	N/A	41	60	82	101	123

*All dimensions are in inches. All weights are in pounds and are approximate.

5 – 12 IN GATE VALVE
SCALE: N.T.S.

14"- 54" A-2361 D.I. RESILIENT WEDGE GATE VALVES - FL. x FL.

MUELLER 10.25
Rev. 1-22



Dimensions

Dimension*	Nominal Size: 14"	16"	18"	20"	24"	30" †	36" †	42" †	48" †	54" †
A	32.75	37.88	44.19	48.25	53.88	See A for Spur or Bevel Gear				
R	21.00	23.50	25.00	27.50	32.00	38.75	46.00	53.00	59.50	66.34
FF	15.06	16.06	17.00	18.00	20.00	26.00	30.00	38.00	43.00	48.00
Q (bore)	14.38	16.00	18.38	20.38	24.38	30.38	36.38	42.38	48.38	48.38
UU (bolt circle diameter)	18.75	21.25	22.75	25.00	29.50	36.00	42.75	49.50	56.00	62.76
B (number and size of holes)	12–1.125	16–1.125	16–1.25	20–1.25	20–1.38	28–1.38	32–1.63	36–1.63	44–1.63	44–2.00
A- Spur Gear	40.49	43.58	49.41	53.01	59.15	70.81	83.08	97.74	109.70	109.70
A - Bevel Gear**	34.55	37.77	44.50	47.69	54.06	64.93	77.19	90.75	102.61	102.61
Turns to open (without gearing)	43.5	49	57	63	75	-	-	-	-	-
Turns to open (Spur gearing)††	178	201	234	258	308	381	455	524	596	596
Turns to open (Bevel gearing)††	174	196	228	252	300	372	444	524	596	596
Weight*	690	859	1284	1774	2481	6390	8220	13400	19978	20900
Closing Torque (FT-LBS), Non-Geared	225	275	275	300	325	N/A	N/A	N/A	N/A	N/A
Closing Torque (FT-LBS), Bevel	66	81	81	88	96	132	162	206	235	294
Closing Torque (FT-LBS), Spur	61	75	75	81	88	122	149	199	227	284

*All dimensions are in inches. All weights are in pounds and are approximate. Weights for 30"-54" valves are with gearing; for all others without gearing.
**Center line of operating nut to center line of valve.
†Spur or Bevel Gear must be used with 30", 36", 42", 48" & 54" valves.
††Turns shown are for Rotoric gearing supplied by Mueller Co.

6 – 16 IN GATE VALVE
SCALE: N.T.S.

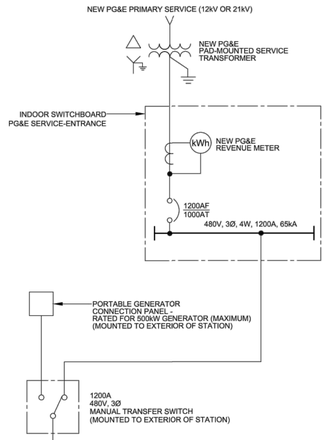
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

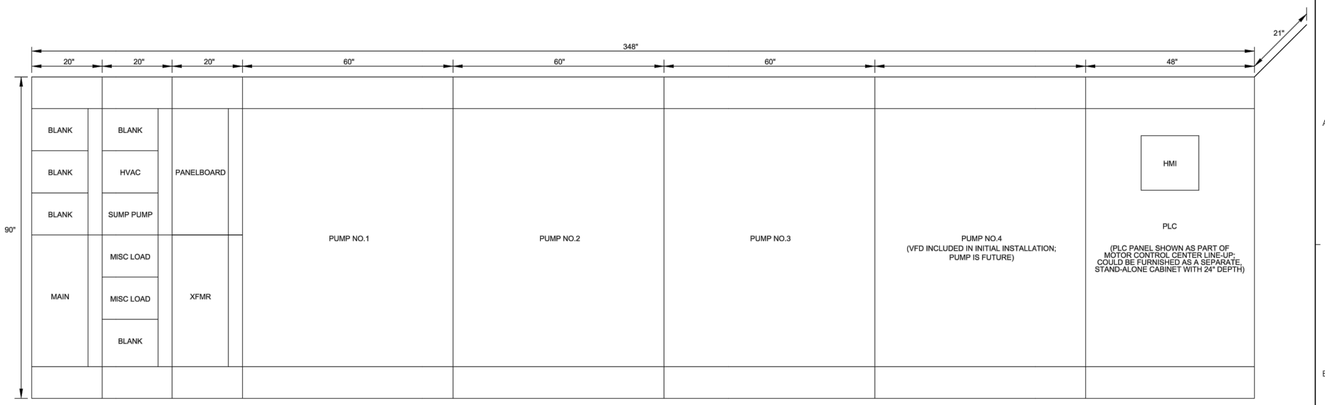
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

DETAILS

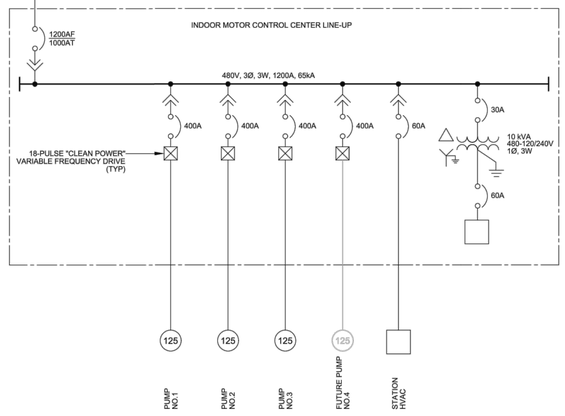
DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 16 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. M6

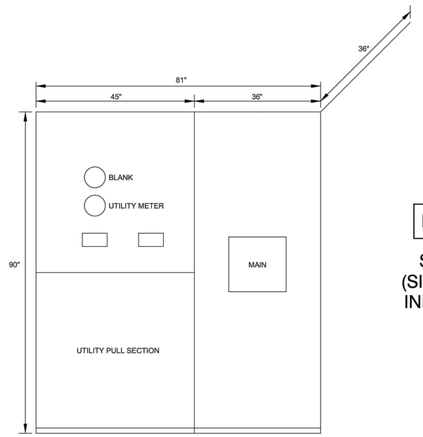




FRONT ELEVATION - OPTION "3" INDOOR MOTOR CONTROL CENTER LINE-UP

SCALE: NO SCALE





48 INCHES CLEAR SPACE IN FRONT OF SWITCHBOARD REQUIRED PER PG&E

FRONT ELEVATION - INDOOR SERVICE-ENTRANCE SWITCHBOARD

SCALE: NO SCALE

ELECTRICAL CONFIGURATION OPTION "3"

SYSTEM SIZED FOR FOUR (4) 125HP PUMPS (SIMULTANEOUS OPERATION OF FOUR PUMPS); INITIAL INSTALLATION INCLUDES 3 PUMPS WITH PROVISIONS FOR A FOURTH, FUTURE PUMP

NO:	DATE	BY	REVISIONS
			PRELIMINARY NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER TODD A. BEECHER E014712 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA

NMWD PROJECT NO.:	xxxxxx
DESIGN BY:	TB
DRAWN BY:	BEI
CHECKED BY:	xxx
DRAWING DATE:	APRIL 2023

Beecher Engineering, Inc.

NORTH MARIN WATER DISTRICT
LYNWOOD PUMP STATION
PRE-DESIGN REPORT

NORTH MARIN WATER DISTRICT

ELECTRICAL

LYNWOOD PUMP STATION - OPTION "3" SINGLE LINE DIAGRAM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NO. xxxxxx
DRAWING NO. E013
SHEET NO. x OF xxx

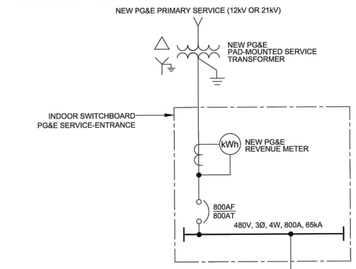
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

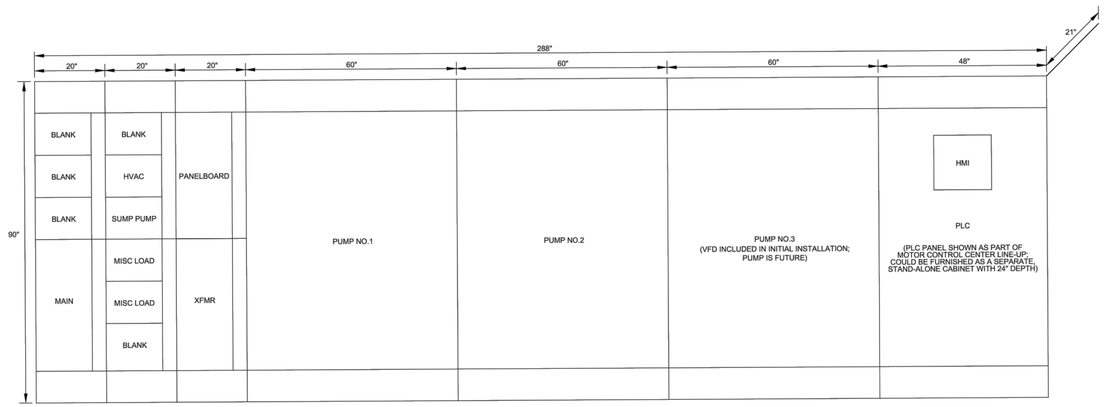
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

ALTERNATIVE 1 + 2
ELECTRICAL EQUIPMENT

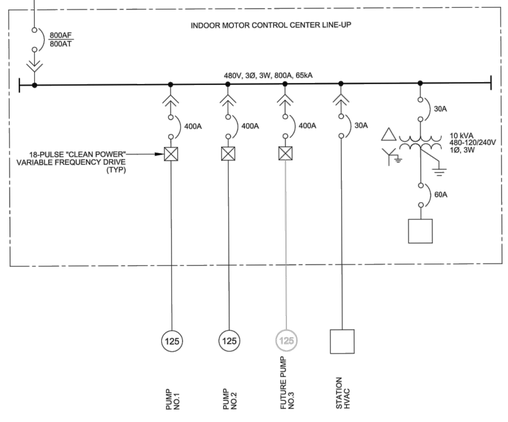
DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 12 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. E1

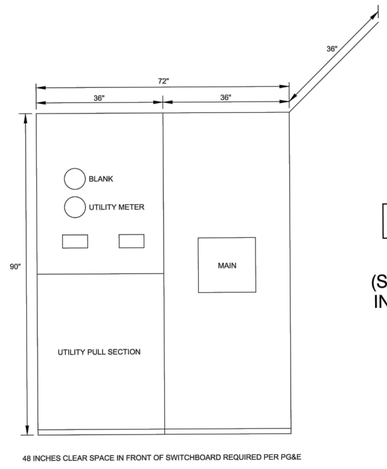




FRONT ELEVATION - OPTION "2" INDOOR MOTOR CONTROL CENTER LINE-UP

SCALE: NO SCALE





48 INCHES CLEAR SPACE IN FRONT OF SWITCHBOARD REQUIRED PER PG&E

FRONT ELEVATION - INDOOR SERVICE-ENTRANCE SWITCHBOARD

SCALE: NO SCALE

ELECTRICAL CONFIGURATION OPTION "2"

SYSTEM SIZED FOR THREE (3) 125HP PUMPS (SIMULTANEOUS OPERATION OF THREE PUMPS); INITIAL INSTALLATION INCLUDES 2 PUMPS WITH PROVISIONS FOR A THIRD, FUTURE PUMP

NO:	DATE	BY	REVISIONS
			PRELIMINARY NOT FOR CONSTRUCTION

LOUIS A. BEECHER JR. — REGISTERED PROFESSIONAL ENGINEER — E014713 — Exp. 6/30/23 — ELECTRICAL — STATE OF CALIFORNIA

NMWD PROJECT NO.:	xxxxxxx
DESIGN BY:	TB
DRAWN BY:	BEI
CHECKED BY:	xxx
DRAWING DATE:	APRIL 2023

Beecher Engineering, Inc.

NORTH MARIN WATER DISTRICT
LYNWOOD PUMP STATION
PRE-DESIGN REPORT

NORTH MARIN WATER DISTRICT

ELECTRICAL

LYNWOOD PUMP STATION -
OPTION "2" SINGLE LINE DIAGRAM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NO. xxxxxx
DRAWING NO. E012
SHEET NO. x OF xxx

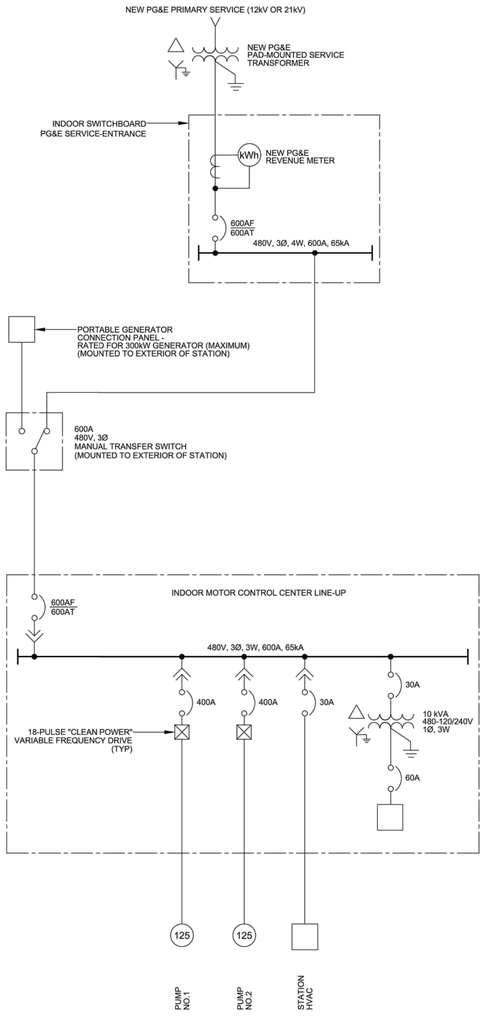
NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

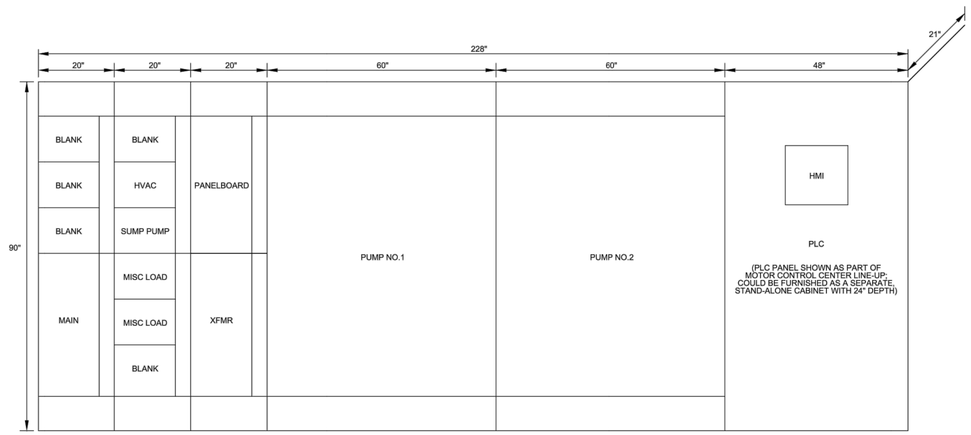
NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

ALTERNATIVE 3
ELECTRICAL EQUIPMENT SHEET 1

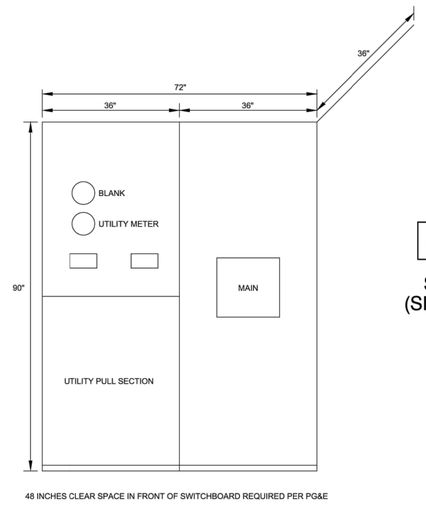
DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 13 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. E2





FRONT ELEVATION - OPTION "1" INDOOR MOTOR CONTROL CENTER LINE-UP

SCALE: NO SCALE



FRONT ELEVATION - INDOOR SERVICE-ENTRANCE SWITCHBOARD

SCALE: NO SCALE

ELECTRICAL CONFIGURATION OPTION "1"

SYSTEM SIZED FOR TWO (2) 125HP PUMPS
(SIMULTANEOUS OPERATION OF BOTH PUMPS)

NO:	DATE	BY	REVISIONS
			PRELIMINARY NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER TODD A. BEECHER E014712 Exp. 6/30/23 ELECTRICAL STATE OF CALIFORNIA

NMWD PROJECT NO.:	xxxxxxx
DESIGN BY:	TB
DRAWN BY:	BEI
CHECKED BY:	xxx
DRAWING DATE:	APRIL 2023

Beecher Engineering, Inc.

NORTH MARIN WATER DISTRICT
LYNWOOD PUMP STATION
PRE-DESIGN REPORT

NORTH MARIN WATER DISTRICT

ELECTRICAL

LYNWOOD PUMP STATION -
OPTION "1" SINGLE LINE DIAGRAM

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

PROJECT NO. xxxxxx
DRAWING NO. E011
SHEET NO. x OF xxx

NO.	DATE	REVISION	BY	APP.
	01/17/2024	CONCEPTUAL DESIGN		

NORTH MARIN WATER DISTRICT
NOVATO, CALIFORNIA

LYNWOOD PUMP STATION REPLACEMENT PROJECT

ALTERNATIVE 3
ELECTRICAL EQUIPMENT SHEET 2

DES	DR	CH	SCALE : AS NOTED
			DATE : 01/17/2024
APPROVED: CHIEF ENGINEER			SHEET NO. : 14 OF 19 SHEETS
R.E. C78430			SERVICE AREA / JOB.NO. / NO. E3

APPENDIX B. BUILDING DIMENSION EXHIBITS

NORTH

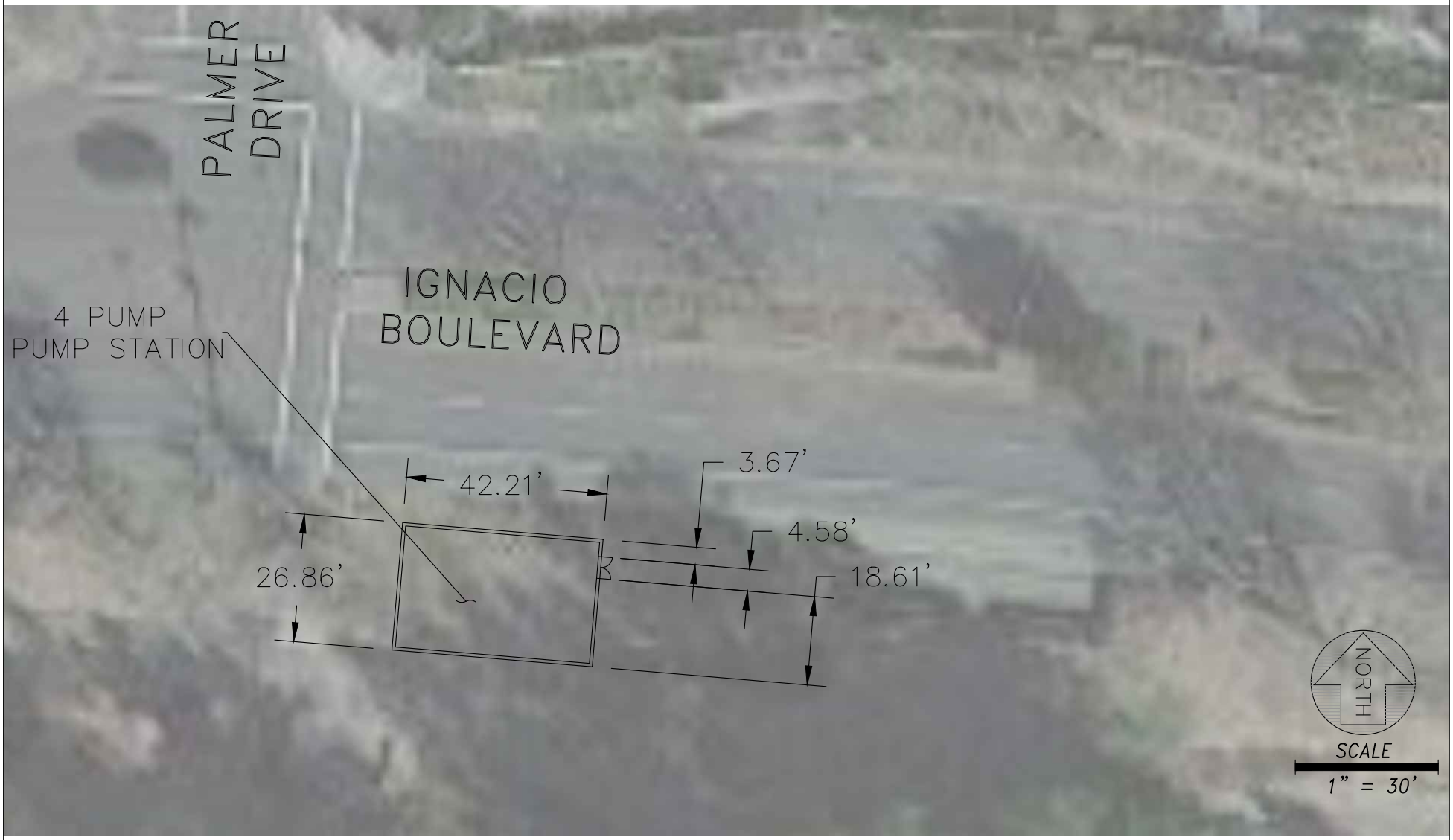
SCALE

1" = 40'

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

505 San Marin Dr Suite A220 • Novato, CA 94945
(415)534-7070 • www.freyerlaureta.com

ALTERNATIVE A LYNWOOD PUMP STATION LOCATION
SITE 1 BUILDING DIMENSION EXHIBIT
NORTH MARIN WATER DISTRICT
NOVATO, CA



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CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

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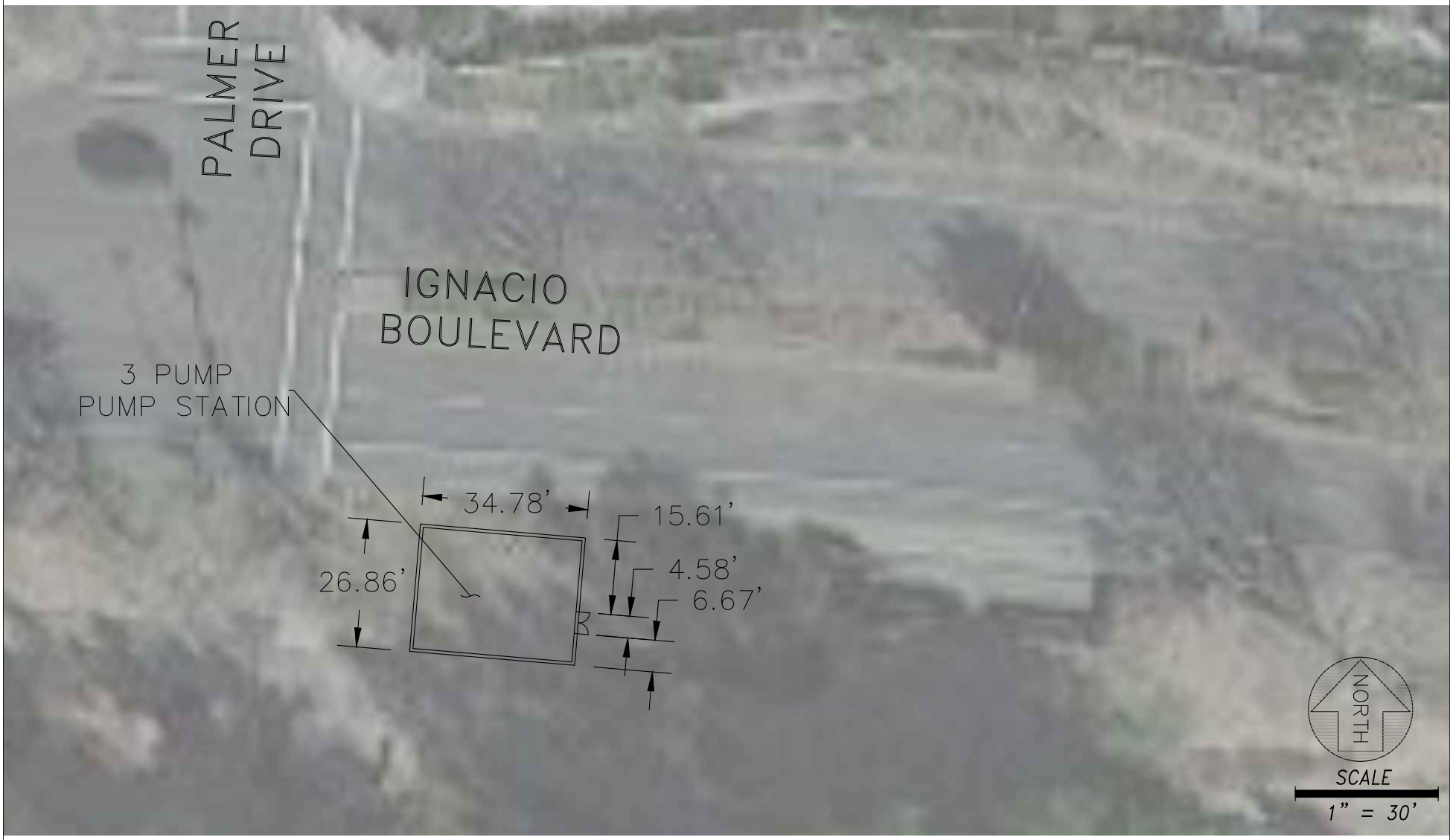
(415)534-7070 • www.freyerlaureta.com

ALTERNATIVE B LYNWOOD PUMP STATION LOCATION
SITE 2 BUILDING DIMENSION EXHIBIT
NORTH MARIN WATER DISTRICT
NOVATO, CA



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CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

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(415)534-7070 • www.freyerlaureta.com

ALTERNATIVE C, D AND E LYNWOOD PUMP STATION LOCATION
SITE 2 BUILDING DIMENSION EXHIBIT
NORTH MARIN WATER DISTRICT
NOVATO, CA

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

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ALTERNATIVE C LYNWOOD PUMP STATION LOCATION
SITE 3 BUILDING DIMENSION EXHIBIT
NORTH MARIN WATER DISTRICT
NOVATO, CA

NORTH

SCALE

1" = 30'

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

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(415)534-7070 • www.freyerlaureta.com

ALTERNATIVE D LYNWOOD PUMP STATION LOCATION
SITE 4 BUILDING DIMENSION EXHIBIT
NORTH MARIN WATER DISTRICT
NOVATO, CA

NORTH

SCALE

1" = 30'

FREYER & LAURETA, INC.
CIVIL ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

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ALTERNATIVE E LYNWOOD PUMP STATION LOCATION
SITE 5 BUILDING DIMENSION EXHIBIT
NORTH MARIN WATER DISTRICT
NOVATO, CA

APPENDIX C. AIR QUALITY DATA

Lynwood Alt A Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt A
Construction Start Date	1/2/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.6
Location	38.084624543920626, -122.56262647392842
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	2.00	1000sqft	0.05	2,000	0.00	—	—	New Pump Station

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.71	8.62	2.43	6.55	0.01	0.10	0.15	0.25	0.09	0.04	0.12	—	1,029	1,029	0.06	0.04	0.85	1,044
2026	0.29	0.25	1.61	3.65	0.01	0.06	0.12	0.18	0.05	0.03	0.08	—	589	589	0.02	0.01	0.35	593
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.67	8.60	2.11	5.57	0.01	0.09	0.14	0.23	0.08	0.03	0.11	—	806	806	0.04	0.03	0.02	816
2026	0.51	0.43	2.93	5.05	0.01	0.10	0.23	0.33	0.10	0.05	0.15	—	915	915	0.04	0.02	0.02	923
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.63	1.59	1.14	1.95	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	365	365	0.02	0.01	0.18	369
2026	0.09	0.08	0.52	0.89	< 0.005	0.02	0.04	0.06	0.02	0.01	0.03	—	162	162	0.01	< 0.005	0.06	164
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.30	0.29	0.21	0.36	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	60.3	60.3	< 0.005	< 0.005	0.03	61.1
2026	0.02	0.01	0.09	0.16	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.9	26.9	< 0.005	< 0.005	0.01	27.1

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.36	0.37	1.40	0.89	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	199	201	0.24	< 0.005	0.52	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.36	1.40	0.80	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	198	200	0.24	< 0.005	0.52	208
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.06	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.33	0.30	1.35	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	0.00	154	154	0.01	< 0.005	0.00	155
Total	0.34	0.36	1.37	0.83	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	195	197	0.24	< 0.005	0.52	205
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.43	6.43	< 0.005	< 0.005	—	6.46
Water	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Waste	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Stationary	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.07	0.25	0.15	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.37	32.3	32.6	0.04	< 0.005	0.09	33.9

3. Construction Emissions Details

3.1. Existing PS 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	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.28	0.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	86.8	86.8	< 0.005	< 0.005	—	87.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 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	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.4	14.4	< 0.005	< 0.005	—	14.4
Demolition	—	—	—	—	—	—	< 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	0.04	0.04	0.02	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.9	85.9	< 0.005	< 0.005	0.32	87.2
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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.03	16.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.1	80.1	< 0.005	< 0.005	0.01	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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	< 0.005	16.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.88
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.37	2.37	< 0.005	< 0.005	< 0.005	2.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.48

3.3. Pavement Removal (2025) - 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	0.02	0.02	0.09	1.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	246	246	0.01	< 0.005	—	247
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.80	4.80	< 0.005	< 0.005	—	4.81
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.7	22.7	< 0.005	< 0.005	< 0.005	23.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.82
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.47

3.5. New Pump Station Construction (2025) - 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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.89	0.74	< 0.005	0.03	—	0.03	0.03	—	0.03	—	144	144	0.01	< 0.005	—	144
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	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.8	23.8	< 0.005	< 0.005	—	23.9
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	0.04	0.04	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.41	103
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.47	6.47	< 0.005	< 0.005	0.02	6.77
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.7	32.7	< 0.005	0.01	0.07	34.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	94.4	94.4	< 0.005	< 0.005	0.01	95.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.47	6.47	< 0.005	< 0.005	< 0.005	6.76
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.7	32.7	< 0.005	0.01	< 0.005	34.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.7	67.7	< 0.005	< 0.005	0.13	68.7
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.62	4.62	< 0.005	< 0.005	0.01	4.83
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.02	11.4

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.80
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.87	3.87	< 0.005	< 0.005	< 0.005	4.07

3.7. New Pump Station 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	0.18	0.15	1.22	1.03	< 0.005	0.04	—	0.04	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.03	0.03	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.5	35.5	< 0.005	< 0.005	—	35.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.87	5.87	< 0.005	< 0.005	—	5.89
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.38	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	92.6	92.6	< 0.005	< 0.005	0.01	93.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.35	6.35	< 0.005	< 0.005	< 0.005	6.63
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.0	32.0	< 0.005	0.01	< 0.005	33.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.03	16.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.17
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.64	5.64	< 0.005	< 0.005	< 0.005	5.94
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.98

3.9. Paving (2025) - Unmitigated

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

Location	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	0.04	0.04	0.34	2.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	389	389	0.02	< 0.005	—	390
Paving	—	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	< 0.005	< 0.005	0.04	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.9	46.9	< 0.005	< 0.005	—	47.0
Paving	—	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	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.76	7.76	< 0.005	< 0.005	—	7.78
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.14	0.08	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	95.9	95.9	0.01	0.02	0.20	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	0.01	12.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.91	1.91	< 0.005	< 0.005	< 0.005	2.01

3.11. Trench Excavation and Pipe Construction (2025) - 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	8.40	8.38	0.50	2.66	< 0.005	0.04	—	0.04	0.03	—	0.03	—	127	127	0.01	< 0.005	—	127
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	8.40	8.38	0.50	2.66	< 0.005	0.04	—	0.04	0.03	—	0.03	—	127	127	0.01	< 0.005	—	127
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	1.45	1.45	0.09	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.9	21.9	< 0.005	< 0.005	—	21.9
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	0.26	0.26	0.02	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.62	3.62	< 0.005	< 0.005	—	3.63

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.7	75.7	0.01	0.01	0.15	79.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.14	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.8	75.8	0.01	0.01	< 0.005	79.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.01	13.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.28

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94
Total	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3

Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Total	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Total	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Total	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Existing PS Demolition	Demolition	3/1/2026	5/31/2026	5.00	65.0	Demo Existing PS
Pavement Removal	Site Preparation	1/1/2025	2/28/2025	5.00	43.0	Pavement Removal For new pipe
New Pump Station Construction	Building Construction	1/1/2025	3/31/2026	5.00	325	New PS Construction
Paving	Paving	4/1/2025	5/31/2025	5.00	44.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	4/30/2025	5.00	63.0	Excavation and Pipe Construction

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
Existing PS Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing PS Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing PS Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73

Existing PS Demolition	Excavators	Diesel	Tier 4 Final	1.00	4.90	130	0.38
Existing PS Demolition	Air Compressors	Diesel	Average	1.00	2.40	37.0	0.48
Existing PS Demolition	Plate Compactors	Diesel	Average	1.00	2.00	8.00	0.43
Existing PS Demolition	Forklifts	Diesel	Average	1.00	1.30	82.0	0.20
Existing PS Demolition	Generator Sets	Diesel	Average	1.00	5.00	14.0	0.74
Existing PS Demolition	Pumps	Diesel	Average	1.00	5.30	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	3.30	24.0	0.38
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	3.30	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.80	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.50	16.0	0.38
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.50	8.00	0.43
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	5.90	14.0	0.74
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38

Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	1.50	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	1.50	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	3.00	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	1.10	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.50	11.0	0.74
Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	4.70	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.30	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.30	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing PS Demolition	—	—	—	—
Existing PS Demolition	Worker	10.2	11.7	LDA,LDT1,LDT2
Existing PS Demolition	Vendor	—	0.00	HHDT,MHDT
Existing PS Demolition	Hauling	0.68	5.91	HHDT
Existing PS Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	—	8.40	HHDT,MHDT

Pavement Removal	Hauling	0.84	7.00	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	2.57	7.67	HHDT
Trench Excavation and Pipe Construction	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	11.7	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.23	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.46	19.2	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	1.00	26.0	HHDT
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 (Building Square Footage)	Acres Paved (acres)
Existing PS Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	700	1,500	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	56.8	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,000	1,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	20,737	204	0.0330	0.0040	85,088

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	462,500	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	2.48	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.

Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.
Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.

Lynwood Alt B Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt B
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	2.00	1000sqft	0.05	2,000	0.00	—	—	New Pump Station

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.00	8.21	2.51	6.98	0.01	0.09	0.22	0.31	0.08	0.06	0.14	—	1,500	1,500	0.08	0.07	1.35	1,520
2026	0.29	0.25	1.61	3.65	0.01	0.06	0.12	0.18	0.05	0.03	0.08	—	594	594	0.02	0.01	0.36	598
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.07	8.26	2.96	9.76	0.02	0.11	0.25	0.36	0.09	0.06	0.16	—	1,847	1,847	0.12	0.09	0.04	1,878
2026	0.52	0.44	2.95	5.14	0.01	0.10	0.25	0.36	0.10	0.06	0.15	—	946	946	0.04	0.02	0.02	954
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.59	1.60	1.45	3.51	0.01	0.05	0.12	0.17	0.04	0.03	0.07	—	722	722	0.04	0.03	0.29	732
2026	0.09	0.08	0.52	0.91	< 0.005	0.02	0.04	0.06	0.02	0.01	0.03	—	168	168	0.01	< 0.005	0.07	169
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.29	0.29	0.26	0.64	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	119	119	0.01	0.01	0.05	121
2026	0.02	0.01	0.10	0.17	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.8	27.8	< 0.005	< 0.005	0.01	28.0

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.36	0.37	1.40	0.89	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	199	201	0.24	< 0.005	0.52	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.36	1.40	0.80	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	198	200	0.24	< 0.005	0.52	208
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.06	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.33	0.30	1.35	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	0.00	154	154	0.01	< 0.005	0.00	155
Total	0.34	0.36	1.37	0.83	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	195	197	0.24	< 0.005	0.52	205
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.43	6.43	< 0.005	< 0.005	—	6.46
Water	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Waste	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Stationary	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.07	0.25	0.15	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.37	32.3	32.6	0.04	< 0.005	0.09	33.9

3. Construction Emissions Details

3.1. Existing Pump Station 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	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.28	0.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	86.8	86.8	< 0.005	< 0.005	—	87.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 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	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.4	14.4	< 0.005	< 0.005	—	14.4
Demolition	—	—	—	—	—	—	< 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	0.04	0.04	0.02	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.9	85.9	< 0.005	< 0.005	0.32	87.2
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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.04	22.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.1	80.1	< 0.005	< 0.005	0.01	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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	< 0.005	21.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.72	3.72	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.37	2.37	< 0.005	< 0.005	< 0.005	2.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65

3.3. Pavement Removal (2025) - 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	0.05	0.05	0.27	3.83	0.01	0.01	—	0.01	0.01	—	0.01	—	708	708	0.03	0.01	—	710
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.67	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	124	124	0.01	< 0.005	—	125
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.6
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	0.14	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	81.6	81.6	0.01	0.01	< 0.005	85.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.01	15.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.37	2.37	< 0.005	< 0.005	< 0.005	2.49

3.5. New Pump Station Construction (2025) - 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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.89	0.74	< 0.005	0.03	—	0.03	0.03	—	0.03	—	144	144	0.01	< 0.005	—	144
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	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.8	23.8	< 0.005	< 0.005	—	23.9
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	0.05	0.05	0.04	0.56	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	123	123	< 0.005	< 0.005	0.50	125
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	0.02	9.71
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.8	34.8	< 0.005	0.01	0.07	36.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.50	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	< 0.005	< 0.005	0.01	116
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	< 0.005	9.69
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.8	34.8	< 0.005	0.01	< 0.005	36.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.15	83.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.63	6.63	< 0.005	< 0.005	0.01	6.93
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.9	24.9	< 0.005	< 0.005	0.02	26.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.03	13.9

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.12	4.12	< 0.005	< 0.005	< 0.005	4.33

3.7. New Pump Station 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	0.18	0.15	1.22	1.03	< 0.005	0.04	—	0.04	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.03	0.03	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.5	35.5	< 0.005	< 0.005	—	35.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.87	5.87	< 0.005	< 0.005	—	5.89
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	113	113	< 0.005	< 0.005	0.01	114
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.12	9.12	< 0.005	< 0.005	< 0.005	9.52
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.1	34.1	< 0.005	0.01	< 0.005	35.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.03	20.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.68
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.00	6.00	< 0.005	< 0.005	0.01	6.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.30	3.30	< 0.005	< 0.005	0.01	3.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	1.05

3.9. Paving (2025) - Unmitigated

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

Location	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	0.09	0.09	0.79	5.17	0.01	0.02	—	0.02	0.02	—	0.02	—	907	907	0.04	0.01	—	910
Paving	—	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	0.14	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	162	162	0.01	< 0.005	—	162
Paving	—	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	0.03	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.7	26.7	< 0.005	< 0.005	—	26.8
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.03	0.01	0.32	0.19	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.03	0.04	0.48	236
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.0	40.0	0.01	0.01	0.04	42.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.62	6.62	< 0.005	< 0.005	0.01	6.96

3.11. Trench Excavation and Pipe Construction (2025) - 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	7.69	7.67	0.56	3.92	< 0.005	0.04	—	0.04	0.03	—	0.03	—	328	328	0.01	< 0.005	—	329
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	7.69	7.67	0.56	3.92	< 0.005	0.04	—	0.04	0.03	—	0.03	—	328	328	0.01	< 0.005	—	329
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1.37	1.37	0.10	0.70	< 0.005	0.01	—	0.01	0.01	—	0.01	—	58.4	58.4	< 0.005	< 0.005	—	58.6

Architect Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.25	0.25	0.02	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.67	9.67	< 0.005	< 0.005	—	9.70
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.01	0.61	0.36	< 0.005	0.01	0.09	0.10	< 0.005	0.02	0.03	—	369	369	0.05	0.06	0.76	389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.01	0.64	0.37	< 0.005	0.01	0.09	0.10	< 0.005	0.02	0.03	—	369	369	0.05	0.06	0.02	388
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.11	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	65.7	65.7	0.01	0.01	0.06	69.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.01	11.4

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94
Total	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Total	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Total	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Total	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Existing Pump Station Demolition	Demolition	3/1/2026	5/31/2026	5.00	65.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	3/31/2025	5.00	64.0	Pavement Removal for New Pipe

New Pump Station Construction	Building Construction	1/1/2025	3/31/2026	5.00	325	New PS Construction
Paving	Paving	6/1/2025	8/31/2025	5.00	65.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	3/1/2025	5/31/2025	5.00	65.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	4.90	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.40	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	2.00	8.00	0.43
Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	1.30	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	5.00	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.30	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.50	24.0	0.38

Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.50	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.80	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.50	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	5.90	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.50	8.00	0.43
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	3.50	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	3.50	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	3.50	185	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	3.50	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	4.70	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.00	11.0	0.74

Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	2.10	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.10	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.10	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	10.2	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT
Existing Pump Station Demolition	Hauling	0.68	8.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.38	9.00	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	14.3	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.33	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.47	20.0	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2

Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.34	26.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	10.5	9.22	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)

Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	2,800	4,000	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	25.4	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,000	1,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	20,737	204	0.0330	0.0040	85,088

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	462,500	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	2.48	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.
Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.

Lynwood Alt C Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt C
Construction Start Date	1/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	3.40	1000sqft	0.08	3,400	0.00	—	—	New Pump Stations

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	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.	15.9	15.9	4.81	18.7	0.03	0.16	0.36	0.52	0.14	0.09	0.23	—	3,470	3,470	0.23	0.17	2.41	3,529
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.8	15.8	3.65	12.9	0.02	0.14	0.29	0.43	0.12	0.07	0.20	—	2,225	2,225	0.15	0.12	0.05	2,266
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.84	3.83	1.94	5.77	0.01	0.07	0.15	0.21	0.06	0.04	0.09	—	1,119	1,119	0.07	0.05	0.38	1,136
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.70	0.70	0.35	1.05	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	185	185	0.01	0.01	0.06	188

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	15.9	15.9	4.81	18.7	0.03	0.16	0.36	0.52	0.14	0.09	0.23	—	3,470	3,470	0.23	0.17	2.41	3,529
2026	0.25	0.21	1.42	1.64	< 0.005	0.05	0.12	0.17	0.05	0.03	0.07	—	373	373	0.02	0.01	0.52	378
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	15.8	15.8	3.65	12.9	0.02	0.14	0.29	0.43	0.12	0.07	0.20	—	2,225	2,225	0.15	0.12	0.05	2,266
2026	0.49	0.40	2.90	5.06	0.01	0.10	0.16	0.27	0.10	0.04	0.13	—	902	902	0.04	0.02	0.01	909
2027	0.48	0.40	2.86	5.02	0.01	0.10	0.16	0.26	0.09	0.04	0.13	—	899	899	0.04	0.02	0.01	906
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.84	3.83	1.94	5.77	0.01	0.07	0.15	0.21	0.06	0.04	0.09	—	1,119	1,119	0.07	0.05	0.38	1,136
2026	0.19	0.16	1.11	1.33	< 0.005	0.04	0.09	0.13	0.04	0.02	0.06	—	294	294	0.01	0.01	0.16	297
2027	0.07	0.06	0.42	0.67	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	126	126	0.01	< 0.005	0.04	127
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.70	0.70	0.35	1.05	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	185	185	0.01	0.01	0.06	188
2026	0.04	0.03	0.20	0.24	< 0.005	0.01	0.02	0.02	0.01	< 0.005	0.01	—	48.7	48.7	< 0.005	< 0.005	0.03	49.2
2027	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.01	21.0

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	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.	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.66	0.60	2.70	1.54	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	308	308	0.01	< 0.005	0.00	309
Total	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Stationary	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

3. Construction Emissions Details

3.1. Existing Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.42	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.15	5.15	< 0.005	< 0.005	—	5.17
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	< 0.005	24.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Existing Pump Station Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.41	3.44	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	< 0.005	24.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

3.5. Pavement Removal (2025) - 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	0.06	0.06	0.29	4.11	0.01	0.01	—	0.01	0.01	—	0.01	—	760	760	0.03	0.01	—	763
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.29	4.11	0.01	0.01	—	0.01	0.01	—	0.01	—	760	760	0.03	0.01	—	763

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.09	1.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	225	225	0.01	< 0.005	—	226
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.2	37.2	< 0.005	< 0.005	—	37.4
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	< 0.005	0.16	0.09	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	97.1	97.1	0.01	0.02	0.20	102
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	< 0.005	0.17	0.09	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	97.1	97.1	0.01	0.02	0.01	102
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.76	4.76	< 0.005	< 0.005	< 0.005	5.00

3.7. New Pump Station Construction (2025) - 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	0.20	0.17	1.36	1.12	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.36	1.12	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.97	0.80	< 0.005	0.04	—	0.04	0.03	—	0.03	—	155	155	0.01	< 0.005	—	155
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25.6	25.6	< 0.005	< 0.005	—	25.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.53	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	117	117	< 0.005	< 0.005	0.47	119
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	0.02	9.71
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.6	33.6	< 0.005	0.01	0.07	35.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.48	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	109	109	< 0.005	< 0.005	0.01	110
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	< 0.005	9.69
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.6	33.6	< 0.005	0.01	< 0.005	35.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.1	78.1	< 0.005	< 0.005	0.15	79.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.63	6.63	< 0.005	< 0.005	0.01	6.93
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.0	24.0	< 0.005	< 0.005	0.02	25.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.97	3.97	< 0.005	< 0.005	< 0.005	4.18

3.9. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.34	1.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.34	1.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	0.95	0.79	< 0.005	0.04	—	0.04	0.03	—	0.03	—	155	155	0.01	< 0.005	—	155
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	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25.6	25.6	< 0.005	< 0.005	—	25.7

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.49	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	< 0.005	< 0.005	0.43	116
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.11	9.11	< 0.005	< 0.005	0.02	9.54
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.9	32.9	< 0.005	0.01	0.07	34.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.44	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	107	107	< 0.005	< 0.005	0.01	108
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.12	9.12	< 0.005	< 0.005	< 0.005	9.52
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.9	32.9	< 0.005	0.01	< 0.005	34.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	76.6	76.6	< 0.005	< 0.005	0.13	77.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.51	6.51	< 0.005	< 0.005	0.01	6.80
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.5	23.5	< 0.005	< 0.005	0.02	24.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.13
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.89	3.89	< 0.005	< 0.005	< 0.005	4.10

3.11. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.32	1.11	< 0.005	0.05	—	0.05	0.04	—	0.04	—	217	217	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.2	38.2	< 0.005	< 0.005	—	38.3
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	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.32	6.32	< 0.005	< 0.005	—	6.34
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	0.04	0.04	0.03	0.41	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	105	105	< 0.005	< 0.005	0.01	106
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.92	8.92	< 0.005	< 0.005	< 0.005	9.32
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	< 0.005	33.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.03	18.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.64
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.66	5.66	< 0.005	< 0.005	< 0.005	5.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.07	3.07	< 0.005	< 0.005	< 0.005	3.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.99

3.13. Paving (2025) - 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	0.10	0.10	0.86	5.62	0.01	0.02	—	0.02	0.02	—	0.02	—	985	985	0.04	0.01	—	988
Paving	—	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	0.26	1.68	< 0.005	0.01	—	0.01	0.01	—	0.01	—	294	294	0.01	< 0.005	—	295
Paving	—	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	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	48.7	48.7	< 0.005	< 0.005	—	48.9
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.01	0.36	0.21	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	252	252	0.03	0.04	0.53	265
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.11	0.06	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.2	75.2	0.01	0.01	0.07	79.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.01	13.1

3.15. Trench Excavation and Pipe Construction (2025) - 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	15.3	15.3	0.81	6.51	< 0.005	0.07	—	0.07	0.06	—	0.06	—	460	460	0.02	< 0.005	—	461
Architectural Coatings	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	15.3	15.3	0.81	6.51	< 0.005	0.07	—	0.07	0.06	—	0.06	—	460	460	0.02	< 0.005	—	461
Architectural Coatings	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	3.57	3.56	0.19	1.52	< 0.005	0.02	—	0.02	0.01	—	0.01	—	107	107	< 0.005	< 0.005	—	107
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.65	0.65	0.03	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.7	17.7	< 0.005	< 0.005	—	17.8
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.09	0.02	0.88	0.52	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	540	540	0.07	0.09	1.11	568
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.09	0.02	0.93	0.53	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	540	540	0.07	0.09	0.03	567
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	< 0.005	0.21	0.12	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	126	126	0.02	0.02	0.11	132
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.02	21.9

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5

Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Total	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Existing Pump Station Demolition	Demolition	12/1/2026	2/28/2027	5.00	64.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	5/31/2025	5.00	108	Pavement Removal for New Pipe
New Pump Station Construction	Building Construction	1/1/2025	3/31/2027	5.00	586	New PS Construction
Paving	Paving	5/1/2025	9/30/2025	5.00	109	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	5/31/2025	5.00	85.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40

Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	5.80	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.20	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	0.60	8.00	0.43
Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	0.70	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	4.80	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.10	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	10.2	24.0	0.38
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	10.2	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.90	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.70	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	6.50	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.70	8.00	0.43

New Pump Station Construction	Pumps	Diesel	Average	1.00	2.30	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	3.80	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	3.80	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.60	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	6.50	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	7.10	11.0	0.74
Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	4.20	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	4.20	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	4.20	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	0.00	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT

Existing Pump Station Demolition	Hauling	0.69	9.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.56	10.0	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	13.5	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.33	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.42	21.6	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.53	27.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	14.5	9.78	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)
Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	5,100	7,100	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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

2025	50.7	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,100	1,700	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	35,252	204	0.0330	0.0040	144,649

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	786,250	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	4.22	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.
Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.
Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.
Operations: Emergency Generators and Fire Pumps	Assumed one generator at each site.

Lynwood Alt D Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt D
Construction Start Date	1/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	3.40	1000sqft	0.08	3,400	0.00	—	—	New Pump Stations

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.8	10.9	4.50	16.3	0.03	0.14	0.32	0.47	0.13	0.08	0.21	—	3,175	3,175	0.21	0.16	2.20	3,228
2026	0.26	0.22	1.45	1.63	< 0.005	0.05	0.11	0.17	0.05	0.03	0.07	—	367	367	0.02	0.01	0.48	371
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.6	10.8	3.26	10.1	0.02	0.12	0.25	0.37	0.10	0.06	0.17	—	1,858	1,858	0.13	0.10	0.04	1,892
2026	0.49	0.41	2.93	5.05	0.01	0.11	0.15	0.26	0.10	0.03	0.13	—	896	896	0.04	0.02	0.01	903
2027	0.48	0.40	2.89	5.02	0.01	0.10	0.15	0.25	0.09	0.03	0.13	—	893	893	0.04	0.02	0.01	899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.01	2.01	1.62	3.92	0.01	0.05	0.12	0.17	0.05	0.03	0.08	—	793	793	0.05	0.03	0.29	804
2026	0.20	0.16	1.13	1.33	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	290	290	0.01	0.01	0.15	293
2027	0.07	0.06	0.42	0.67	< 0.005	0.01	0.02	0.04	0.01	0.01	0.02	—	125	125	0.01	< 0.005	0.04	126
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.37	0.37	0.30	0.71	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	131	131	0.01	0.01	0.05	133
2026	0.04	0.03	0.21	0.24	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	47.9	47.9	< 0.005	< 0.005	0.02	48.5

2027	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	20.7	20.7	< 0.005	< 0.005	0.01	20.8

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.66	0.60	2.70	1.54	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	308	308	0.01	< 0.005	0.00	309
Total	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Stationary	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

3. Construction Emissions Details

3.1. Existing Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.42	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.15	5.15	< 0.005	< 0.005	—	5.17
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	< 0.005	24.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Existing Pump Station Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.41	3.44	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	< 0.005	24.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

3.5. Pavement Removal (2025) - 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	0.04	0.04	0.23	3.22	0.01	0.01	—	0.01	0.01	—	0.01	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.23	3.22	0.01	0.01	—	0.01	0.01	—	0.01	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	140	140	0.01	< 0.005	—	141

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.3	23.3	< 0.005	< 0.005	—	23.3
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.12	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.8	75.8	0.01	0.01	0.16	79.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.9	75.9	0.01	0.01	< 0.005	79.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.02	18.8

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.11

3.7. New Pump Station Construction (2025) - 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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	1.00	0.82	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3

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	0.05	0.05	0.03	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	109	109	< 0.005	< 0.005	0.44	111
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	0.02	7.95
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	0.06	32.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	< 0.005	7.93
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	< 0.005	32.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.1	73.1	< 0.005	< 0.005	0.14	74.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.43	5.43	< 0.005	< 0.005	0.01	5.67
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.02	23.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.94
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	< 0.005	3.81

3.9. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	0.98	0.81	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3
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	0.04	0.04	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	107	107	< 0.005	< 0.005	0.40	109
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	0.02	7.80
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	0.06	31.6

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	100.0	100.0	< 0.005	< 0.005	0.01	101
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	< 0.005	7.79
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	< 0.005	31.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.7	71.7	< 0.005	< 0.005	0.12	72.8
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.33	5.33	< 0.005	< 0.005	0.01	5.57
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.92
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.73

3.11. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.36	1.13	< 0.005	0.05	—	0.05	0.04	—	0.04	—	222	222	0.01	< 0.005	—	223
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	0.03	0.24	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
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	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.47	6.47	< 0.005	< 0.005	—	6.49
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	0.04	0.04	0.03	0.39	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.2	98.2	< 0.005	< 0.005	0.01	99.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	< 0.005	7.63
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.3	29.3	< 0.005	< 0.005	< 0.005	30.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.4	17.4	< 0.005	< 0.005	0.03	17.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.34
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.87	2.87	< 0.005	< 0.005	< 0.005	2.92
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.90

3.13. Paving (2025) - 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	0.10	0.10	0.91	5.91	0.01	0.02	—	0.02	0.02	—	0.02	—	1,037	1,037	0.04	0.01	—	1,040
Paving	—	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	0.16	1.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	185	185	0.01	< 0.005	—	185
Paving	—	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	0.03	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.6	30.6	< 0.005	< 0.005	—	30.7
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.01	0.39	0.22	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	273	273	0.03	0.04	0.58	288
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.7	48.7	0.01	0.01	0.04	51.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.06	8.06	< 0.005	< 0.005	0.01	8.48

3.15. Trench Excavation and Pipe Construction (2025) - 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	10.2	10.2	0.64	4.77	< 0.005	0.05	—	0.05	0.04	—	0.04	—	371	371	0.02	< 0.005	—	372
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	10.2	10.2	0.64	4.77	< 0.005	0.05	—	0.05	0.04	—	0.04	—	371	371	0.02	< 0.005	—	372
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1.77	1.76	0.11	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.0	64.0	< 0.005	< 0.005	—	64.2
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.32	0.32	0.02	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	0.74	0.44	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	453	453	0.06	0.07	0.93	476

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.78	0.44	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	453	453	0.06	0.07	0.02	476
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.1	78.1	0.01	0.01	0.07	82.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.01	13.6

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9

Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Total	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency Generato	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Existing Pump Station Demolition	Demolition	12/1/2026	2/28/2027	5.00	64.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	4/30/2025	5.00	86.0	Pavement Removal for New Pipe
New Pump Station Construction	Building Construction	1/1/2025	3/31/2027	5.00	586	New PS Construction
Paving	Paving	4/1/2025	6/30/2025	5.00	65.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	4/30/2025	5.00	63.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	5.80	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.20	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	0.60	8.00	0.43

Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	0.70	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	4.80	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.10	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	8.00	24.0	0.38
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	8.00	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.90	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.70	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	6.90	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.70	8.00	0.43
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.30	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37

Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	4.00	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	4.00	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	5.30	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.60	11.0	0.74
Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	2.80	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.80	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.80	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	0.00	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT
Existing Pump Station Demolition	Hauling	0.69	9.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.00	10.0	HHDT
Pavement Removal	Onsite truck	—	—	HHDT

New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	12.7	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.27	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.40	20.7	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.65	28.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	12.2	9.78	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)
Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	3,200	4,600	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	33.8	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,100	1,700	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	35,252	204	0.0330	0.0040	144,649

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	786,250	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	4.22	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.

Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.
Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.
Operations: Emergency Generators and Fire Pumps	Assumed one generator at each site

Lynwood Alt E Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt E
Construction Start Date	1/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	3.40	1000sqft	0.08	3,400	0.00	—	—	New Pump Stations

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.7	10.9	3.97	12.3	0.02	0.13	0.28	0.41	0.11	0.07	0.19	—	2,326	2,326	0.16	0.13	1.92	2,370
2026	0.26	0.22	1.45	1.63	< 0.005	0.05	0.11	0.17	0.05	0.03	0.07	—	366	366	0.02	0.01	0.48	370
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.6	10.8	3.25	10.7	0.02	0.12	0.25	0.37	0.11	0.06	0.17	—	1,944	1,944	0.13	0.10	0.04	1,978
2026	0.49	0.41	2.93	5.05	0.01	0.11	0.15	0.26	0.10	0.03	0.13	—	895	895	0.04	0.02	0.01	902
2027	0.48	0.40	2.89	5.01	0.01	0.10	0.15	0.25	0.09	0.03	0.13	—	892	892	0.04	0.02	0.01	899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.00	2.00	1.58	3.71	0.01	0.05	0.11	0.17	0.05	0.03	0.08	—	744	744	0.04	0.03	0.28	755
2026	0.20	0.16	1.13	1.33	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	289	289	0.01	0.01	0.15	292
2027	0.07	0.06	0.42	0.67	< 0.005	0.01	0.02	0.04	0.01	0.01	0.02	—	125	125	0.01	< 0.005	0.04	126
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.36	0.37	0.29	0.68	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	123	123	0.01	0.01	0.05	125
2026	0.04	0.03	0.21	0.24	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	47.9	47.9	< 0.005	< 0.005	0.02	48.4

2027	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	20.6	20.6	< 0.005	< 0.005	0.01	20.8

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.66	0.60	2.70	1.54	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	308	308	0.01	< 0.005	0.00	309
Total	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Stationary	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

3. Construction Emissions Details

3.1. Existing Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.42	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.15	5.15	< 0.005	< 0.005	—	5.17
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	< 0.005	24.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Existing Pump Station Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.41	3.44	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	< 0.005	24.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

3.5. Pavement Removal (2025) - 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	0.05	0.05	0.28	3.95	0.01	0.01	—	0.01	0.01	—	0.01	—	730	730	0.03	0.01	—	733
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.69	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	128	128	0.01	< 0.005	—	128
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.2	21.2	< 0.005	< 0.005	—	21.3
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.9	75.9	0.01	0.01	< 0.005	79.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.01	14.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.32

3.7. New Pump Station Construction (2025) - 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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	1.00	0.82	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3
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	0.05	0.05	0.03	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	109	109	< 0.005	< 0.005	0.44	110
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	0.02	7.95
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	0.06	32.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	< 0.005	7.93
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	< 0.005	32.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.6	72.6	< 0.005	< 0.005	0.14	73.7
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.43	5.43	< 0.005	< 0.005	0.01	5.67
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.02	23.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.02	12.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.94
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	< 0.005	3.81

3.9. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	0.98	0.81	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3
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	0.04	0.04	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	107	107	< 0.005	< 0.005	0.40	108
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	0.02	7.80
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	0.06	31.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.3	99.3	< 0.005	< 0.005	0.01	101
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	< 0.005	7.79
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	< 0.005	31.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.3	71.3	< 0.005	< 0.005	0.12	72.4
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.33	5.33	< 0.005	< 0.005	0.01	5.57

Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.92
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.73

3.11. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.36	1.13	< 0.005	0.05	—	0.05	0.04	—	0.04	—	222	222	0.01	< 0.005	—	223
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	0.03	0.24	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
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	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.47	6.47	< 0.005	< 0.005	—	6.49
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	0.04	0.04	0.03	0.38	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.5	97.5	< 0.005	< 0.005	0.01	98.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	< 0.005	7.63
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.3	29.3	< 0.005	< 0.005	< 0.005	30.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.03	17.5
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.34
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.86	2.86	< 0.005	< 0.005	< 0.005	2.90
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.90

3.13. Paving (2025) - 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	0.09	0.09	0.82	5.32	0.01	0.02	—	0.02	0.02	—	0.02	—	933	933	0.04	0.01	—	936
Paving	—	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	0.15	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	166	166	0.01	< 0.005	—	167
Paving	—	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	0.03	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.5	27.5	< 0.005	< 0.005	—	27.6
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.01	0.35	0.20	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	248	248	0.03	0.04	0.53	261
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.1	44.1	0.01	0.01	0.04	46.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	0.01	7.68

3.15. Trench Excavation and Pipe Construction (2025) - 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	10.2	10.2	0.63	4.65	< 0.005	0.05	—	0.05	0.04	—	0.04	—	354	354	0.01	< 0.005	—	355
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	10.2	10.2	0.63	4.65	< 0.005	0.05	—	0.05	0.04	—	0.04	—	354	354	0.01	< 0.005	—	355
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1.77	1.76	0.11	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	61.0	61.0	< 0.005	< 0.005	—	61.2
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.32	0.32	0.02	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.1	10.1	< 0.005	< 0.005	—	10.1
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	0.01	0.69	0.41	< 0.005	0.01	0.11	0.11	< 0.005	0.03	0.03	—	423	423	0.06	0.07	0.87	446
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	0.01	0.73	0.42	< 0.005	0.01	0.11	0.11	0.01	0.03	0.03	—	423	423	0.06	0.07	0.02	445
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.12	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	73.1	73.1	0.01	0.01	0.06	76.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.01	12.7

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Total	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Existing Pump Station Demolition	Demolition	12/1/2026	2/28/2027	5.00	64.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	3/31/2025	5.00	64.0	Pavement Removal for New Pipe

New Pump Station Construction	Building Construction	1/1/2025	3/31/2027	5.00	586	New PS Construction
Paving	Paving	4/1/2025	6/30/2025	5.00	65.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	4/30/2025	5.00	63.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	5.80	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.20	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	0.60	8.00	0.43
Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	0.70	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	4.80	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.10	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.80	24.0	0.38

Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.80	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.90	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.70	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	6.90	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.70	8.00	0.43
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.30	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	3.60	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	3.60	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.20	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	5.00	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.60	11.0	0.74

Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	2.80	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.80	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.80	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	0.00	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT
Existing Pump Station Demolition	Hauling	0.69	9.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.00	10.0	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	12.6	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.27	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.40	20.7	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2

Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.40	28.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	11.4	9.78	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)

Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	2,900	4,300	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	33.8	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,100	1,700	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	35,252	204	0.0330	0.0040	144,649

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	786,250	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	4.22	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.
Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.
Operations: Emergency Generators and Fire Pumps	Assume one generator at each site.

Alt A_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026					Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Existing Pump Station Removal																							
Excavators	Excavators	Diesel	130	Tier 4															96	176	44	65	4.9
Air Compressors	Air Compressors	Diesel	37	Average															88	44	22		2.4
Plate Compactors	Plate Compactors	Diesel	8	Average															42	44	44		2.0
Forklifts	Forklifts	Diesel	82	Average															42	44			1.3
Generator Sets	Generator Sets	Diesel	14	Average															126	132	66		5.0
Pumps	Pumps	Diesel	11	Average															168	176			5.3
Pavement Removal For new pipe																							
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	128																43	3.3
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	128																	3.3
Trench Excavation and Pipe Construction																							
Bigger Excavator	Excavators	Diesel	130	Tier 4		21	40	11														63	1.1
Pumps for Dewatering	Pumps	Diesel	11	Average		48	168	128															5.5
Welding Machine	Welders	Electric	36	N/A			168	128															4.7
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			84	64															2.3
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			84	64															2.3
Asphalt Pavement of Road																							
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4				42	24													44	1.5
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4				42	24														1.5
Asphalt Paver	Pavers	Diesel	148	Tier 4				42	24														1.5
Tandem Roller	Rollers	Diesel	48	Tier 4				42	24														1.5
New Pump Station Construction																							
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21										325	0.8
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132															1.5
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132															1.5
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2				1.0
Aerial Lifts	Aerial Lifts	Diesel	46	Average						40	44	42	42	44	36	44	20	19	2				1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	120	114	12				5.9
Pumps	Pumps	Diesel	11	Average	168	152	168	176															2.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					72														0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt B_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026					Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Existing Pump Station Removal																							
Excavators	Excavators	Diesel	130	Tier 4															96	176	44	65	4.9
Air Compressors	Air Compressors	Diesel	37	Average															88	44	22		2.4
Plate Compactors	Plate Compactors	Diesel	8	Average															42	44	44		2.0
Forklifts	Forklifts	Diesel	82	Average															42	44			1.3
Generator Sets	Generator Sets	Diesel	14	Average															126	132	66		5.0
Pumps	Pumps	Diesel	11	Average															168	176			5.3
Pavement Removal For new pipe																							
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	288															64	9.5
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	288																9.5
Trench Excavation and Pipe Construction																							
Bigger Excavator	Excavators	Diesel	130	Tier 4			52	163	89													65	4.7
Pumps for Dewatering	Pumps	Diesel	11	Average			56	176	96														5.0
Welding Machine	Welders	Electric	36	N/A				88	48														2.1
Trench Compactor	Plate Compactors	Diesel	3	Tier 4				88	48														2.1
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average				88	48														2.1
Asphalt Pavement of Road																							
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4						12	132	84										65	3.5
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4						12	132	84											3.5
Asphalt Paver	Pavers	Diesel	148	Tier 4						12	132	84											3.5
Tandem Roller	Rollers	Diesel	48	Tier 4						12	132	84											3.5
New Pump Station Construction																							
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21										325	0.8
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132															1.5
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2				1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	120	114	12				5.9
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132															1.5
Pumps	Pumps	Diesel	11	Average	168	152	168	176															2.0
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2				1.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					56														0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt C_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026												2027			Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
Existing Pump Station Removal																																	
Excavators	Excavators	Diesel	130	Tier 4																							176	152	40		64	5.8
Air Compressors	Air Compressors	Diesel	37	Average																							88	38	20			2.3
Plate Compactors	Plate Compactors	Diesel	8	Average																									40			0.6
Forklifts	Forklifts	Diesel	82	Average																							44					0.7
Generator Sets	Generator Sets	Diesel	14	Average																							132	114	60			4.8
Pumps	Pumps	Diesel	11	Average																							176	152				5.1
Pavement Removal For new pipe																																	
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	336	352	96																						108	10.2
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	336	352	96																							10.2
Trench Excavation and Pipe Construction																																	
Bigger Excavator	Excavators	Diesel	130	Tier 4		120	168	176	88																						85	6.5
Pumps for Dewatering	Pumps	Diesel	11	Average		120	168	176	136																							7.1
Welding Machine	Welders	Electric	36	N/A			126	132	102																							4.2
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			126	132	102																							4.2
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			126	132	102																							4.2
Asphalt Pavement of Road																																	
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4					30	120	132	126	6																		109	3.8
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4					30	120	132	126	6																			3.8
Asphalt Paver	Pavers	Diesel	148	Tier 4					30	120	132	126	6																			3.8
Tandem Roller	Rollers	Diesel	48	Tier 4					30	120	132	126	6																			3.8
New Pump Station Construction																																	
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21					40	38	44	44	20	21	22	21								0.9
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132									120	114	132	132												1.7
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	280	266	28	176	120	126	132	126	126	126	114	132	114	114	138		6.5
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132									120	114	132	132												586	1.7
Pumps	Pumps	Diesel	11	Average	168	152	168	176									160	152	176	176													2.3
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					48												40												0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt D_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026												2027			Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
Existing Pump Station Removal																																	
Excavators	Excavators	Diesel	130	Tier 4																							176	152	40		64	5.8
Air Compressors	Air Compressors	Diesel	37	Average																							88	38	20			2.3
Plate Compactors	Plate Compactors	Diesel	8	Average																									40			0.6
Forklifts	Forklifts	Diesel	82	Average																							44					0.7
Generator Sets	Generator Sets	Diesel	14	Average																							132	114	60			4.8
Pumps	Pumps	Diesel	11	Average																							176	152				5.1
Pavement Removal For new pipe																																	
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	336	32																							86	8.0
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	336	32																								8.0
Trench Excavation and Pipe Construction																																	
Bigger Excavator	Excavators	Diesel	130	Tier 4		120	168	48																							63	5.3
Pumps for Dewatering	Pumps	Diesel	11	Average		120	168	64																								5.6
Welding Machine	Welders	Electric	36	N/A			126	48																								2.8
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			126	48																								2.8
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			126	48																								2.8
Asphalt Pavement of Road																																	
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	54																					65	4.0
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	54																						4.0
Asphalt Paver	Pavers	Diesel	148	Tier 4				78	126	54																						4.0
Tandem Roller	Rollers	Diesel	48	Tier 4				78	126	54																						4.0
New Pump Station Construction																																	
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21					40	38	44	44	20	21	22	21								0.9	
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132									120	114	132	132												1.7	
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23	1.0	
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	280	266	308	176	120	126	132	126	126	126	114	132	114	114	138	6.9	
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132									120	114	132	132												1.7	
Pumps	Pumps	Diesel	11	Average	168	152	168	176									160	152	176	176												2.3	
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23	1.0	
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					48												40											0.2	

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt E_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026												2027			Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
Existing Pump Station Removal																																	
Excavators	Excavators	Diesel	130	Tier 4																							176	152	40		64	5.8
Air Compressors	Air Compressors	Diesel	37	Average																							88	38	20			2.3
Plate Compactors	Plate Compactors	Diesel	8	Average																									40			0.6
Forklifts	Forklifts	Diesel	82	Average																							44					0.7
Generator Sets	Generator Sets	Diesel	14	Average																							132	114	60			4.8
Pumps	Pumps	Diesel	11	Average																							176	152				5.1
Pavement Removal For new pipe																																	
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	304																									64	9.8
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	304																										9.8
Trench Excavation and Pipe Construction																																	
Bigger Excavator	Excavators	Diesel	130	Tier 4		120	168	24																									5.0
Pumps for Dewatering	Pumps	Diesel	11	Average		120	168	64																									5.6
Welding Machine	Welders	Electric	36	N/A			126	48																								63	2.8
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			126	48																									2.8
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			126	48																									2.8
Asphalt Pavement of Road																																	
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	30																							3.6
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	30																						65	3.6
Asphalt Paver	Pavers	Diesel	148	Tier 4				78	126	30																							3.6
Tandem Roller	Rollers	Diesel	48	Tier 4				78	126	30																							3.6
New Pump Station Construction																																	
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21					40	38	44	44	20	21	22	21									0.9
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132									120	114	132	132													1.7
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	280	266	308	176	120	126	132	126	126	126	114	132	114	114	138	586	6.9
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132									120	114	132	132													1.7
Pumps	Pumps	Diesel	11	Average	168	152	168	176									160	152	176	176													2.3
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					48												40												0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt A_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026					Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May						
Existing Pump Station Removal																													
Worker Commute Trips - demo	23.4		100%																		132	132	66	65	10.15	118.80	Worker Commute	10.15	11.70
Soil Import Truck Trips for Existing Pump Station	6	Marin/Sonoma 8120 Binford Rd				100%																6			0.18	0.55	Hauling	0.68	5.91
Demolition Haul Trips Soil from Excavation of Ex. Pump Station	14	Redwood Landfill				100%															16				0.49	3.45			
Pavement Removal For new pipe																													
Pavement Removal	14	Redwood Landfill				100%	2	16																43	0.84	5.86	Hauling	0.84	7.00
Trench Excavation and Pipe Construction																													
Demolition Haul Trips Soil from Trench	14	Redwood Landfill				100%		5	13	9														63	0.86	6.00	Hauling	2.57	7.67
Demolition Haul Trips Agreggate Base	14	Redwood Landfill				100%		3	9	6															0.57	4.00			
Soil Import Truck Trips for pit zone	6	Marin/Sonoma 8120 Binford Rd				100%		3	9	6															0.57	1.71			
Agregate Base Trucks Trips - Import	28	Dutra Materials				100%		3	9	6															0.57	8.00			
Asphalt Pavement of Road																													
Asphalt Trucks Trips - Import	52	Vulcan Materials Company 885 Lake Herman Rd				100%				14	8													44	1.00	26.00	Hauling	1.00	26.00
New Pump Station Construction																													
Worker Commute Trips - other	23.4		100%				50	190	210	222	126	120	132	126	126	132	108	132	120	114				325	11.74	137.38	Worker Commute	11.74	11.70
Vendor Trips	16.8				50%	50%			3	3	3	9	9	7	3										0.23	1.91	Vendor	0.23	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%		3	3		42														0.30	7.68	Hauling	0.46	19.16
Demolition Haul Trips for excavation of new pump station	14	Redwood Landfill				100%	27																		0.17	1.16			

Notes: Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt B_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026					Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May						
Existing Pump Station Removal																													
Worker Commute Trips - demo	23.4		100%																		132	132	66		10.15	118.80	Worker Commute	10.15	11.70
Demolition Haul Trips for Excavation of Ex. Pump Station	18	Redwood Landfill				100%															16			65	0.49	4.43	Hauling	0.68	8.18
Soil Import Truck Trips for Existing Pump Station	12	Marin/Sonoma 8120 Binford Rd				100%																6			0.18	1.11			
Pavement Removal For new pipe																													
Pavement Removal	18	Redwood Landfill				100%	2	38	36															64	2.38	21.38	Hauling	2.38	9.00
Trench Excavation and Pipe Construction																													
Demolition Haul Trips Soil from Trench	18	Redwood Landfill				100%			20	61	33													65	3.51	31.57	Hauling	10.52	9.22
Demolition Haul Trips Agreggate Base	18	Redwood Landfill				100%			13	41	22														2.34	21.05			
Soil Import Truck Trips for pit zone	12	Marin/Sonoma 8120 Binford Rd				100%			13	41	22														2.34	14.03			
Agregate Base Trucks Trips - Import	26	Dutra Materials				100%			13	41	22														2.34	30.40			
Asphalt Pavement of Road																													
Asphalt Trucks Trips - Import	52	Vulcan Materials Company 885 Lake Herman Rd				100%						4	44	28										65	2.34	60.80	Hauling	2.34	26.00
New Pump Station Construction																													
Worker Commute Trips	23.4		100%				50	190	210	220	210	212	276	222	126	132	108	132	120	114				325	14.29	167.18	Worker Commute	14.29	11.70
Vendor Trips	16.8				50%	50%			20	3	3	9	9	7	3										0.33	2.79	Vendor	0.33	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%			4	3		42													0.30	7.84	Hauling	0.47	19.96
Demolition Haul Trips for excavation of new pump station	18	Redwood Landfill				100%	27																		0.17	1.50			

Notes: Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt C_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026												2027			Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar						
Existing Pump Station Removal																																							
Demolition Haul Trips for Excavation of Ex. Pump Station	20	Redwood Landfill				100%																							16				64	0.50	5.00	Hauling	0.69	9.18
Soil Import Truck Trips for Existing Pump Station	14	Marin/Sonoma 8120 Binford Rd																												6				0.19	1.31			
Pavement Removal For new pipe																																							
Pavement Removal	20	Redwood Landfill					2	38	42	44	12																							108	2.56	25.56	Hauling	2.56	10.00
Trench Excavation and Pipe Construction																																							
Demolition Haul Trips Soil from Trench	20	Redwood Landfill				100%		45	63	66	30																								4.80	48.00				
Demolition Haul Trips Agreggate Base	20	Redwood Landfill				100%		30	42	44	22																							85	3.25	32.47	Hauling	14.54	9.78
Soil Import Truck Trips for pit zone	14	Marin/Sonoma 8120 Binford Rd				100%		30	42	44	22																								3.25	22.73				
Agregate Base Trucks Trips - Import	24	Dutra Materials				100%		30	42	44	22																								3.25	38.96				
Asphalt Pavement of Road																																							
Asphalt Trucks Trips - Import	54	Vulcan Materials Company 885 Lake Herman Rd				100%					10	40	44	42	2																				109	2.53	68.37	Hauling	2.53	27.00
New Pump Station Construction																																							
Worker Commute Trips	23.4		100%				50	190	210	220	204	240	264	252	132	132	108	132	160	114	132	132	120	126	132	126	126	126	114	132	114	114	66		13.54	158.45	Worker Commute	13.54	11.70
Vendor Trips	16.8				50%	50%			36	3	3	9	9	6	3							3	3	14	5	3								586	0.33	2.78	Vendor	0.33	8.40
Concrete Trucks Trips	54	Crown Hill Ready Mix 650 Green Island Rd				100%		7	7		37												33												0.29	7.74	Hauling	0.42	21.61
Demolition Haul Trips for excavation of new pump station	20	Redwood Landfill				100%	22												17																0.13	1.33			

Notes: Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt D_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Custom Travel Destination	Fleet Mix (percentage)				2025												2026												2027			Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar						
Existing Pump Station Removal																																							
Demolition Haul Trips for Excavation of Ex. Pump Station	20	Redwood Landfill				100%																							16				64	0.50	5.00	Hauling	0.69	9.18
Soil Import Truck Trips for Existing Pump Station	14	Marin/Sonoma 8120 Binford Rd				100%																								6				0.19	1.31			
Pavement Removal For new pipe																																							
Pavement Removal	20	Redwood Landfill				100%	2	38	42	4																								86	2.00	20.00	Hauling	2.00	10.00
Demolition Haul Trips Soil from Trench	20	Redwood Landfill				100%		45	63	18																								63	4.00	40.00	Hauling	12.19	9.78
Demolition Haul Trips Aggregate Base	20	Redwood Landfill				100%		30	42	14																									2.73	27.30			
Soil Import Truck Trips for pit zone	14	Marin/Sonoma 8120 Binford Rd				100%		30	42	14																									2.73	19.11			
Aggregate Base Trucks Trips - Import	24	Dutra Materials				100%		30	42	14																									2.73	32.76			
Asphalt Pavement of Road																																							
Asphalt Trucks Trips - Import	56	Vulcan Materials Company 885 Lake Herman Rd				100%				26	42	18																							65	2.65	74.09	Hauling	2.65	28.00
New Pump Station Construction																																							
Worker Commute Trips	23.4		100%				50	190	210	246	252	174	132	126	126	132	108	132	160	114	132	132	120	126	132	126	126	126	114	132	114	114	66	586	12.67	148.23	Worker Commute	12.67	11.70
Vendor Trips	16.8				50%	50%			20	3	3	8	9	6	3							3	3	14	5	3									0.27	2.29	Vendor	0.27	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%		4	4		37												33												0.27	6.92	Hauling	0.40	20.67
Demolition Haul Trips for excavation of new pump station	20	Redwood Landfill				100%	22												17																0.13	1.33			

Notes: Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt E_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026												2027			Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar						
Existing Pump Station Removal																																							
Demolition Haul Trips for Excavation of Ex. Pump Station	20	Redwood Landfill				100%																								16				64	0.50	5.00	Hauling	0.69	9.18
Soil Import Truck Trips for Existing Pump Station	14	Marin/Sonoma 8120 Binford Rd				100%																									6				0.19	1.31			
Pavement Removal For new pipe																																							
Pavement Removal	20	Redwood Landfill				100%	2	38	38																									64	2.44	24.38	Hauling	2.44	10.00
Trench Excavation and Pipe Construction																																							
Demolition Haul Trips Soil from Trench	20	Redwood Landfill				100%		45	63	9																									3.71	37.14			
Demolition Haul Trips Aggregate Base	20	Redwood Landfill				100%		30	42	6																								63	2.48	24.76	Hauling	11.14	9.78
Soil Import Truck Trips for pit zone	14	Marin/Sonoma 8120 Binford Rd				100%		30	42	6																									2.48	17.33			
Aggregate Base Trucks Trips - Import	24	Dutra Materials				100%		30	42	6																									2.48	29.71			
Asphalt Pavement of Road																																							
Asphalt Trucks Trips - Import	56	Vulcan Materials Company 885 Lake Herman Rd				100%				26	42	10																							65	2.40	67.20	Hauling	2.40	28.00
New Pump Station Construction																																							
Worker Commute Trips	23.4		100%				50	190	210	246	252	150	132	126	126	132	108	132	160	114	132	132	120	126	132	126	126	126	114	132	114	114	66		12.59	147.27	Worker Commute	12.59	11.70
Vendor Trips	16.8				50%	50%			20	3	3	8	9	6	3							3	3	14	5	3									0.27	2.29	Vendor	0.27	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%		4	4		37												33											586	0.27	6.92	Hauling	0.40	20.67
Demolition Haul Trips for excavation of new pump station	20	Redwood Landfill				100%	22												17																0.13	1.33			

Notes: Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

MEMORANDUM

Date: January 10, 2024

Project: 21202-14

To: Geoff Reilly, Senior Environmental Planner, WRA, Inc.

From: Yilin Tian, Project Environmental Engineer, Baseline Environmental Consulting

Subject: **Air Quality Health Risk Assessment for the Lynwood Pump Station Replacement Project**

Baseline Environmental Consulting (Baseline) has prepared this technical memorandum to evaluate the potential health risk impacts associated with the proposed Lynwood Pump Station Replacement Project (project) in Novato, California. The project would replace the existing North Marin Water District (NMWD) Lynwood Pump Station (Existing PS Site) in Novato, California, at a new location. The following five Alternatives are currently being considered for the project at the sites shown on **Figure 1**:

- **Alternative A:** Alternative A would include one new pump station (PS) with four pumps located at the Sunset Parkway Site (Site 1). Site 1 is located approximately 330 feet southwest of the Existing PS Site. The proposed PS footprint is approximately 2,000 square feet (SF) and the proposed pipe improvements are approximately 9,000 SF.

- **Alternative B:** Alternative B would include one new PS with four pumps located at the Ignacio Boulevard Site (Site 2). The Ignacio Boulevard Site is located approximately 1.3 miles south of the Existing PS Site. The proposed PS footprint is approximately 2,000 SF and the proposed pipe improvements are approximately 37,500 SF.

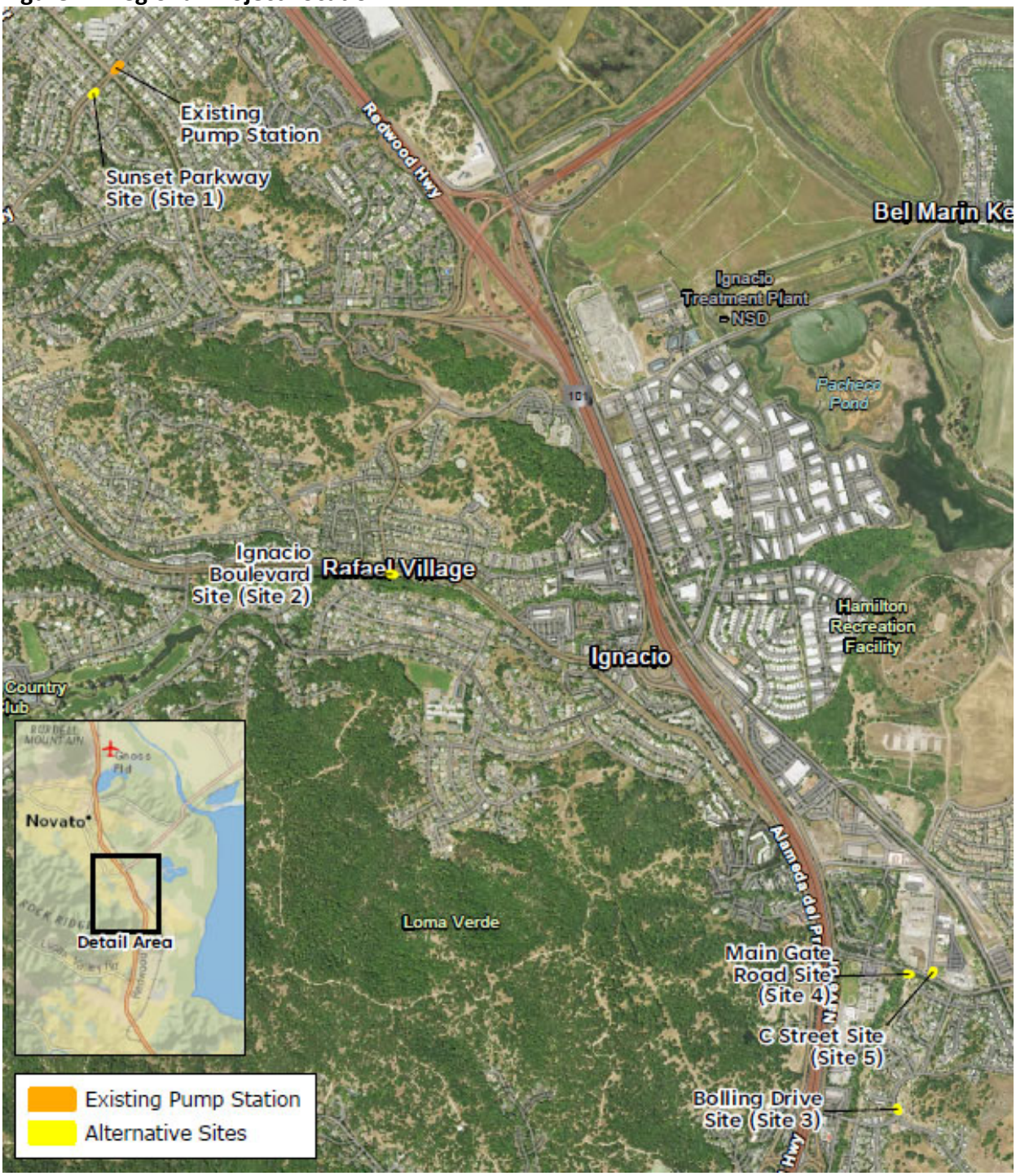
- **Alternative C:** Alternative C would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) and one at the Bolling Drive Site (Site 3). The new PS at the Ignacio Boulevard Site would include three pumps and the new PS at Bolling Drive Site would include two pumps. The Boling Drive Site is located approximately 3 miles southeast of the Existing PS Site. The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and the proposed pipe improvements are approximately 37,500 SF. The proposed PS footprint at the Bolling Drive Site is approximately 1,600 SF and the proposed pipe improvements are approximately 31,000 SF.

- **Alternative D:** Alternative D would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the Main Gate Road Site (Site 4) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the Main Gate Road Site (Site 4) is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and the proposed pipe improvements are approximately 37,500 SF. The proposed PS footprint at the Main Gate Road Site is approximately 1,600 SF and the proposed pipe improvements are approximately 4,700 SF.

- **Alternative E:** Alternative E would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the C Street Site (Site 5) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the C Street Site is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and the proposed pipe improvements are approximately 37,500 SF. The proposed PS footprint at the C Street Site is approximately 1,600 SF and the proposed pipe improvements are approximately 1,200 SF.

This technical memorandum evaluates the potential health risk impacts to nearby sensitive receptors associated with diesel particulate matter (DPM) emissions during project construction. The health risks to nearby sensitive receptors were evaluated in accordance with guidance from the Office of Environmental Health Hazard Assessment (OEHHA) and the Bay Area Air Quality Management District's (BAAQMD's) recommended thresholds of significance. This study will be used to support environmental review of the project under the California Environmental Quality Act (CEQA).

Figure 1: Regional Project Location



PROJECT ANALYSIS

During construction, the project would generate emissions of diesel particulate matter (DPM) and fine particulate matter ($PM_{2.5}$) from the exhaust of diesel-powered engines; these emissions are a complex mixture of soot, ash particulates, metallic abrasion particles, volatile organic compounds, and other components that can penetrate deeply into the lungs and contribute to a range of health problems. In 1998, the California Air Resources Board (CARB) identified DPM from diesel-powered engines as a toxic air contaminant (TAC) based on its potential to cause cancer and other adverse health effects.[1] While diesel exhaust is a complex mixture that includes hundreds of individual constituents, DPM is used as a surrogate measure of exposure, under California regulatory guidelines, for the mixture of chemicals that make up diesel exhaust as a whole.

Health Risk Screening Thresholds

For risk assessment purposes, toxic air contaminants (TACs) are separated into carcinogens and non-carcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per 1 million exposed individuals over a lifetime of exposure. Non-carcinogenic substances are generally assumed to have a safe threshold below which health impacts would not occur. Acute and chronic exposure to non-carcinogens is expressed as a hazard index (HI), which is the sum of expected exposure levels divided by the corresponding acceptable exposure levels.

The project site is located in the San Francisco Bay Area Air Basin (SFBAAB), which is under the jurisdiction of the BAAQMD. The BAAQMD has adopted thresholds of significance to assist lead agencies in the evaluation and mitigation of air quality impacts under CEQA.[2] The BAAQMD's recommend health risk thresholds are summarized in **Table 1**.

[1] California Air Resources Board (CARB), 1998. Initial Statement of Reasons for Rulemaking; Proposed Identification of Diesel Exhaust as a Toxic Air Contaminant, June.
[2] Bay Area Air Quality Management District (BAAQMD), 2023. CEQA Air Quality Guidelines, May.

Table 1: BAAQMD Health Risk Screening Thresholds

Impact Analysis	Pollutant	Screening Thresholds
Local Community Risks and Hazards (Operation and/or Construction)	$PM_{2.5}$ (project)	0.3 µg/m^3 (annual average)
	TACs (project)	Cancer risk increase > 10 in one million Chronic hazard index > 1.0
	$PM_{2.5}$ (cumulative)	0.8 µg/m^3 (annual average)
	TACs (cumulative)	Cancer risk > 100 in one million Chronic hazard index > 10.0

Notes: TACs = Toxic air contaminants; $PM_{2.5}$ = Fine particulate matter; µg/m^3 = micrograms per cubic meter.
Source: BAAQMD, 2023. 2022 California Environmental Quality Act Air Quality Guidelines. April.

Sensitive Receptors

Sensitive receptors are areas where individuals are more susceptible to the adverse effects of poor air quality. Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, parks, elderly housing, and convalescent facilities. Residential areas are also considered sensitive receptors because people are often at home for extended periods, thereby increasing the duration of exposure to potential air contaminants. Existing sensitive land uses in the vicinity of each alternative site location are listed below:

- **Site 1:** Residences to the north, west, south, and east as close as 40 feet and the Lynwood Elementary School about 580 feet to the north of Site 1. No offsite worker receptors are within 1,000 feet of Site 1.

- **Site 2:** Residences to the north, west, south, and east of Site 2 as close as 140 feet. No offsite worker receptors are within 1,000 feet of Site 2.

- **Site 3:** Residences to the west, east, and south as close as 95 feet; North Bay Children's Center, Tinker Way School Age Program about 585 feet to the north; the Novato Children's Center about 650 feet to the northwest; and, the Hamilton Meadow Park School about 880 feet to the northwest. The playground within the Clark A Blasdel Park is located about 300 feet north of Site 3. Offsite worker receptors are located at the Novato Fire Station 65 about 135 feet to the south and along Nave Drive as close as 635 feet west of Site 3.

- **Site 4:** Residences to the east, south, and northwest as close as 155 feet; the Hamilton Meadow Park School about 300 feet to the southwest; the Novato Charter School about 375 feet to the northeast; the North Bay Children Center, C Street about 480 feet to the northeast; the Wonder Nook Preschool about 690 feet to the north; the North Bay Children's Center, Tinker Way School Age Program about 950 feet to the south; and, the

Espino C Family Child Care about 975 feet to the east of Site 4. Offsite worker receptors are located about 860 feet to the northwest and 750 feet to the northeast of Site 4.

- **Site 5:** Residences to the east, south, and northwest as close as 105 feet; the Hamilton Meadow Park School about 630 feet to the southwest; the Novato Charter School about 200 feet to the north; the North Bay Children Center, C Street about 330 feet to the north; the Wonder Nook Preschool about 880 feet to the northwest; the North Bay Children's Center, Tinker Way School Age Program about 980 feet to the south; and, the Espino C Family Child Care about 670 feet to the southeast of Site 5. Offsite worker receptors are located about 860 feet to the northwest and 650 feet to the northeast of Site 5.

Diesel Particulate Matter Emissions from Construction

Project construction would generate DPM and $PM_{2.5}$ emissions from the exhaust of off-road diesel construction equipment and fugitive $PM_{2.5}$ emissions from construction activities. The BAAQMD recommends using the most recent version of the California Emissions Estimator Model (CalEEMod Version 2022.1) to estimate air pollutant emissions from construction of a project. CalEEMod uses widely accepted models for emission estimates combined with appropriate default data for a variety of land-use projects that can be used if site-specific information is not available. The primary input data used to estimate emissions associated with construction of the project were provided by NMWD and contain information on construction duration, import and export volumes, construction-related vehicle trips, trip lengths, and off-road construction equipment inventory and usage. Construction information provided by NMWD and a copy of the CalEEMod report for each Alternative of the proposed project, which summarize the input parameters, assumptions, and findings, are included in **Attachment A**.

For this analysis, emissions of exhaust PM_{10} were used as a surrogate for DPM, which is a conservative assumption because more than 90 percent of DPM is less than 1 micron in diameter.[3] The total DPM emissions from construction activities at the five alternative site locations are presented in **Table 2**. As shown in **Table 2**, on-site construction DPM emission from offroad equipment at Site 1 would be the highest. As described above, Site 1 (Alternative A) is the closest Alternative to sensitive receptors, with residential receptors as close as 40 feet across Sunset Parkway to the north. Therefore, Site 1 (Alternative A) was selected as a reasonable worst-case scenario among the five Alternative sites to evaluate the potential exposure of nearby sensitive receptors to TACs.

[3] California Air Resources Board (CARB), 2016. Overview: Diesel Exhaust and Health. Available at: https://www.arb.ca.gov/research/diesel/diesel-health.htm, accessed January 13, 2017. Last updated April 12, 2016.

Table 2: On-site DPM Emissions (Pounds)

Construction Emission Scenario	Total On-site DPM Emissions from Offroad Construction Equipment
Site 1 (Alternative A)	21.8
Site 2 (Alternative B)	19.4
Site 3 (Alternative C, excluding Site 2 emissions)	18.7
Site 4 (Alternative D, excluding Site 2 emissions)	15.8
Site 5 (Alternative E, excluding Site 2 emissions)	15.6

Notes: DPM emissions from existing pump station demolition were included for Site 1 but not for Site 2 to 5 due to the distances between the existing pump station and Site 2 to 5. DPM emissions from Site 3 to 5 were estimated by subtracting the total on-site offroad construction equipment DPM emissions estimated for Alternative B (Site 2 only) from the total on-site offroad construction equipment DPM emissions estimated for Alternative C through E.
Source: **Attachment A**.

Health Risk Analysis

Exposure to Diesel Particulate Matter Emissions during Construction

In accordance with guidance from the BAAQMD[4] and OEHHA,[5] a health risk assessment was conducted to estimate the incremental increase in cancer risk and chronic HI to sensitive receptors from DPM emissions during construction. The acute HI for DPM was not calculated because an acute reference exposure level has not been approved by OEHHA and CARB, and the BAAQMD does not recommend analysis of acute non-cancer health hazards from construction activity.

The annual average concentrations of DPM and exhaust $PM_{2.5}$ during construction were estimated within 1,000 feet of the project using the U.S. Environmental Protection Agency's Industrial Source Complex Short Term (ISCST3) air dispersion model. The input parameters and assumptions used for estimating the dispersion of DPM and $PM_{2.5}$ from off-road diesel construction equipment are included in **Attachment A**.

Daily emissions from construction were assumed to primarily occur between 7 a.m. and 6 p.m. Monday through Friday, and between 10 a.m. and 5 p.m. on Saturdays, in accordance with the construction hours established in the City of Novato Municipal Code Division 19.22.070. The exhaust and fugitive dust from off-road equipment was represented in the ISCST3 model as an area source encompassing the project site. Exhaust and fugitive dust emission rates for off-road

[4] Bay Area Air Quality Management District (BAAQMD), 2023. CEQA Air Quality Guidelines, May.
[5] Office of Environmental Health Hazard Assessment (OEHHA), 2015. Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments, May.

equipment were based on the actual hours of work and averaged over the entire duration of construction.

A uniform grid of receptors spaced 20 meters apart was created for ground level receptors at heights of 1.5 meters to develop isopleths (i.e., concentration contours) around the project site that illustrate the air dispersion pattern from the emissions sources. In addition, discrete receptors were created for ground level receptors at heights of 1.5 meters to calculate concentrations at the maximally exposed individual resident (MEIR) and the maximally exposed individual student (MEIS). The ISCST3 model input parameters included 5 years of BAAQMD meteorological data from the Sonoma Baylands Meteorological Site located about 5.7 miles to the northeast of the Existing PS Site.

The air dispersion model was used to estimate annual average concentrations of PM_{10} and $PM_{2.5}$ from project construction emissions for Alternative A (the worst-case scenario). Based on the results of the air dispersion model (**Attachment A**), potential off-site health risks were evaluated for the MEIR on the ground floor of a single-family residence located about 40 feet to the north of Site 1, and the MEIS at Lynwood Elementary School located about 580 feet to the north of Site 1 (see **Figure 2**).

For the MEIR, the incremental increase in cancer risk from on-site DPM emissions during project construction was assessed for an infant exposed to DPM starting from birth. It was conservatively assumed that the infant would be exposed to annual average DPM concentrations over the entire construction duration of 17 months. This exposure scenario represents the most sensitive individual who could be exposed to adverse air quality conditions in the vicinity of the project site. For the MEIS, it was conservatively assumed that a student in the age of 2-16 years old would attend school at the Lynwood Elementary School during the entire construction duration of 17 months.

Estimates of the health risks at the MEIR and MEIS from exposure to DPM and $PM_{2.5}$ concentrations during project construction are summarized and compared to the BAAQMD's thresholds of significance in **Table 3**. The estimated excess cancer risk and chronic HI for DPM and annual average $PM_{2.5}$ concentration from construction emissions at Site 1 (Alternative A) were below the thresholds of significance. Therefore, construction of the project would not expose existing sensitive receptors to substantial concentrations of TACs and $PM_{2.5}$ from construction of Alternative A (the worst-case scenario) and this impact would be less than significant for Alternatives A through E.

Table 3: Health Risks during Project Construction for Alternative A (Worst-Case Scenario)

Emissions Scenario	Receptor	Diesel Particulate Matter		$PM_{2.5}$ Annual Average Concentration ($\mu g/m^3$)
		Cancer Risk (per million)	Chronic Hazard Index	
Construction Exhaust (Site 1)	MEIR	9.39	0.01	0.04
	MEIS	0.75	<0.01	0.01
Thresholds of Significance		10	1.0	0.3
Exceed Threshold?		No	No	No

Notes: $\mu g/m^3$ = micrograms per cubic meter
Source: **Attachment A**

Figure 2: Sensitive Receptors in Project Vicinity for Alternative A (Worst-Case Scenario)

Exposure to Diesel Particulate Matter Emissions during Operation

In this analysis, it was assumed that a 1,000-kilowatt emergency diesel generator would be required for each Alternative, and the generator would be used for non-emergency operation up to 50 hours per year for routine testing and maintenance. Operation of stationary sources is subject to BAAQMD permitting requirements to minimize the potential exposure of nearby sensitive receptors to TACs. In accordance with BAAQMD's Regulation 2-5, New Source Review of Toxic Air Contaminants, the BAAQMD does not issue permits for generators that would result in an excess cancer risk greater than 10 in 1 million or a chronic HI greater than 1.0. Therefore, operation of the project would not expose existing sensitive receptors to substantial concentrations of TACs and $PM_{2.5}$ for Alternatives A through E.

Cumulative Toxic Air Contaminant Emissions

In addition to a project's individual TAC emissions during construction and operation, the potential cumulative health risks to sensitive receptors from existing TACs were evaluated. Cumulative health risks were estimated at the MEIR for Alternative A to represent the worst-case-exposure scenario for sensitive receptors in the project vicinity.

Conservatively assuming the project's emergency generators would result in the BAAQMD's maximum permissible excess cancer risk of 10 in 1 million due to emissions of DPM, the BAAQMD Health Risk Calculator (Beta Version 5.0)[6] was used to back-calculate the equivalent screening-level health risk values for chronic HI and annual average $PM_{2.5}$ concentrations. Based on the emission rate for DPM (0.0071 pounds per day) that would result in a maximum cancer risk of 10 in 1 million, the associated fraction of $PM_{2.5}$ emissions from an emergency generator were estimated using the CARB's speciation profiles. The supporting health risk calculations are included in **Attachment A**.

Based on the BAAQMD's permitted stationary source risk map,[7] there are no existing stationary sources within 1,000 feet of the MEIR. At the time of preparation of this analysis, there are no reasonably foreseeable future projects within 1,000 feet of Site 1 that would introduce a new source of TAC and/or $PM_{2.5}$ emissions.

[6] Bay Area Air Quality Management District (BAAQMD), 2022. Health Risk Calculator with Distance Multipliers (Beta 5.0). Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling.
[7] Bay Area Air Quality Management District (BAAQMD), 2023. Stationary Source Screening Map. Available at: https://baaqmd.maps.arcgis.com/apps/webappviewer/index.html?id=845658c19eae4594b9f4b805fb9d89a3.

Preliminary health risk screening values at the MEIR from exposure to mobile sources of TACs were estimated based on the BAAQMD's Mobile Source Screening Map,[8] which provides health risk estimates reflective of 2022 for residents living near roadways, rail lines, and rail yards.

Estimates of the cumulative health risks at the MEIR for the project are summarized and compared to the cumulative thresholds of significance in **Table 4**. As shown in **Table 4,** the cumulative cancer risk, cumulative chronic HI, and annual average $PM_{2.5}$ at the MEIR location were below the BAAQMD's cumulative thresholds for Alternative A (the worst-case scenario). Therefore, the exposure of existing sensitive receptors to substantial concentrations of TACs and $PM_{2.5}$ from implementation of the project would not be cumulatively considerable and the impact would be less than significant for Alternatives A through E.

Table 4: Cumulative Health Risks for Alternative A (Worst-Case Scenario)

Source	Source Type	Ref	Diesel Particulate Matter		$PM_{2.5}$ Annual Average Concentration (µg/m³)
			Cancer Risk (per million)	Chronic Hazard Index	
Project					
Off-Road Construction Equipment	Diesel Exhaust		9.39	0.01	0.04
Emergency Generator	*Diesel Generator*	1	9.99	<0.01	0.01
Existing Mobile Sources					
Roadway	Mobile	2	9.5	0.03	0.2
Cumulative Health Risks			28.9	<0.1	0.3
Thresholds of Significance			100	10.0	0.8
Exceed Threshold?			No	No	No

Notes: µg/m³=micrograms per cubic meter; HI=hazard index; NA=not applicable; Ref=reference
Health risk screening values derived using the following BAAQMD tools and methodologies:
1) BAAQMD's Health Risk Calculator (Beta Version 5.0)
2) BAAQMD Beta version Mobile Source Screening Map, 2023
Source: **Attachment A**

[8] Bay Area Air Quality Management District (BAAQMD), 2023. Bay Area Air Quality Management District Mobile Source Screening Map, Beta Version. Available at: https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/ceqa-tools/health-risk-screening-and-modeling.

CONCLUSION

Based on the conservative analysis of the potential health risks related to emissions from off-road construction equipment during project construction and emergency diesel generators during project operation, the project would not result in a substantial increase in the exposure of sensitive receptors to DPM and $PM_{2.5,}$ and the health risk impacts would be less than significant for Alternatives A through E.

Attachment A

Supporting Air Quality Calculations

Lynwood Alt A Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt A
Construction Start Date	1/2/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.6
Location	38.084624543920626, -122.56262647392842
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	2.00	1000sqft	0.05	2,000	0.00	—	—	New Pump Station

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.71	8.62	2.43	6.55	0.01	0.10	0.15	0.25	0.09	0.04	0.12	—	1,029	1,029	0.06	0.04	0.85	1,044
2026	0.29	0.25	1.61	3.65	0.01	0.06	0.12	0.18	0.05	0.03	0.08	—	589	589	0.02	0.01	0.35	593
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.67	8.60	2.11	5.57	0.01	0.09	0.14	0.23	0.08	0.03	0.11	—	806	806	0.04	0.03	0.02	816
2026	0.51	0.43	2.93	5.05	0.01	0.10	0.23	0.33	0.10	0.05	0.15	—	915	915	0.04	0.02	0.02	923
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.63	1.59	1.14	1.95	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	365	365	0.02	0.01	0.18	369
2026	0.09	0.08	0.52	0.89	< 0.005	0.02	0.04	0.06	0.02	0.01	0.03	—	162	162	0.01	< 0.005	0.06	164
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.30	0.29	0.21	0.36	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	60.3	60.3	< 0.005	< 0.005	0.03	61.1
2026	0.02	0.01	0.09	0.16	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.9	26.9	< 0.005	< 0.005	0.01	27.1

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.36	0.37	1.40	0.89	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	199	201	0.24	< 0.005	0.52	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.36	1.40	0.80	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	198	200	0.24	< 0.005	0.52	208
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.06	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.33	0.30	1.35	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	0.00	154	154	0.01	< 0.005	0.00	155
Total	0.34	0.36	1.37	0.83	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	195	197	0.24	< 0.005	0.52	205
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.43	6.43	< 0.005	< 0.005	—	6.46
Water	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Waste	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Stationary	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.07	0.25	0.15	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.37	32.3	32.6	0.04	< 0.005	0.09	33.9

3. Construction Emissions Details

3.1. Existing PS 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	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.28	0.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	86.8	86.8	< 0.005	< 0.005	—	87.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 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	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.4	14.4	< 0.005	< 0.005	—	14.4
Demolition	—	—	—	—	—	—	< 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	0.04	0.04	0.02	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.9	85.9	< 0.005	< 0.005	0.32	87.2
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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	0.03	16.2
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.1	80.1	< 0.005	< 0.005	0.01	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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.4	15.4	< 0.005	< 0.005	< 0.005	16.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.74	2.74	< 0.005	< 0.005	< 0.005	2.88
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.37	2.37	< 0.005	< 0.005	< 0.005	2.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.45	0.45	< 0.005	< 0.005	< 0.005	0.48

3.3. Pavement Removal (2025) - 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	0.02	0.02	0.09	1.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	246	246	0.01	< 0.005	—	247
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.0	29.0	< 0.005	< 0.005	—	29.1
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.80	4.80	< 0.005	< 0.005	—	4.81
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	22.7	22.7	< 0.005	< 0.005	< 0.005	23.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.68	2.68	< 0.005	< 0.005	< 0.005	2.82
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.47

3.5. New Pump Station Construction (2025) - 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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.89	0.74	< 0.005	0.03	—	0.03	0.03	—	0.03	—	144	144	0.01	< 0.005	—	144
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	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.8	23.8	< 0.005	< 0.005	—	23.9
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	0.04	0.04	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.41	103
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.47	6.47	< 0.005	< 0.005	0.02	6.77
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.7	32.7	< 0.005	0.01	0.07	34.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	94.4	94.4	< 0.005	< 0.005	0.01	95.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.47	6.47	< 0.005	< 0.005	< 0.005	6.76
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.7	32.7	< 0.005	0.01	< 0.005	34.4
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	67.7	67.7	< 0.005	< 0.005	0.13	68.7
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.62	4.62	< 0.005	< 0.005	0.01	4.83
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.4	23.4	< 0.005	< 0.005	0.02	24.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.2	11.2	< 0.005	< 0.005	0.02	11.4

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.77	0.77	< 0.005	< 0.005	< 0.005	0.80
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.87	3.87	< 0.005	< 0.005	< 0.005	4.07

3.7. New Pump Station 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	0.18	0.15	1.22	1.03	< 0.005	0.04	—	0.04	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.03	0.03	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.5	35.5	< 0.005	< 0.005	—	35.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.87	5.87	< 0.005	< 0.005	—	5.89
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.03	0.38	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	92.6	92.6	< 0.005	< 0.005	0.01	93.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.35	6.35	< 0.005	< 0.005	< 0.005	6.63
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.0	32.0	< 0.005	0.01	< 0.005	33.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	16.4	16.4	< 0.005	< 0.005	0.03	16.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.12	1.12	< 0.005	< 0.005	< 0.005	1.17
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.64	5.64	< 0.005	< 0.005	< 0.005	5.94
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.71	2.71	< 0.005	< 0.005	< 0.005	2.75
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.19	0.19	< 0.005	< 0.005	< 0.005	0.19
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.93	0.93	< 0.005	< 0.005	< 0.005	0.98

3.9. Paving (2025) - Unmitigated

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

Location	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	0.04	0.04	0.34	2.22	< 0.005	0.01	—	0.01	0.01	—	0.01	—	389	389	0.02	< 0.005	—	390
Paving	—	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	< 0.005	< 0.005	0.04	0.27	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.9	46.9	< 0.005	< 0.005	—	47.0
Paving	—	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	0.01	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.76	7.76	< 0.005	< 0.005	—	7.78
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.14	0.08	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	95.9	95.9	0.01	0.02	0.20	101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	11.6	11.6	< 0.005	< 0.005	0.01	12.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.91	1.91	< 0.005	< 0.005	< 0.005	2.01

3.11. Trench Excavation and Pipe Construction (2025) - 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	8.40	8.38	0.50	2.66	< 0.005	0.04	—	0.04	0.03	—	0.03	—	127	127	0.01	< 0.005	—	127
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	8.40	8.38	0.50	2.66	< 0.005	0.04	—	0.04	0.03	—	0.03	—	127	127	0.01	< 0.005	—	127
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	1.45	1.45	0.09	0.46	< 0.005	0.01	—	0.01	0.01	—	0.01	—	21.9	21.9	< 0.005	< 0.005	—	21.9
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	0.26	0.26	0.02	0.08	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	3.62	3.62	< 0.005	< 0.005	—	3.63

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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.7	75.7	0.01	0.01	0.15	79.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.14	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.8	75.8	0.01	0.01	< 0.005	79.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.1	13.1	< 0.005	< 0.005	0.01	13.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.16	2.16	< 0.005	< 0.005	< 0.005	2.28

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94
Total	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3

Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Total	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Total	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Total	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Existing PS Demolition	Demolition	3/1/2026	5/31/2026	5.00	65.0	Demo Existing PS
Pavement Removal	Site Preparation	1/1/2025	2/28/2025	5.00	43.0	Pavement Removal For new pipe
New Pump Station Construction	Building Construction	1/1/2025	3/31/2026	5.00	325	New PS Construction
Paving	Paving	4/1/2025	5/31/2025	5.00	44.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	4/30/2025	5.00	63.0	Excavation and Pipe Construction

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
Existing PS Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing PS Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing PS Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73

Existing PS Demolition	Excavators	Diesel	Tier 4 Final	1.00	4.90	130	0.38
Existing PS Demolition	Air Compressors	Diesel	Average	1.00	2.40	37.0	0.48
Existing PS Demolition	Plate Compactors	Diesel	Average	1.00	2.00	8.00	0.43
Existing PS Demolition	Forklifts	Diesel	Average	1.00	1.30	82.0	0.20
Existing PS Demolition	Generator Sets	Diesel	Average	1.00	5.00	14.0	0.74
Existing PS Demolition	Pumps	Diesel	Average	1.00	5.30	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	3.30	24.0	0.38
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	3.30	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.80	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.50	16.0	0.38
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.50	8.00	0.43
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	5.90	14.0	0.74
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38

Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	1.50	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	1.50	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	3.00	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	1.10	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.50	11.0	0.74
Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	4.70	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.30	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.30	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing PS Demolition	—	—	—	—
Existing PS Demolition	Worker	10.2	11.7	LDA,LDT1,LDT2
Existing PS Demolition	Vendor	—	0.00	HHDT,MHDT
Existing PS Demolition	Hauling	0.68	5.91	HHDT
Existing PS Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	—	8.40	HHDT,MHDT

Pavement Removal	Hauling	0.84	7.00	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	2.57	7.67	HHDT
Trench Excavation and Pipe Construction	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	11.7	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.23	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.46	19.2	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	1.00	26.0	HHDT
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 (Building Square Footage)	Acres Paved (acres)
Existing PS Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	700	1,500	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	56.8	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,000	1,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	20,737	204	0.0330	0.0040	85,088

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	462,500	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	2.48	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.

Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.
Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.

Lynwood Alt B Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt B
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	2.00	1000sqft	0.05	2,000	0.00	—	—	New Pump Station

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.00	8.21	2.51	6.98	0.01	0.09	0.22	0.31	0.08	0.06	0.14	—	1,500	1,500	0.08	0.07	1.35	1,520
2026	0.29	0.25	1.61	3.65	0.01	0.06	0.12	0.18	0.05	0.03	0.08	—	594	594	0.02	0.01	0.36	598
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.07	8.26	2.96	9.76	0.02	0.11	0.25	0.36	0.09	0.06	0.16	—	1,847	1,847	0.12	0.09	0.04	1,878
2026	0.52	0.44	2.95	5.14	0.01	0.10	0.25	0.36	0.10	0.06	0.15	—	946	946	0.04	0.02	0.02	954
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.59	1.60	1.45	3.51	0.01	0.05	0.12	0.17	0.04	0.03	0.07	—	722	722	0.04	0.03	0.29	732
2026	0.09	0.08	0.52	0.91	< 0.005	0.02	0.04	0.06	0.02	0.01	0.03	—	168	168	0.01	< 0.005	0.07	169
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.29	0.29	0.26	0.64	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	119	119	0.01	0.01	0.05	121
2026	0.02	0.01	0.10	0.17	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.8	27.8	< 0.005	< 0.005	0.01	28.0

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.36	0.37	1.40	0.89	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	199	201	0.24	< 0.005	0.52	208
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.36	1.40	0.80	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	198	200	0.24	< 0.005	0.52	208
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.06	< 0.005	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.18	0.18	< 0.005	< 0.005	—	0.18
Energy	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	38.9	38.9	< 0.005	< 0.005	—	39.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Waste	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Stationary	0.33	0.30	1.35	0.77	< 0.005	0.04	0.00	0.04	0.04	0.00	0.04	0.00	154	154	0.01	< 0.005	0.00	155
Total	0.34	0.36	1.37	0.83	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	2.22	195	197	0.24	< 0.005	0.52	205
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Energy	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.43	6.43	< 0.005	< 0.005	—	6.46
Water	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Waste	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Stationary	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.07	0.25	0.15	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.37	32.3	32.6	0.04	< 0.005	0.09	33.9

3. Construction Emissions Details

3.1. Existing Pump Station 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	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.56	3.26	0.01	0.06	—	0.06	0.05	—	0.05	—	487	487	0.02	< 0.005	—	489
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.28	0.58	< 0.005	0.01	—	0.01	0.01	—	0.01	—	86.8	86.8	< 0.005	< 0.005	—	87.1
Demolition	—	—	—	—	—	—	0.01	0.01	—	< 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	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.4	14.4	< 0.005	< 0.005	—	14.4
Demolition	—	—	—	—	—	—	< 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	0.04	0.04	0.02	0.37	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.9	85.9	< 0.005	< 0.005	0.32	87.2
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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	0.04	22.0
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	80.1	80.1	< 0.005	< 0.005	0.01	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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.9	20.9	< 0.005	< 0.005	< 0.005	21.9
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.02	14.5
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.72	3.72	< 0.005	< 0.005	< 0.005	3.91
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.37	2.37	< 0.005	< 0.005	< 0.005	2.41
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.62	0.62	< 0.005	< 0.005	< 0.005	0.65

3.3. Pavement Removal (2025) - 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	0.05	0.05	0.27	3.83	0.01	0.01	—	0.01	0.01	—	0.01	—	708	708	0.03	0.01	—	710
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.67	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	124	124	0.01	< 0.005	—	125
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20.6	20.6	< 0.005	< 0.005	—	20.6
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	0.14	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	81.6	81.6	0.01	0.01	< 0.005	85.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.01	15.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.37	2.37	< 0.005	< 0.005	< 0.005	2.49

3.5. New Pump Station Construction (2025) - 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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.19	0.15	1.24	1.03	< 0.005	0.05	—	0.05	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.89	0.74	< 0.005	0.03	—	0.03	0.03	—	0.03	—	144	144	0.01	< 0.005	—	144
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	0.16	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	23.8	23.8	< 0.005	< 0.005	—	23.9
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	0.05	0.05	0.04	0.56	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	123	123	< 0.005	< 0.005	0.50	125
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	0.02	9.71
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.8	34.8	< 0.005	0.01	0.07	36.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.50	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	115	115	< 0.005	< 0.005	0.01	116
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	< 0.005	9.69
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.8	34.8	< 0.005	0.01	< 0.005	36.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.03	0.03	0.35	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	82.4	82.4	< 0.005	< 0.005	0.15	83.7
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.63	6.63	< 0.005	< 0.005	0.01	6.93
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.9	24.9	< 0.005	< 0.005	0.02	26.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.06	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	13.6	13.6	< 0.005	< 0.005	0.03	13.9

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.12	4.12	< 0.005	< 0.005	< 0.005	4.33

3.7. New Pump Station 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	0.18	0.15	1.22	1.03	< 0.005	0.04	—	0.04	0.04	—	0.04	—	201	201	0.01	< 0.005	—	202
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	0.03	0.03	0.21	0.18	< 0.005	0.01	—	0.01	0.01	—	0.01	—	35.5	35.5	< 0.005	< 0.005	—	35.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.87	5.87	< 0.005	< 0.005	—	5.89
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.47	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	113	113	< 0.005	< 0.005	0.01	114
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.12	9.12	< 0.005	< 0.005	< 0.005	9.52
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	34.1	34.1	< 0.005	0.01	< 0.005	35.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.08	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	19.9	19.9	< 0.005	< 0.005	0.03	20.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	< 0.005	1.68
Hauling	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.00	6.00	< 0.005	< 0.005	0.01	6.31
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.30	3.30	< 0.005	< 0.005	0.01	3.35
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	< 0.005	0.28
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	1.05

3.9. Paving (2025) - Unmitigated

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

Location	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	0.09	0.09	0.79	5.17	0.01	0.02	—	0.02	0.02	—	0.02	—	907	907	0.04	0.01	—	910
Paving	—	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	0.14	0.92	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	162	162	0.01	< 0.005	—	162
Paving	—	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	0.03	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	26.7	26.7	< 0.005	< 0.005	—	26.8
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.03	0.01	0.32	0.19	< 0.005	< 0.005	0.06	0.06	< 0.005	0.02	0.02	—	224	224	0.03	0.04	0.48	236
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	40.0	40.0	0.01	0.01	0.04	42.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.62	6.62	< 0.005	< 0.005	0.01	6.96

3.11. Trench Excavation and Pipe Construction (2025) - 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	7.69	7.67	0.56	3.92	< 0.005	0.04	—	0.04	0.03	—	0.03	—	328	328	0.01	< 0.005	—	329
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	7.69	7.67	0.56	3.92	< 0.005	0.04	—	0.04	0.03	—	0.03	—	328	328	0.01	< 0.005	—	329
Architectural Coatings	—	0.32	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1.37	1.37	0.10	0.70	< 0.005	0.01	—	0.01	0.01	—	0.01	—	58.4	58.4	< 0.005	< 0.005	—	58.6

Architect Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.25	0.25	0.02	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.67	9.67	< 0.005	< 0.005	—	9.70
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.01	0.61	0.36	< 0.005	0.01	0.09	0.10	< 0.005	0.02	0.03	—	369	369	0.05	0.06	0.76	389
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.01	0.64	0.37	< 0.005	0.01	0.09	0.10	< 0.005	0.02	0.03	—	369	369	0.05	0.06	0.02	388
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.11	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	65.7	65.7	0.01	0.01	0.06	69.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	10.9	10.9	< 0.005	< 0.005	0.01	11.4

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Total	—	—	—	—	—	—	—	—	—	—	—	—	11.6	11.6	< 0.005	< 0.005	—	11.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94
Total	—	—	—	—	—	—	—	—	—	—	—	—	1.92	1.92	< 0.005	< 0.005	—	1.94

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Total	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.3	27.3	< 0.005	< 0.005	—	27.3
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53
Total	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	4.51	4.51	< 0.005	< 0.005	—	4.53

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.02	0.01	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Total	0.02	0.06	< 0.005	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.36	0.36	< 0.005	< 0.005	—	0.36
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03
Total	< 0.005	0.01	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.03	0.03	< 0.005	< 0.005	—	0.03

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Total	—	—	—	—	—	—	—	—	—	—	—	0.89	1.67	2.56	0.09	< 0.005	—	5.49
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91
Total	—	—	—	—	—	—	—	—	—	—	—	0.15	0.28	0.42	0.02	< 0.005	—	0.91

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Total	—	—	—	—	—	—	—	—	—	—	—	1.34	0.00	1.34	0.13	0.00	—	4.68
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77
Total	—	—	—	—	—	—	—	—	—	—	—	0.22	0.00	0.22	0.02	0.00	—	0.77

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.52	0.52
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.09	0.09

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Total	0.34	0.31	1.38	0.79	< 0.005	0.05	0.00	0.05	0.05	0.00	0.05	0.00	158	158	0.01	< 0.005	0.00	158
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6
Total	0.06	0.06	0.25	0.14	< 0.005	0.01	0.00	0.01	0.01	0.00	0.01	0.00	25.5	25.5	< 0.005	< 0.005	0.00	25.6

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Existing Pump Station Demolition	Demolition	3/1/2026	5/31/2026	5.00	65.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	3/31/2025	5.00	64.0	Pavement Removal for New Pipe

New Pump Station Construction	Building Construction	1/1/2025	3/31/2026	5.00	325	New PS Construction
Paving	Paving	6/1/2025	8/31/2025	5.00	65.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	3/1/2025	5/31/2025	5.00	65.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	4.90	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.40	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	2.00	8.00	0.43
Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	1.30	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	5.00	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.30	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.50	24.0	0.38

Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.50	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.80	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.50	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	5.90	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.50	8.00	0.43
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.00	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	3.50	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	3.50	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	3.50	185	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	3.50	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	4.70	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.00	11.0	0.74

Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	2.10	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.10	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.10	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	10.2	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT
Existing Pump Station Demolition	Hauling	0.68	8.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.38	9.00	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	14.3	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.33	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.47	20.0	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2

Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.34	26.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	10.5	9.22	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)

Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	2,800	4,000	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	25.4	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	3,000	1,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	20,737	204	0.0330	0.0040	85,088

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	462,500	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	2.48	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.
Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.

Lynwood Alt C Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt C
Construction Start Date	1/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	3.40	1000sqft	0.08	3,400	0.00	—	—	New Pump Stations

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	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.	15.9	15.9	4.81	18.7	0.03	0.16	0.36	0.52	0.14	0.09	0.23	—	3,470	3,470	0.23	0.17	2.41	3,529
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	15.8	15.8	3.65	12.9	0.02	0.14	0.29	0.43	0.12	0.07	0.20	—	2,225	2,225	0.15	0.12	0.05	2,266
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.84	3.83	1.94	5.77	0.01	0.07	0.15	0.21	0.06	0.04	0.09	—	1,119	1,119	0.07	0.05	0.38	1,136
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.70	0.70	0.35	1.05	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	185	185	0.01	0.01	0.06	188

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	15.9	15.9	4.81	18.7	0.03	0.16	0.36	0.52	0.14	0.09	0.23	—	3,470	3,470	0.23	0.17	2.41	3,529
2026	0.25	0.21	1.42	1.64	< 0.005	0.05	0.12	0.17	0.05	0.03	0.07	—	373	373	0.02	0.01	0.52	378
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	15.8	15.8	3.65	12.9	0.02	0.14	0.29	0.43	0.12	0.07	0.20	—	2,225	2,225	0.15	0.12	0.05	2,266
2026	0.49	0.40	2.90	5.06	0.01	0.10	0.16	0.27	0.10	0.04	0.13	—	902	902	0.04	0.02	0.01	909
2027	0.48	0.40	2.86	5.02	0.01	0.10	0.16	0.26	0.09	0.04	0.13	—	899	899	0.04	0.02	0.01	906
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	3.84	3.83	1.94	5.77	0.01	0.07	0.15	0.21	0.06	0.04	0.09	—	1,119	1,119	0.07	0.05	0.38	1,136
2026	0.19	0.16	1.11	1.33	< 0.005	0.04	0.09	0.13	0.04	0.02	0.06	—	294	294	0.01	0.01	0.16	297
2027	0.07	0.06	0.42	0.67	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	126	126	0.01	< 0.005	0.04	127
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.70	0.70	0.35	1.05	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	185	185	0.01	0.01	0.06	188
2026	0.04	0.03	0.20	0.24	< 0.005	0.01	0.02	0.02	0.01	< 0.005	0.01	—	48.7	48.7	< 0.005	< 0.005	0.03	49.2
2027	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.01	21.0

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	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.	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.66	0.60	2.70	1.54	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	308	308	0.01	< 0.005	0.00	309
Total	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Stationary	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

3. Construction Emissions Details

3.1. Existing Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.42	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.15	5.15	< 0.005	< 0.005	—	5.17
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	< 0.005	24.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Existing Pump Station Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.41	3.44	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	< 0.005	24.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

3.5. Pavement Removal (2025) - 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	0.06	0.06	0.29	4.11	0.01	0.01	—	0.01	0.01	—	0.01	—	760	760	0.03	0.01	—	763
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.06	0.29	4.11	0.01	0.01	—	0.01	0.01	—	0.01	—	760	760	0.03	0.01	—	763

Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.09	1.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	225	225	0.01	< 0.005	—	226
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.22	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	37.2	37.2	< 0.005	< 0.005	—	37.4
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	< 0.005	0.16	0.09	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	97.1	97.1	0.01	0.02	0.20	102
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	< 0.005	0.17	0.09	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	97.1	97.1	0.01	0.02	0.01	102
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.7	28.7	< 0.005	< 0.005	0.03	30.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.76	4.76	< 0.005	< 0.005	< 0.005	5.00

3.7. New Pump Station Construction (2025) - 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	0.20	0.17	1.36	1.12	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.36	1.12	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.12	0.97	0.80	< 0.005	0.04	—	0.04	0.03	—	0.03	—	155	155	0.01	< 0.005	—	155
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25.6	25.6	< 0.005	< 0.005	—	25.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.53	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	117	117	< 0.005	< 0.005	0.47	119
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	0.02	9.71
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.6	33.6	< 0.005	0.01	0.07	35.4
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.04	0.48	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	109	109	< 0.005	< 0.005	0.01	110
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.29	9.29	< 0.005	< 0.005	< 0.005	9.69
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	33.6	33.6	< 0.005	0.01	< 0.005	35.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.33	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	78.1	78.1	< 0.005	< 0.005	0.15	79.3
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.63	6.63	< 0.005	< 0.005	0.01	6.93
Hauling	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	24.0	24.0	< 0.005	< 0.005	0.02	25.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.02	13.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.10	1.10	< 0.005	< 0.005	< 0.005	1.15
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.97	3.97	< 0.005	< 0.005	< 0.005	4.18

3.9. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.34	1.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.34	1.11	< 0.005	0.05	—	0.05	0.05	—	0.05	—	217	217	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.12	0.95	0.79	< 0.005	0.04	—	0.04	0.03	—	0.03	—	155	155	0.01	< 0.005	—	155
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	0.17	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	25.6	25.6	< 0.005	< 0.005	—	25.7

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.05	0.03	0.49	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	115	115	< 0.005	< 0.005	0.43	116
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.11	9.11	< 0.005	< 0.005	0.02	9.54
Hauling	0.01	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.9	32.9	< 0.005	0.01	0.07	34.7
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.44	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	107	107	< 0.005	< 0.005	0.01	108
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.12	9.12	< 0.005	< 0.005	< 0.005	9.52
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.9	32.9	< 0.005	0.01	< 0.005	34.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.30	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	76.6	76.6	< 0.005	< 0.005	0.13	77.8
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	6.51	6.51	< 0.005	< 0.005	0.01	6.80
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.5	23.5	< 0.005	< 0.005	0.02	24.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.08	1.08	< 0.005	< 0.005	< 0.005	1.13
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.89	3.89	< 0.005	< 0.005	< 0.005	4.10

3.11. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.16	1.32	1.11	< 0.005	0.05	—	0.05	0.04	—	0.04	—	217	217	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.03	0.23	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	38.2	38.2	< 0.005	< 0.005	—	38.3
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	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.32	6.32	< 0.005	< 0.005	—	6.34
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	0.04	0.04	0.03	0.41	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	105	105	< 0.005	< 0.005	0.01	106
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.92	8.92	< 0.005	< 0.005	< 0.005	9.32
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	32.2	32.2	< 0.005	0.01	< 0.005	33.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	18.6	18.6	< 0.005	< 0.005	0.03	18.8
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.57	1.57	< 0.005	< 0.005	< 0.005	1.64
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.66	5.66	< 0.005	< 0.005	< 0.005	5.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.07	3.07	< 0.005	< 0.005	< 0.005	3.12
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	< 0.005	0.27
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.94	0.94	< 0.005	< 0.005	< 0.005	0.99

3.13. Paving (2025) - 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	0.10	0.10	0.86	5.62	0.01	0.02	—	0.02	0.02	—	0.02	—	985	985	0.04	0.01	—	988
Paving	—	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	0.26	1.68	< 0.005	0.01	—	0.01	0.01	—	0.01	—	294	294	0.01	< 0.005	—	295
Paving	—	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	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	48.7	48.7	< 0.005	< 0.005	—	48.9
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.01	0.36	0.21	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	252	252	0.03	0.04	0.53	265
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.11	0.06	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.2	75.2	0.01	0.01	0.07	79.1
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.5	12.5	< 0.005	< 0.005	0.01	13.1

3.15. Trench Excavation and Pipe Construction (2025) - 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	15.3	15.3	0.81	6.51	< 0.005	0.07	—	0.07	0.06	—	0.06	—	460	460	0.02	< 0.005	—	461
Architectural Coatings	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	15.3	15.3	0.81	6.51	< 0.005	0.07	—	0.07	0.06	—	0.06	—	460	460	0.02	< 0.005	—	461
Architectural Coatings	—	0.25	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	3.57	3.56	0.19	1.52	< 0.005	0.02	—	0.02	0.01	—	0.01	—	107	107	< 0.005	< 0.005	—	107
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.65	0.65	0.03	0.28	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	17.7	17.7	< 0.005	< 0.005	—	17.8
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.09	0.02	0.88	0.52	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	540	540	0.07	0.09	1.11	568
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.09	0.02	0.93	0.53	< 0.005	0.01	0.13	0.14	0.01	0.04	0.04	—	540	540	0.07	0.09	0.03	567
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	< 0.005	0.21	0.12	< 0.005	< 0.005	0.03	0.03	< 0.005	0.01	0.01	—	126	126	0.02	0.02	0.11	132
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	20.8	20.8	< 0.005	< 0.005	0.02	21.9

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5

Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Total	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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
Existing Pump Station Demolition	Demolition	12/1/2026	2/28/2027	5.00	64.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	5/31/2025	5.00	108	Pavement Removal for New Pipe
New Pump Station Construction	Building Construction	1/1/2025	3/31/2027	5.00	586	New PS Construction
Paving	Paving	5/1/2025	9/30/2025	5.00	109	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	5/31/2025	5.00	85.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40

Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	5.80	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.20	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	0.60	8.00	0.43
Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	0.70	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	4.80	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.10	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	10.2	24.0	0.38
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	10.2	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.90	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.70	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	6.50	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.70	8.00	0.43

New Pump Station Construction	Pumps	Diesel	Average	1.00	2.30	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	3.80	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	3.80	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.60	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	6.50	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	7.10	11.0	0.74
Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	4.20	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	4.20	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	4.20	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	0.00	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT

Existing Pump Station Demolition	Hauling	0.69	9.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.56	10.0	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	13.5	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.33	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.42	21.6	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.53	27.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	14.5	9.78	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)
Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	5,100	7,100	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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

2025	50.7	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,100	1,700	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	35,252	204	0.0330	0.0040	144,649

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	786,250	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	4.22	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.
Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.
Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.
Operations: Emergency Generators and Fire Pumps	Assumed one generator at each site.

Lynwood Alt D Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt D
Construction Start Date	1/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	3.40	1000sqft	0.08	3,400	0.00	—	—	New Pump Stations

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.8	10.9	4.50	16.3	0.03	0.14	0.32	0.47	0.13	0.08	0.21	—	3,175	3,175	0.21	0.16	2.20	3,228
2026	0.26	0.22	1.45	1.63	< 0.005	0.05	0.11	0.17	0.05	0.03	0.07	—	367	367	0.02	0.01	0.48	371
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.6	10.8	3.26	10.1	0.02	0.12	0.25	0.37	0.10	0.06	0.17	—	1,858	1,858	0.13	0.10	0.04	1,892
2026	0.49	0.41	2.93	5.05	0.01	0.11	0.15	0.26	0.10	0.03	0.13	—	896	896	0.04	0.02	0.01	903
2027	0.48	0.40	2.89	5.02	0.01	0.10	0.15	0.25	0.09	0.03	0.13	—	893	893	0.04	0.02	0.01	899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.01	2.01	1.62	3.92	0.01	0.05	0.12	0.17	0.05	0.03	0.08	—	793	793	0.05	0.03	0.29	804
2026	0.20	0.16	1.13	1.33	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	290	290	0.01	0.01	0.15	293
2027	0.07	0.06	0.42	0.67	< 0.005	0.01	0.02	0.04	0.01	0.01	0.02	—	125	125	0.01	< 0.005	0.04	126
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.37	0.37	0.30	0.71	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	131	131	0.01	0.01	0.05	133
2026	0.04	0.03	0.21	0.24	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	47.9	47.9	< 0.005	< 0.005	0.02	48.5

2027	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	20.7	20.7	< 0.005	< 0.005	0.01	20.8

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.66	0.60	2.70	1.54	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	308	308	0.01	< 0.005	0.00	309
Total	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Stationary	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

3. Construction Emissions Details

3.1. Existing Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.42	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.15	5.15	< 0.005	< 0.005	—	5.17
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	< 0.005	24.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Existing Pump Station Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.41	3.44	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	< 0.005	24.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

3.5. Pavement Removal (2025) - 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	0.04	0.04	0.23	3.22	0.01	0.01	—	0.01	0.01	—	0.01	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.04	0.23	3.22	0.01	0.01	—	0.01	0.01	—	0.01	—	596	596	0.02	< 0.005	—	598
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.76	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	140	140	0.01	< 0.005	—	141

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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.14	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	23.3	23.3	< 0.005	< 0.005	—	23.3
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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.12	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.8	75.8	0.01	0.01	0.16	79.8
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.9	75.9	0.01	0.01	< 0.005	79.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.9	17.9	< 0.005	< 0.005	0.02	18.8

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.96	2.96	< 0.005	< 0.005	< 0.005	3.11

3.7. New Pump Station Construction (2025) - 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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	1.00	0.82	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3

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	0.05	0.05	0.03	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	109	109	< 0.005	< 0.005	0.44	111
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	0.02	7.95
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	0.06	32.3
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.45	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	102	102	< 0.005	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	< 0.005	7.93
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	< 0.005	32.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	73.1	73.1	< 0.005	< 0.005	0.14	74.2
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.43	5.43	< 0.005	< 0.005	0.01	5.67
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.02	23.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.02	12.3
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.94
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	< 0.005	3.81

3.9. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	0.98	0.81	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3
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	0.04	0.04	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	107	107	< 0.005	< 0.005	0.40	109
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	0.02	7.80
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	0.06	31.6

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	100.0	100.0	< 0.005	< 0.005	0.01	101
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	< 0.005	7.79
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	< 0.005	31.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.29	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.7	71.7	< 0.005	< 0.005	0.12	72.8
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.33	5.33	< 0.005	< 0.005	0.01	5.57
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.9	11.9	< 0.005	< 0.005	0.02	12.1
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.92
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.73

3.11. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.36	1.13	< 0.005	0.05	—	0.05	0.04	—	0.04	—	222	222	0.01	< 0.005	—	223
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	0.03	0.24	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
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	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.47	6.47	< 0.005	< 0.005	—	6.49
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	0.04	0.04	0.03	0.39	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	98.2	98.2	< 0.005	< 0.005	0.01	99.5
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	< 0.005	7.63
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.3	29.3	< 0.005	< 0.005	< 0.005	30.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.4	17.4	< 0.005	< 0.005	0.03	17.6
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.34
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.87	2.87	< 0.005	< 0.005	< 0.005	2.92
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.90

3.13. Paving (2025) - 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	0.10	0.10	0.91	5.91	0.01	0.02	—	0.02	0.02	—	0.02	—	1,037	1,037	0.04	0.01	—	1,040
Paving	—	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	0.16	1.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	185	185	0.01	< 0.005	—	185
Paving	—	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	0.03	0.19	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.6	30.6	< 0.005	< 0.005	—	30.7
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.01	0.39	0.22	< 0.005	< 0.005	0.07	0.08	< 0.005	0.02	0.02	—	273	273	0.03	0.04	0.58	288
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	48.7	48.7	0.01	0.01	0.04	51.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	8.06	8.06	< 0.005	< 0.005	0.01	8.48

3.15. Trench Excavation and Pipe Construction (2025) - 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	10.2	10.2	0.64	4.77	< 0.005	0.05	—	0.05	0.04	—	0.04	—	371	371	0.02	< 0.005	—	372
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	10.2	10.2	0.64	4.77	< 0.005	0.05	—	0.05	0.04	—	0.04	—	371	371	0.02	< 0.005	—	372
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1.77	1.76	0.11	0.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	64.0	64.0	< 0.005	< 0.005	—	64.2
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.32	0.32	0.02	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.6	10.6	< 0.005	< 0.005	—	10.6
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.02	0.74	0.44	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	453	453	0.06	0.07	0.93	476

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.78	0.44	< 0.005	0.01	0.11	0.12	0.01	0.03	0.04	—	453	453	0.06	0.07	0.02	476
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.08	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	78.1	78.1	0.01	0.01	0.07	82.2
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.9	12.9	< 0.005	< 0.005	0.01	13.6

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9

Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landsca Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Total	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Emergency Generato	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Existing Pump Station Demolition	Demolition	12/1/2026	2/28/2027	5.00	64.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	4/30/2025	5.00	86.0	Pavement Removal for New Pipe
New Pump Station Construction	Building Construction	1/1/2025	3/31/2027	5.00	586	New PS Construction
Paving	Paving	4/1/2025	6/30/2025	5.00	65.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	4/30/2025	5.00	63.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	5.80	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.20	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	0.60	8.00	0.43

Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	0.70	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	4.80	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.10	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	8.00	24.0	0.38
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	8.00	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.90	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.70	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	6.90	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.70	8.00	0.43
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.30	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37

Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	4.00	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	4.00	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	8.00	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	5.30	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.60	11.0	0.74
Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	2.80	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.80	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.80	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	0.00	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT
Existing Pump Station Demolition	Hauling	0.69	9.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.00	10.0	HHDT
Pavement Removal	Onsite truck	—	—	HHDT

New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	12.7	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.27	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.40	20.7	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.65	28.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	12.2	9.78	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)
Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	3,200	4,600	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	33.8	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year

General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,100	1,700	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	35,252	204	0.0330	0.0040	144,649

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	786,250	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	4.22	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.

Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.
Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.
Operations: Emergency Generators and Fire Pumps	Assumed one generator at each site

Lynwood Alt E Custom Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lynwood Alt E
Construction Start Date	1/1/2025
Operational Year	2027
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.60
Precipitation (days)	39.4
Location	38.06871769733715, -122.54995998861456
County	Marin
City	Novato
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	913
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

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	3.40	1000sqft	0.08	3,400	0.00	—	—	New Pump Stations

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.7	10.9	3.97	12.3	0.02	0.13	0.28	0.41	0.11	0.07	0.19	—	2,326	2,326	0.16	0.13	1.92	2,370
2026	0.26	0.22	1.45	1.63	< 0.005	0.05	0.11	0.17	0.05	0.03	0.07	—	366	366	0.02	0.01	0.48	370
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	10.6	10.8	3.25	10.7	0.02	0.12	0.25	0.37	0.11	0.06	0.17	—	1,944	1,944	0.13	0.10	0.04	1,978
2026	0.49	0.41	2.93	5.05	0.01	0.11	0.15	0.26	0.10	0.03	0.13	—	895	895	0.04	0.02	0.01	902
2027	0.48	0.40	2.89	5.01	0.01	0.10	0.15	0.25	0.09	0.03	0.13	—	892	892	0.04	0.02	0.01	899
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.00	2.00	1.58	3.71	0.01	0.05	0.11	0.17	0.05	0.03	0.08	—	744	744	0.04	0.03	0.28	755
2026	0.20	0.16	1.13	1.33	< 0.005	0.04	0.08	0.12	0.04	0.02	0.06	—	289	289	0.01	0.01	0.15	292
2027	0.07	0.06	0.42	0.67	< 0.005	0.01	0.02	0.04	0.01	0.01	0.02	—	125	125	0.01	< 0.005	0.04	126
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.36	0.37	0.29	0.68	< 0.005	0.01	0.02	0.03	0.01	0.01	0.01	—	123	123	0.01	0.01	0.05	125
2026	0.04	0.03	0.21	0.24	< 0.005	0.01	0.01	0.02	0.01	< 0.005	0.01	—	47.9	47.9	< 0.005	< 0.005	0.02	48.4

2027	0.01	0.01	0.08	0.12	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	20.6	20.6	< 0.005	< 0.005	0.01	20.8

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.71	0.73	2.80	1.75	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	385	389	0.40	0.01	0.89	401
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.70	2.79	1.60	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	384	388	0.40	0.01	0.89	401

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.01	0.09	< 0.005	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.30	0.30	< 0.005	< 0.005	—	0.30
Energy	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	66.1	66.1	0.01	< 0.005	—	66.4
Water	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Waste	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Stationary	0.66	0.60	2.70	1.54	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	308	308	0.01	< 0.005	0.00	309
Total	0.68	0.70	2.74	1.64	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	3.78	378	381	0.40	0.01	0.89	394
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Energy	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.9	10.9	< 0.005	< 0.005	—	11.0
Water	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Waste	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Stationary	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.13	0.50	0.30	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.63	62.5	63.1	0.07	< 0.005	0.15	65.3

3. Construction Emissions Details

3.1. Existing Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.20	1.42	3.45	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.09	0.21	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.02	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	5.15	5.15	< 0.005	< 0.005	—	5.17
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.6	23.6	< 0.005	< 0.005	< 0.005	24.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.43	1.43	< 0.005	< 0.005	< 0.005	1.51
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.24	0.24	< 0.005	< 0.005	< 0.005	0.25

3.3. Existing Pump Station Demolition (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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	0.19	1.41	3.44	0.01	0.05	—	0.05	0.05	—	0.05	—	513	513	0.02	< 0.005	—	514
Demolition	—	—	—	—	—	—	0.03	0.03	—	< 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

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.16	0.40	< 0.005	0.01	—	0.01	0.01	—	0.01	—	59.2	59.2	< 0.005	< 0.005	—	59.4
Demolition	—	—	—	—	—	—	< 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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.03	0.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.80	9.80	< 0.005	< 0.005	—	9.83
Demolition	—	—	—	—	—	—	< 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	23.1	23.1	< 0.005	< 0.005	< 0.005	24.3
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.67	2.67	< 0.005	< 0.005	< 0.005	2.80
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.44	0.44	< 0.005	< 0.005	< 0.005	0.46

3.5. Pavement Removal (2025) - 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	0.05	0.05	0.28	3.95	0.01	0.01	—	0.01	0.01	—	0.01	—	730	730	0.03	0.01	—	733
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.05	0.69	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	128	128	0.01	< 0.005	—	128
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	< 0.005	0.01	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	21.2	21.2	< 0.005	< 0.005	—	21.3
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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	75.9	75.9	0.01	0.01	< 0.005	79.7
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	13.3	13.3	< 0.005	< 0.005	0.01	14.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.20	2.20	< 0.005	< 0.005	< 0.005	2.32

3.7. New Pump Station Construction (2025) - 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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.40	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	1.00	0.82	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3
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	0.05	0.05	0.03	0.49	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	109	109	< 0.005	< 0.005	0.44	110
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	0.02	7.95
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	0.06	32.3

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.04	0.44	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	101	101	< 0.005	< 0.005	0.01	103
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.60	7.60	< 0.005	< 0.005	< 0.005	7.93
Hauling	< 0.005	< 0.005	0.05	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.6	30.6	< 0.005	< 0.005	< 0.005	32.2
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.03	0.31	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	72.6	72.6	< 0.005	< 0.005	0.14	73.7
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.43	5.43	< 0.005	< 0.005	0.01	5.67
Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.9	21.9	< 0.005	< 0.005	0.02	23.0
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.0	12.0	< 0.005	< 0.005	0.02	12.2
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.90	0.90	< 0.005	< 0.005	< 0.005	0.94
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.62	3.62	< 0.005	< 0.005	< 0.005	3.81

3.9. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.21	0.17	1.37	1.14	< 0.005	0.05	—	0.05	0.05	—	0.05	—	222	222	0.01	< 0.005	—	223
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	0.15	0.12	0.98	0.81	< 0.005	0.04	—	0.04	0.03	—	0.03	—	159	159	0.01	< 0.005	—	159
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	0.18	0.15	< 0.005	0.01	—	0.01	0.01	—	0.01	—	26.2	26.2	< 0.005	< 0.005	—	26.3
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	0.04	0.04	0.03	0.46	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	107	107	< 0.005	< 0.005	0.40	108
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	0.02	7.80
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	0.06	31.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.04	0.04	0.04	0.41	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	99.3	99.3	< 0.005	< 0.005	0.01	101
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.46	7.46	< 0.005	< 0.005	< 0.005	7.79
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.0	30.0	< 0.005	< 0.005	< 0.005	31.6
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.28	0.00	0.00	0.07	0.07	0.00	0.02	0.02	—	71.3	71.3	< 0.005	< 0.005	0.12	72.4
Vendor	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.33	5.33	< 0.005	< 0.005	0.01	5.57

Hauling	< 0.005	< 0.005	0.03	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	21.4	21.4	< 0.005	< 0.005	0.02	22.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	11.8	11.8	< 0.005	< 0.005	0.02	12.0
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.88	0.88	< 0.005	< 0.005	< 0.005	0.92
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.55	3.55	< 0.005	< 0.005	< 0.005	3.73

3.11. New Pump Station 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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.20	0.17	1.36	1.13	< 0.005	0.05	—	0.05	0.04	—	0.04	—	222	222	0.01	< 0.005	—	223
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	0.03	0.24	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	39.1	39.1	< 0.005	< 0.005	—	39.2
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	0.04	0.04	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.47	6.47	< 0.005	< 0.005	—	6.49
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	0.04	0.04	0.03	0.38	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	97.5	97.5	< 0.005	< 0.005	0.01	98.9
Vendor	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	< 0.005	7.63
Hauling	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.3	29.3	< 0.005	< 0.005	< 0.005	30.8
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.07	0.00	0.00	0.02	0.02	0.00	< 0.005	< 0.005	—	17.2	17.2	< 0.005	< 0.005	0.03	17.5
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.29	1.29	< 0.005	< 0.005	< 0.005	1.34
Hauling	< 0.005	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.16	5.16	< 0.005	< 0.005	< 0.005	5.43
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.86	2.86	< 0.005	< 0.005	< 0.005	2.90
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.21	0.21	< 0.005	< 0.005	< 0.005	0.22
Hauling	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.86	0.86	< 0.005	< 0.005	< 0.005	0.90

3.13. Paving (2025) - 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	0.09	0.09	0.82	5.32	0.01	0.02	—	0.02	0.02	—	0.02	—	933	933	0.04	0.01	—	936
Paving	—	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	0.15	0.95	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	166	166	0.01	< 0.005	—	167
Paving	—	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	0.03	0.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	27.5	27.5	< 0.005	< 0.005	—	27.6
Paving	—	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.04	0.01	0.35	0.20	< 0.005	< 0.005	0.06	0.07	< 0.005	0.02	0.02	—	248	248	0.03	0.04	0.53	261
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.06	0.04	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	44.1	44.1	0.01	0.01	0.04	46.4
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	7.30	7.30	< 0.005	< 0.005	0.01	7.68

3.15. Trench Excavation and Pipe Construction (2025) - 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	10.2	10.2	0.63	4.65	< 0.005	0.05	—	0.05	0.04	—	0.04	—	354	354	0.01	< 0.005	—	355
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	10.2	10.2	0.63	4.65	< 0.005	0.05	—	0.05	0.04	—	0.04	—	354	354	0.01	< 0.005	—	355
Architectural Coatings	—	0.33	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	1.77	1.76	0.11	0.80	< 0.005	0.01	—	0.01	0.01	—	0.01	—	61.0	61.0	< 0.005	< 0.005	—	61.2
Architectural Coatings	—	0.06	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
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	0.32	0.32	0.02	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	10.1	10.1	< 0.005	< 0.005	—	10.1
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	0.01	0.69	0.41	< 0.005	0.01	0.11	0.11	< 0.005	0.03	0.03	—	423	423	0.06	0.07	0.87	446
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.07	0.01	0.73	0.42	< 0.005	0.01	0.11	0.11	0.01	0.03	0.03	—	423	423	0.06	0.07	0.02	445
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	0.12	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	< 0.005	0.01	—	73.1	73.1	0.01	0.01	0.06	76.8
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
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	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	12.1	12.1	< 0.005	< 0.005	0.01	12.7

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Total	—	—	—	—	—	—	—	—	—	—	—	—	19.7	19.7	< 0.005	< 0.005	—	19.9
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	3.26	3.26	< 0.005	< 0.005	—	3.29

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Total	< 0.005	< 0.005	0.04	0.03	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	46.4	46.4	< 0.005	< 0.005	—	46.5
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70
Total	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.68	7.68	< 0.005	< 0.005	—	7.70

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	0.02	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Total	0.03	0.11	< 0.005	0.15	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.61	0.61	< 0.005	< 0.005	—	0.61
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	< 0.005	< 0.005	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05
Total	< 0.005	0.02	< 0.005	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	0.05	0.05	< 0.005	< 0.005	—	0.05

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Total	—	—	—	—	—	—	—	—	—	—	—	1.51	2.85	4.35	0.15	< 0.005	—	9.34
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55
Total	—	—	—	—	—	—	—	—	—	—	—	0.25	0.47	0.72	0.03	< 0.005	—	1.55

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

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

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Total	—	—	—	—	—	—	—	—	—	—	—	2.27	0.00	2.27	0.23	0.00	—	7.95
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32
Total	—	—	—	—	—	—	—	—	—	—	—	0.38	0.00	0.38	0.04	0.00	—	1.32

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.89	0.89
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.15	0.15

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Total	0.68	0.62	2.76	1.57	< 0.005	0.09	0.00	0.09	0.09	0.00	0.09	0.00	315	315	0.01	< 0.005	0.00	316
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2
Total	0.12	0.11	0.49	0.28	< 0.005	0.02	0.00	0.02	0.02	0.00	0.02	0.00	51.1	51.1	< 0.005	< 0.005	0.00	51.2

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	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. 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	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Existing Pump Station Demolition	Demolition	12/1/2026	2/28/2027	5.00	64.0	Existing PS Demolition
Pavement Removal	Site Preparation	1/1/2025	3/31/2025	5.00	64.0	Pavement Removal for New Pipe

New Pump Station Construction	Building Construction	1/1/2025	3/31/2027	5.00	586	New PS Construction
Paving	Paving	4/1/2025	6/30/2025	5.00	65.0	Asphalt Pavement of Road
Trench Excavation and Pipe Construction	Trenching	2/1/2025	4/30/2025	5.00	63.0	Excavation and Pipe Construction

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
Existing Pump Station Demolition	Tractors/Loaders/Backhoes	Diesel	Average	0.00	6.00	84.0	0.37
Existing Pump Station Demolition	Rubber Tired Dozers	Diesel	Average	0.00	1.00	367	0.40
Existing Pump Station Demolition	Concrete/Industrial Saws	Diesel	Average	0.00	8.00	33.0	0.73
Existing Pump Station Demolition	Excavators	Diesel	Tier 4 Final	1.00	5.80	130	0.38
Existing Pump Station Demolition	Air Compressors	Diesel	Average	1.00	2.20	37.0	0.48
Existing Pump Station Demolition	Plate Compactors	Diesel	Average	1.00	0.60	8.00	0.43
Existing Pump Station Demolition	Forklifts	Diesel	Average	1.00	0.70	82.0	0.20
Existing Pump Station Demolition	Generator Sets	Diesel	Average	1.00	4.80	14.0	0.74
Existing Pump Station Demolition	Pumps	Diesel	Average	1.00	5.10	11.0	0.74
Pavement Removal	Graders	Diesel	Average	0.00	8.00	148	0.41
Pavement Removal	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.80	24.0	0.38

Pavement Removal	Excavators	Diesel	Tier 4 Final	1.00	9.80	130	0.38
New Pump Station Construction	Cranes	Diesel	Average	0.00	4.00	367	0.29
New Pump Station Construction	Forklifts	Diesel	Average	1.00	1.00	82.0	0.20
New Pump Station Construction	Tractors/Loaders/Backhoes	Diesel	Average	0.00	8.00	84.0	0.37
New Pump Station Construction	Air Compressors	Diesel	Average	1.00	0.90	37.0	0.48
New Pump Station Construction	Dumpers/Tenders	Diesel	Average	1.00	1.70	16.0	0.38
New Pump Station Construction	Generator Sets	Diesel	Average	1.00	6.90	14.0	0.74
New Pump Station Construction	Plate Compactors	Diesel	Average	1.00	1.70	8.00	0.43
New Pump Station Construction	Pumps	Diesel	Average	1.00	2.30	11.0	0.74
New Pump Station Construction	Aerial Lifts	Diesel	Average	1.00	1.00	46.0	0.31
New Pump Station Construction	Off-Highway Trucks	Diesel	Average	1.00	0.20	350	0.38
Paving	Tractors/Loaders/Backhoes	Diesel	Average	0.00	7.00	84.0	0.37
Paving	Cement and Mortar Mixers	Diesel	Average	0.00	6.00	10.0	0.56
Paving	Pavers	Diesel	Tier 4 Final	1.00	3.60	148	0.42
Paving	Rollers	Diesel	Tier 4 Final	1.00	3.60	48.0	0.38
Paving	Off-Highway Trucks	Diesel	Tier 4 Final	1.00	7.20	185	0.38
Trench Excavation and Pipe Construction	Excavators	Diesel	Tier 4 Final	1.00	5.00	130	0.38
Trench Excavation and Pipe Construction	Pumps	Diesel	Average	1.00	5.60	11.0	0.74

Trench Excavation and Pipe Construction	Welders	Electric	Average	1.00	2.80	36.0	0.45
Trench Excavation and Pipe Construction	Plate Compactors	Diesel	Tier 4 Final	1.00	2.80	3.00	0.43
Trench Excavation and Pipe Construction	Plate Compactors	Gasoline	Average	1.00	2.80	3.00	0.55

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Existing Pump Station Demolition	—	—	—	—
Existing Pump Station Demolition	Worker	0.00	11.7	LDA,LDT1,LDT2
Existing Pump Station Demolition	Vendor	—	8.40	HHDT,MHDT
Existing Pump Station Demolition	Hauling	0.69	9.18	HHDT
Existing Pump Station Demolition	Onsite truck	—	—	HHDT
Pavement Removal	—	—	—	—
Pavement Removal	Worker	0.00	11.7	LDA,LDT1,LDT2
Pavement Removal	Vendor	0.00	8.40	HHDT,MHDT
Pavement Removal	Hauling	2.00	10.0	HHDT
Pavement Removal	Onsite truck	—	—	HHDT
New Pump Station Construction	—	—	—	—
New Pump Station Construction	Worker	12.6	11.7	LDA,LDT1,LDT2
New Pump Station Construction	Vendor	0.27	8.40	HHDT,MHDT
New Pump Station Construction	Hauling	0.40	20.7	HHDT
New Pump Station Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	0.00	11.7	LDA,LDT1,LDT2

Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	2.40	28.0	HHDT
Paving	Onsite truck	—	—	HHDT
Trench Excavation and Pipe Construction	—	—	—	—
Trench Excavation and Pipe Construction	Worker	0.00	11.7	LDA,LDT1,LDT2
Trench Excavation and Pipe Construction	Vendor	—	8.40	HHDT,MHDT
Trench Excavation and Pipe Construction	Hauling	11.4	9.78	HHDT
Trench Excavation and Pipe Construction	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)
Trench Excavation and Pipe Construction	0.00	0.00	3,000	1,000	—

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 (Building Square Footage)	Acres Paved (acres)

Existing Pump Station Demolition	0.00	0.00	0.00	2,000	—
Pavement Removal	2,900	4,300	0.00	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
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
2025	33.8	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
General Light Industry	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	5,100	1,700	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
General Light Industry	35,252	204	0.0330	0.0040	144,649

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
General Light Industry	786,250	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
General Light Industry	4.22	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	2.00	0.14	50.0	1,341	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	Information provided by the District.
Construction: Off-Road Equipment	Project-specific construction equipment list was provided by the District.
Construction: Trips and VMT	Construction trips were provided by the District. Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Operations: Vehicle Data	This project size is below BAAQMD screening criteria. Operation emissions are only estimated for the emergency generator.
Operations: Emergency Generators and Fire Pumps	Assume one generator at each site.

Alt A_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026					Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Existing Pump Station Removal																							
Excavators	Excavators	Diesel	130	Tier 4															96	176	44	65	4.9
Air Compressors	Air Compressors	Diesel	37	Average															88	44	22		2.4
Plate Compactors	Plate Compactors	Diesel	8	Average															42	44	44		2.0
Forklifts	Forklifts	Diesel	82	Average															42	44			1.3
Generator Sets	Generator Sets	Diesel	14	Average															126	132	66		5.0
Pumps	Pumps	Diesel	11	Average															168	176			5.3
Pavement Removal For new pipe																							
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	128																43	3.3
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	128																	3.3
Trench Excavation and Pipe Construction																							
Bigger Excavator	Excavators	Diesel	130	Tier 4		21	40	11														63	1.1
Pumps for Dewatering	Pumps	Diesel	11	Average		48	168	128															5.5
Welding Machine	Welders	Electric	36	N/A			168	128															4.7
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			84	64															2.3
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			84	64															2.3
Asphalt Pavement of Road																							
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4				42	24													44	1.5
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4				42	24														1.5
Asphalt Paver	Pavers	Diesel	148	Tier 4				42	24														1.5
Tandem Roller	Rollers	Diesel	48	Tier 4				42	24														1.5
New Pump Station Construction																							
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21										325	0.8
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132															1.5
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132															1.5
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2				1.0
Aerial Lifts	Aerial Lifts	Diesel	46	Average						40	44	42	42	44	36	44	20	19	2				1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	120	114	12				5.9
Pumps	Pumps	Diesel	11	Average	168	152	168	176															2.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					72														0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt B_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026					Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May		
Existing Pump Station Removal																							
Excavators	Excavators	Diesel	130	Tier 4															96	176	44	65	4.9
Air Compressors	Air Compressors	Diesel	37	Average															88	44	22		2.4
Plate Compactors	Plate Compactors	Diesel	8	Average															42	44	44		2.0
Forklifts	Forklifts	Diesel	82	Average															42	44			1.3
Generator Sets	Generator Sets	Diesel	14	Average															126	132	66		5.0
Pumps	Pumps	Diesel	11	Average															168	176			5.3
Pavement Removal For new pipe																							
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	288															64	9.5
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	288																9.5
Trench Excavation and Pipe Construction																							
Bigger Excavator	Excavators	Diesel	130	Tier 4			52	163	89													65	4.7
Pumps for Dewatering	Pumps	Diesel	11	Average			56	176	96														5.0
Welding Machine	Welders	Electric	36	N/A				88	48														2.1
Trench Compactor	Plate Compactors	Diesel	3	Tier 4				88	48														2.1
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average				88	48														2.1
Asphalt Pavement of Road																							
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4						12	132	84										65	3.5
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4						12	132	84											3.5
Asphalt Paver	Pavers	Diesel	148	Tier 4						12	132	84											3.5
Tandem Roller	Rollers	Diesel	48	Tier 4						12	132	84											3.5
New Pump Station Construction																							
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21										325	0.8
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132															1.5
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2				1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	120	114	12				5.9
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132															1.5
Pumps	Pumps	Diesel	11	Average	168	152	168	176															2.0
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2				1.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					56														0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt C_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026												2027			Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
Existing Pump Station Removal																																	
Excavators	Excavators	Diesel	130	Tier 4																							176	152	40		64	5.8
Air Compressors	Air Compressors	Diesel	37	Average																							88	38	20			2.3
Plate Compactors	Plate Compactors	Diesel	8	Average																									40			0.6
Forklifts	Forklifts	Diesel	82	Average																							44					0.7
Generator Sets	Generator Sets	Diesel	14	Average																							132	114	60			4.8
Pumps	Pumps	Diesel	11	Average																							176	152				5.1
Pavement Removal For new pipe																																	
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	336	352	96																						108	10.2
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	336	352	96																							10.2
Trench Excavation and Pipe Construction																																	
Bigger Excavator	Excavators	Diesel	130	Tier 4		120	168	176	88																						85	6.5
Pumps for Dewatering	Pumps	Diesel	11	Average		120	168	176	136																							7.1
Welding Machine	Welders	Electric	36	N/A			126	132	102																							4.2
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			126	132	102																							4.2
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			126	132	102																							4.2
Asphalt Pavement of Road																																	
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4					30	120	132	126	6																		109	3.8
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4					30	120	132	126	6																			3.8
Asphalt Paver	Pavers	Diesel	148	Tier 4					30	120	132	126	6																			3.8
Tandem Roller	Rollers	Diesel	48	Tier 4					30	120	132	126	6																			3.8
New Pump Station Construction																																	
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21					40	38	44	44	20	21	22	21								0.9
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132									120	114	132	132												1.7
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	280	266	28	176	120	126	132	126	126	126	114	132	114	114	138		6.5
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132									120	114	132	132												586	1.7
Pumps	Pumps	Diesel	11	Average	168	152	168	176									160	152	176	176													2.3
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					48												40												0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt D_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026												2027			Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
Existing Pump Station Removal																																	
Excavators	Excavators	Diesel	130	Tier 4																							176	152	40		64	5.8
Air Compressors	Air Compressors	Diesel	37	Average																							88	38	20			2.3
Plate Compactors	Plate Compactors	Diesel	8	Average																									40			0.6
Forklifts	Forklifts	Diesel	82	Average																							44					0.7
Generator Sets	Generator Sets	Diesel	14	Average																							132	114	60			4.8
Pumps	Pumps	Diesel	11	Average																							176	152				5.1
Pavement Removal For new pipe																																	
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	336	32																							86	8.0
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	336	32																								8.0
Trench Excavation and Pipe Construction																																	
Bigger Excavator	Excavators	Diesel	130	Tier 4		120	168	48																							63	5.3
Pumps for Dewatering	Pumps	Diesel	11	Average		120	168	64																								5.6
Welding Machine	Welders	Electric	36	N/A			126	48																								2.8
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			126	48																								2.8
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			126	48																								2.8
Asphalt Pavement of Road																																	
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	54																					65	4.0
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	54																						4.0
Asphalt Paver	Pavers	Diesel	148	Tier 4				78	126	54																						4.0
Tandem Roller	Rollers	Diesel	48	Tier 4				78	126	54																						4.0
New Pump Station Construction																																	
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21					40	38	44	44	20	21	22	21								0.9	
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132									120	114	132	132												1.7	
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23	1.0	
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	280	266	308	176	120	126	132	126	126	126	114	132	114	114	138	6.9	
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132									120	114	132	132												1.7	
Pumps	Pumps	Diesel	11	Average	168	152	168	176									160	152	176	176												2.3	
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23	1.0	
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					48												40											0.2	

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt E_Construction Off-Road Equipment Activity (Total Hours per Month)

Equipment Type	CalEEMod Equipment Type	Fuel Type	Horsepower	Engine Tier	2025												2026												2027			Duration (day)	Average Hours per day
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar		
Existing Pump Station Removal																																	
Excavators	Excavators	Diesel	130	Tier 4																							176	152	40		64	5.8
Air Compressors	Air Compressors	Diesel	37	Average																							88	38	20			2.3
Plate Compactors	Plate Compactors	Diesel	8	Average																									40			0.6
Forklifts	Forklifts	Diesel	82	Average																							44					0.7
Generator Sets	Generator Sets	Diesel	14	Average																							132	114	60			4.8
Pumps	Pumps	Diesel	11	Average																							176	152				5.1
Pavement Removal For new pipe																																	
Drill and Mini Excavator	Excavators	Diesel	24	Tier 4	16	304	304																									64	9.8
Bigger Excavator	Excavators	Diesel	130	Tier 4	16	304	304																										9.8
Trench Excavation and Pipe Construction																																	
Bigger Excavator	Excavators	Diesel	130	Tier 4		120	168	24																									5.0
Pumps for Dewatering	Pumps	Diesel	11	Average		120	168	64																									5.6
Welding Machine	Welders	Electric	36	N/A			126	48																								63	2.8
Trench Compactor	Plate Compactors	Diesel	3	Tier 4			126	48																									2.8
Tamping Rammer Compacter	Plate Compactors	Gas	3	Average			126	48																									2.8
Asphalt Pavement of Road																																	
Water Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	30																							3.6
Tack Truck	Off-Highway Trucks	Diesel	185	Tier 4				78	126	30																						65	3.6
Asphalt Paver	Pavers	Diesel	148	Tier 4				78	126	30																							3.6
Tandem Roller	Rollers	Diesel	48	Tier 4				78	126	30																							3.6
New Pump Station Construction																																	
Air Compressors	Air Compressors	Diesel	37	Average	42	38	42	44	21	20	22	21					40	38	44	44	20	21	22	21									0.9
Dumpers/Tenders	Dumpers/Tenders	Diesel	16	Average	126	114	126	132									120	114	132	132													1.7
Forklifts	Forklifts	Diesel	82	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Generator Sets	Generator Sets	Diesel	14	Average	168	152	168	176	126	120	132	126	126	132	108	132	280	266	308	176	120	126	132	126	126	126	114	132	114	114	138	586	6.9
Plate Compactors	Plate Compactors	Diesel	8	Average	126	114	126	132									120	114	132	132													1.7
Pumps	Pumps	Diesel	11	Average	168	152	168	176									160	152	176	176													2.3
Aerial Lifts	Aerial Lifts	Diesel	63	Average						40	44	42	42	44	36	44	20	19	2			42	22	21	21	21	19	22	19	19	23		1.0
Cement Pump Truck	Off-Highway Trucks	Diesel	350	Average					48												40												0.2

Note: CalEEMod default values were used as project-specific hoursepower data were not available. Assumed diesel engine to be conservative when fuel type is unknown.

Alt A_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026					Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May						
Existing Pump Station Removal																													
Worker Commute Trips - demo	23.4		100%																		132	132	66	65	10.15	118.80	Worker Commute	10.15	11.70
Soil Import Truck Trips for Existing Pump Station	6	Marin/Sonoma 8120 Binford Rd				100%																6			0.18	0.55	Hauling	0.68	5.91
Demolition Haul Trips Soil from Excavation of Ex. Pump Station	14	Redwood Landfill				100%															16				0.49	3.45			
Pavement Removal For new pipe																													
Pavement Removal	14	Redwood Landfill				100%	2	16																43	0.84	5.86	Hauling	0.84	7.00
Trench Excavation and Pipe Construction																													
Demolition Haul Trips Soil from Trench	14	Redwood Landfill				100%		5	13	9														63	0.86	6.00	Hauling	2.57	7.67
Demolition Haul Trips Agreggate Base	14	Redwood Landfill				100%		3	9	6															0.57	4.00			
Soil Import Truck Trips for pit zone	6	Marin/Sonoma 8120 Binford Rd				100%		3	9	6															0.57	1.71			
Agregate Base Trucks Trips - Import	28	Dutra Materials				100%		3	9	6															0.57	8.00			
Asphalt Pavement of Road																													
Asphalt Trucks Trips - Import	52	Vulcan Materials Company 885 Lake Herman Rd				100%				14	8													44	1.00	26.00	Hauling	1.00	26.00
New Pump Station Construction																													
Worker Commute Trips - other	23.4		100%				50	190	210	222	126	120	132	126	126	132	108	132	120	114				325	11.74	137.38	Worker Commute	11.74	11.70
Vendor Trips	16.8				50%	50%			3	3	3	9	9	7	3										0.23	1.91	Vendor	0.23	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%		3	3		42														0.30	7.68	Hauling	0.46	19.16
Demolition Haul Trips for excavation of new pump station	14	Redwood Landfill				100%	27																		0.17	1.16			

Notes: Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt B_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026					Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May						
Existing Pump Station Removal																													
Worker Commute Trips - demo	23.4		100%																		132	132	66		10.15	118.80	Worker Commute	10.15	11.70
Demolition Haul Trips for Excavation of Ex. Pump Station	18	Redwood Landfill				100%															16			65	0.49	4.43	Hauling	0.68	8.18
Soil Import Truck Trips for Existing Pump Station	12	Marin/Sonoma 8120 Binford Rd				100%																6			0.18	1.11			
Pavement Removal For new pipe																													
Pavement Removal	18	Redwood Landfill				100%	2	38	36															64	2.38	21.38	Hauling	2.38	9.00
Trench Excavation and Pipe Construction																													
Demolition Haul Trips Soil from Trench	18	Redwood Landfill				100%			20	61	33													65	3.51	31.57	Hauling	10.52	9.22
Demolition Haul Trips Agreggate Base	18	Redwood Landfill				100%			13	41	22														2.34	21.05			
Soil Import Truck Trips for pit zone	12	Marin/Sonoma 8120 Binford Rd				100%			13	41	22														2.34	14.03			
Agregate Base Trucks Trips - Import	26	Dutra Materials				100%			13	41	22														2.34	30.40			
Asphalt Pavement of Road																													
Asphalt Trucks Trips - Import	52	Vulcan Materials Company 885 Lake Herman Rd				100%						4	44	28										65	2.34	60.80	Hauling	2.34	26.00
New Pump Station Construction																													
Worker Commute Trips	23.4		100%				50	190	210	220	210	212	276	222	126	132	108	132	120	114				325	14.29	167.18	Worker Commute	14.29	11.70
Vendor Trips	16.8				50%	50%			20	3	3	9	9	7	3										0.33	2.79	Vendor	0.33	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%			4	3		42													0.30	7.84	Hauling	0.47	19.96
Demolition Haul Trips for excavation of new pump station	18	Redwood Landfill				100%	27																		0.17	1.50			

Notes: Worker commute trips between January 2025 to February 2026 and March 2026 to May 2026 are included in the new pump station construction phase and the existing pump station demolition phase, respectively. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt C_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026												2027			Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar						
Existing Pump Station Removal																																							
Demolition Haul Trips for Excavation of Ex. Pump Station	20	Redwood Landfill				100%																							16				64	0.50	5.00	Hauling	0.69	9.18
Soil Import Truck Trips for Existing Pump Station	14	Marin/Sonoma 8120 Binford Rd																												6				0.19	1.31			
Pavement Removal For new pipe																																							
Pavement Removal	20	Redwood Landfill					2	38	42	44	12																							108	2.56	25.56	Hauling	2.56	10.00
Trench Excavation and Pipe Construction																																							
Demolition Haul Trips Soil from Trench	20	Redwood Landfill				100%		45	63	66	30																								4.80	48.00				
Demolition Haul Trips Agreggate Base	20	Redwood Landfill				100%		30	42	44	22																							85	3.25	32.47	Hauling	14.54	9.78
Soil Import Truck Trips for pit zone	14	Marin/Sonoma 8120 Binford Rd				100%		30	42	44	22																								3.25	22.73				
Agregate Base Trucks Trips - Import	24	Dutra Materials				100%		30	42	44	22																								3.25	38.96				
Asphalt Pavement of Road																																							
Asphalt Trucks Trips - Import	54	Vulcan Materials Company 885 Lake Herman Rd				100%					10	40	44	42	2																				109	2.53	68.37	Hauling	2.53	27.00
New Pump Station Construction																																							
Worker Commute Trips	23.4		100%				50	190	210	220	204	240	264	252	132	132	108	132	160	114	132	132	120	126	132	126	126	126	114	132	114	114	66		13.54	158.45	Worker Commute	13.54	11.70
Vendor Trips	16.8				50%	50%			36	3	3	9	9	6	3							3	3	14	5	3								586	0.33	2.78	Vendor	0.33	8.40
Concrete Trucks Trips	54	Crown Hill Ready Mix 650 Green Island Rd				100%		7	7		37												33												0.29	7.74	Hauling	0.42	21.61
Demolition Haul Trips for excavation of new pump station	20	Redwood Landfill				100%	22												17																0.13	1.33			

Notes: Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt D_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Custom Travel Destination	Fleet Mix (percentage)				2025												2026												2027			Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar						
Existing Pump Station Removal																																							
Demolition Haul Trips for Excavation of Ex. Pump Station	20	Redwood Landfill				100%																							16				64	0.50	5.00	Hauling	0.69	9.18
Soil Import Truck Trips for Existing Pump Station	14	Marin/Sonoma 8120 Binford Rd				100%																								6				0.19	1.31			
Pavement Removal For new pipe																																							
Pavement Removal	20	Redwood Landfill				100%	2	38	42	4																								86	2.00	20.00	Hauling	2.00	10.00
Demolition Haul Trips Soil from Trench	20	Redwood Landfill				100%		45	63	18																								63	4.00	40.00	Hauling	12.19	9.78
Demolition Haul Trips Aggregate Base	20	Redwood Landfill				100%		30	42	14																									2.73	27.30			
Soil Import Truck Trips for pit zone	14	Marin/Sonoma 8120 Binford Rd				100%		30	42	14																									2.73	19.11			
Aggregate Base Trucks Trips - Import	24	Dutra Materials				100%		30	42	14																									2.73	32.76			
Asphalt Pavement of Road																																							
Asphalt Trucks Trips - Import	56	Vulcan Materials Company 885 Lake Herman Rd				100%				26	42	18																							65	2.65	74.09	Hauling	2.65	28.00
New Pump Station Construction																																							
Worker Commute Trips	23.4		100%				50	190	210	246	252	174	132	126	126	132	108	132	160	114	132	132	120	126	132	126	126	126	114	132	114	114	66	586	12.67	148.23	Worker Commute	12.67	11.70
Vendor Trips	16.8				50%	50%			20	3	3	8	9	6	3							3	3	14	5	3									0.27	2.29	Vendor	0.27	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%		4	4		37												33												0.27	6.92	Hauling	0.40	20.67
Demolition Haul Trips for excavation of new pump station	20	Redwood Landfill				100%	22												17																0.13	1.33			

Notes: Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Alt E_Construction Vehicle Trip Activity (Total Round Trips per Month)

Vehicle Trip Activity	Travel Distance (Round Trip Miles)	Travel Destination	Fleet Mix (percentage)				2025												2026												2027			Duration (day)	Average One-Way Trips per day	Average VMT per day	Trip Type	Trip Type - Average One-Way Trips per day	Average One-Way Trip Length (miles)
			LDA	LHD	MHD	HHD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar						
Existing Pump Station Removal																																							
Demolition Haul Trips for Excavation of Ex. Pump Station	20	Redwood Landfill				100%																								16				64	0.50	5.00	Hauling	0.69	9.18
Soil Import Truck Trips for Existing Pump Station	14	Marin/Sonoma 8120 Binford Rd				100%																									6				0.19	1.31			
Pavement Removal For new pipe																																							
Pavement Removal	20	Redwood Landfill				100%	2	38	38																									64	2.44	24.38	Hauling	2.44	10.00
Trench Excavation and Pipe Construction																																							
Demolition Haul Trips Soil from Trench	20	Redwood Landfill				100%		45	63	9																									3.71	37.14			
Demolition Haul Trips Aggregate Base	20	Redwood Landfill				100%		30	42	6																								63	2.48	24.76	Hauling	11.14	9.78
Soil Import Truck Trips for pit zone	14	Marin/Sonoma 8120 Binford Rd				100%		30	42	6																									2.48	17.33			
Aggregate Base Trucks Trips - Import	24	Dutra Materials				100%		30	42	6																									2.48	29.71			
Asphalt Pavement of Road																																							
Asphalt Trucks Trips - Import	56	Vulcan Materials Company 885 Lake Herman Rd				100%				26	42	10																							65	2.40	67.20	Hauling	2.40	28.00
New Pump Station Construction																																							
Worker Commute Trips	23.4		100%				50	190	210	246	252	150	132	126	126	132	108	132	160	114	132	132	120	126	132	126	126	126	114	132	114	114	66		12.59	147.27	Worker Commute	12.59	11.70
Vendor Trips	16.8				50%	50%			20	3	3	8	9	6	3							3	3	14	5	3									0.27	2.29	Vendor	0.27	8.40
Concrete Trucks Trips	52	Crown Hill Ready Mix 650 Green Island Rd				100%		4	4		37												33											586	0.27	6.92	Hauling	0.40	20.67
Demolition Haul Trips for excavation of new pump station	20	Redwood Landfill				100%	22												17																0.13	1.33			

Notes: Worker commute trips are included in the new pump station construction phase. In addition, concrete truck trips and vendor trips are included in the new pump station construction phase.

Summary of ISCST3 Model Parameters, Assumptions, and Results for DPM and PM2.5 Emissions from Construction of Alternative A (Worst-Case Scenario)

ISCST3 Model Parameters and Assumptions			
Source Type	**Units**	**Value**	**Notes**
Area Source: Off-Road Equipment Exhaust (DPM)			
Average Hours/Work Day	hours/day	10.3	Monday to Friday: 7 am to 6 pm; Saturday: 10 am to 5 pm
DPM Emission Rate - New pump station construction and pipe improvements	gram/second	0.00060	Exhaust PM10 from off-road construction equipment
DPM Emission Rate - Demolition of Existing Pump Station	gram/second	0.00013	Exhaust PM10 from off-road construction equipment
Release Height	meters	5.0	SMAQMD, 2015
Initial Vertical Dimension	meters	1.4	USEPA, 2022
Area Source: On-Site Fugitive PM2.5			
Fugitive PM2.5 Emission Rate - New pump station construction and pipe improvements	gram/second	0.000001	Fugitive PM2.5 from on-site construction activities.
Fugitive PM2.5 Emission Rate - Demolition of Existing Pump Station	gram/second	0.00001	Fugitive PM2.5 from on-site construction activities.
Release Height	meters	0.0	SMAQMD, 2015
Initial Vertical Dimension	meters	1.0	SMAQMD, 2015
ISCST3 Model Results			
Sensitive Receptor	**Pollutant**	**Annual Average Concentration**	**Notes**
MEIR	DPM ($\mu g/m^3$)	0.0475	Nearest residential receptor
	PM2.5 ($\mu g/m^3$)	0.0436	
MEIS	DPM ($\mu g/m^3$)	0.0117	Nearest student receptor
	PM2.5 ($\mu g/m^3$)	0.0109	

Notes:

DPM = diesel particulate matter

PM_{10} = particulate matter with aerodynamic resistance diameters equal to or less than 10 microns

$PM_{2.5}$ = particulate matter with aerodynamic resistance diameters equal to or less than 2.5 microns

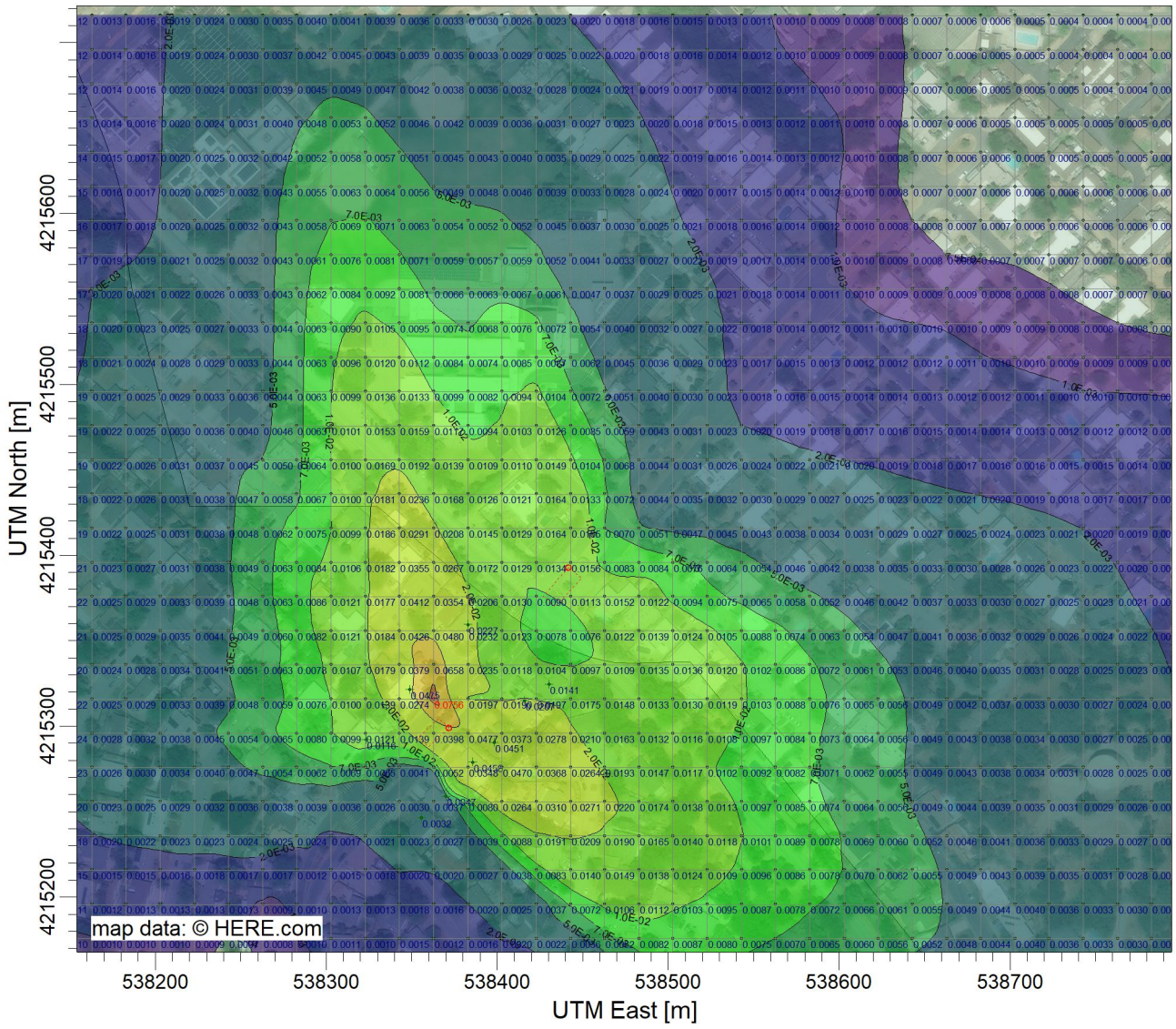
$\mu g/m^3$ = micrograms per cubic meter

Sacramento Metropolitan Air Quality Management District (SMAQMD), 2015. *Guide to Air Quality Assessment in Sacramento County* . June.

U.S. Environmental Protection Agency (USEPA), 2022. User's Guide for the AMS/EPA Regulatory Model (AERMOD).

PROJECT TITLE: Lynwood Pump Station

Lynwood Pump Station
Offroad Construction Equipment Exhaust



PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: ALL ug/m^3

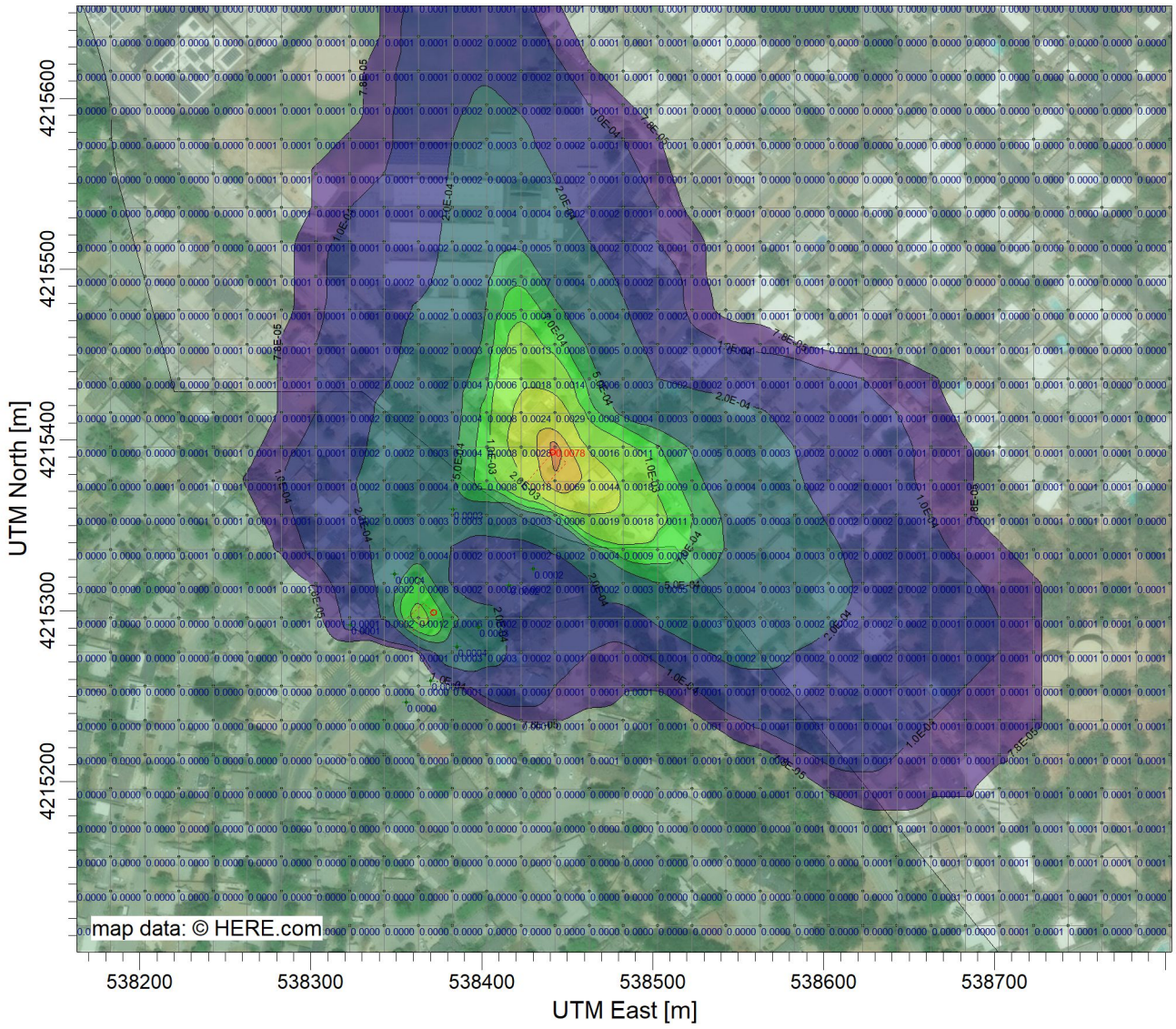
Max: 7.6E-02 [ug/m^3] at (538362.81, 4215316.00)

7.5E-04 1.0E-03 2.0E-03 5.0E-03 7.0E-03 1.0E-02 2.0E-02 5.0E-02 7.0E-02 7.6E-02

COMMENTS:	SOURCES: **2**	COMPANY NAME: Baseline Env **Baseline Environmental Consulting**	
	RECEPTORS: **1234**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:4,025 0 0.1 km	
	MAX: **7.6E-02 ug/m^3**		PROJECT NO.:21214-14 **21202-14**

PROJECT TITLE: Lynwood Pump Station

Lynwood Pump Station
Onsite Construction Fugitive PM2.5



PLOT FILE OF PERIOD VALUES FOR SOURCE GROUP: ALL ug/m^3

Max: 7.8E-03 [ug/m^3] at (538442.81, 4215396.00)

7.8E-05 1.0E-04 2.0E-04 5.0E-04 7.0E-04 1.0E-03 2.0E-03 5.0E-03 7.0E-03 7.8E-03

COMMENTS:	SOURCES: **2**	COMPANY NAME: Baseline Env **Baseline Environmental Consulting**	
	RECEPTORS: **1234**		
	OUTPUT TYPE: **Concentration**	SCALE: 1:4,025 0 0.1 km	
	MAX: **7.8E-03 ug/m^3**		PROJECT NO.:21214-14 **21202-14**

Summary of Health Risk Assessment for DPM Emissions during Construction of Alternative A (Worst-Case Scenario)

Health Risk Assessment Parameters and Results				
Inhalation Cancer Risk Assessment for DPM	**Units**	**0-2 Years Old Infant (MEIR)**	**2-16 Years Old Student (MEIS)**	**Notes**
DPM Concentration (C)	$\mu g/m^3$	0.048	0.012	AERMOD Annual Average
Daily Breathing Rate (DBR)	L/kg-day	1090	520	BAAQMD, 2023
Inhalation absorption factor (A)	unitless	1.0	1.0	OEHHA, 2015
Exposure Frequency (EF)	unitless	0.96	0.68	MEIR: 350 days/365 days, MEIS: 250 days/365 days in a year (OEHHA, 2015)
Dose Conversion Factor (CF_D)	$mg\text{-}m^3/\mu g\text{-}L$	0.000001	0.000001	Conversion of µg to mg and L to m^3
Dose (D)	mg/kg/day	0.000050	0.000004	$C*DBR*A*EF*CF_D$ (OEHHA, 2015)
Cancer Potency Factor (CPF)	$(mg/kg/day)^{-1}$	1.1	1.1	Inhalation CPF for Diesel exhaust, OEHHA, 2015
Age Sensitivity Factor (ASF)	unitless	10	3	OEHHA, 2015
Annual Exposure Duration (ED)	years	1.4	1.4	Based on total construction period of 17 months
Averaging Time (AT)	years	70	70	70 years for residents (OEHHA, 2015)
Fraction of time at home (FAH)	unitless	0.85	--	OEHHA, 2015
Worker Adjustment Factor (WAF)	unitless	--	2.71	Assumes the average emissions occur 10.3 hours/day, 6 days per week
Cancer Risk Conversion Factor (CF)	m^3/L	1000000	1000000	Chances per million (OEHHA, 2015)
Cancer Risk	per million	9.4	0.8	MEIR: D*CPF*ASF*ED/AT*FAH*CF*IF MEIS, MEIW, Recreational Receptor: D*CPF*ASF*ED/AT*WAF*CF*IF
Hazard Index for DPM	**Units**	**MEIR**	**MEIS**	**Notes**
Chronic REL	$\mu g/m^3$	5.0	5.0	OEHHA, 2015
Chronic Hazard Index for DPM	unitless	0.01	0.002	HI=C/REL (OEHHA, 2015)

Notes:

DPM = diesel particulate matter

REL = reference exposure level

$\mu g/m^3$ = micrograms per cubic meter

L/kg-day = liters per kilogram-day

m^3/L = cubic meters per liter

$(mg/kg/day)^{-1}$ = 1/milligrams per kilograms per day

MEIR = maximum exposed individual resident

MEIW = maximum exposed individual worker

Office of Environmental Health Hazard Assessment (OEHHA), 2015. *Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February.*

Cohn,K., Lau, V., and Sinder, B., 2022. *Measurement Study to Evaluate Controls for Reducing In-Home Pollutant Exposures at Homes Near High Trafficked Roadways* .

Screening Report

Area of Interest (AOI) Information

Area : 3,324,428.22 ft²

Jan 8 2024 5:56:45 Pacific Standard Time

Summary

Name	Count	Area(ft²)	Length(ft)
Permitted Stationary Sources	0	N/A	N/A

NOTE: A larger buffer than 1000 feet may be warranted depending on proximity to significant sources.

Step 1: Enter Facility Data

Plant Name	Alternative A
Plant No.	Site 1

Note: This tool can only be used for permitted facilities that are not gas stations.

Step 2: Estimate Distance

What is the distance (m) from the facility boundary to the MEI?	10

Step 3: Enter Emissions Data

Step 4: Specify Source Type

Does facility have only diesel backup generators?	yes

Note: Default generic distance multiplier used if source is not a generator.

Step 5: Record the Estimates

Cancer Risk	9.987	per 1,000,000
Chronic Hazard	0.003	
PM2.5 Concentration	0.008	µg/m^3

Chemical Name	CAS No. (dashes removed)	Emission (lb/day)	Cancer (# / 1,000,000)	Chronic (index)	Concentration (µg/m3)
Fine Particulate Matter (PM2.5)		4.00E-03			0.01
1,1,1-Trichloroethane	71556				
1,1,2,2-Tetrachloroethane	79345				
1,1,2-Trichloroethane	79005				
1,1-Dichloroethane	75343				
1,1-Dichloroethylene	75354				
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin	3268879				
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	39001020				
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	35822469				
1,2,3,4,6,7,8-Heptachlorodibenzofuran	67562394				
1,2,3,4,7,8,9-Heptachlorodibenzofuran	55673897				
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	39227286				
1,2,3,4,7,8-Hexachlorodibenzofuran	70648269				
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	57653857				
1,2,3,6,7,8-Hexachlorodibenzofuran	57117449				
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743				
1,2,3,7,8,9-Hexachlorodibenzofuran	72918219				
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764				
1,2,3,7,8-Pentachlorodibenzofuran	57117416				
1,2-Dibromo-3-chloropropane	96128				
1,2-Dibromoethane	106934				
1,2-Dichloroethane	107062				
1,2-Epoxybutane	106887				
1,3-Butadiene	106990				
1,3-Propane sultone	1120714				
1,4-Dichlorobenzene	106467				
1,4-Dioxane	123911				
1,6-Dinitropyrene	42397648				
1,6-Hexamethylene Diisocyanate (monomer)	822060				
1,8-Dinitropyrene	42397659				
1-Nitropyrene	5522430				
2',3,4,4',5-PeCB	65510443				
2,3',4,4',5,5'-HxCB	52663726				
2,3',4,4',5-PeCB	31508006				
2,3,3',4,4',5'-HxCB	69782907				
2,3,3',4,4',5,5'-HpCB	39635319				
2,3,3',4,4',5-HxCB	38380084				
2,3,3',4,4'-PeCB	32598144				
2,3,4,4',5-PeCB	74472370				
2,3,4,6,7,8-hexachlorodibenzofuran	60851345				
2,3,4,7,8-Pentachlorodibenzofuran	57117314				
2,3,7,8-Tetrachlorodibenzo-p-dioxin and related compo	1746016				
2,3,7,8-Tetrachlorodibenzofuran	51207319				
2,4,6-Trichlorophenol	88062				
2,4-Diaminoanisole	615054				
2,4-Diaminotoluene	95807				
2,4-Dinitrotoluene	121142				
2-Aminoanthraquinone	117793				
2-Nitrofluorene	607578				
3,3',4,4',5,5'-HxCB	32774166				
3,3',4,4',5-PeCB	57465288				
3,3',4,4'-TCB	32598133				
3,3-Dichlorobenzidine	91941				
3,4,4'5-TCB	70362504				
3-Methylcholanthrene	56495				
4,4-Methylene bis(2-chloroaniline)	101144				
4,4-Methylenedianiline	101779				
4-Chloro-ortho-phenylenediamine	95830				
4-Dimethylaminoazobenzene	60117				
4-Nitropyrene	57835924				
5-Methylchrysene	3697243				
5-Nitroacenaphthene	602879				
6-Nitrochrysene	7496028				
7,12-Dimethylbenz(a)anthracene	57976				
7H-dibenzo(c,g)carbazole	194592				
Acetaldehyde	75070				
Acetamide	60355				
Acrolein	107028				
Acrylamide	79061				
Acrylic Acid	79107				
Acrylonitrile	107131				
Allyl chloride	107051				
Ammonia	7664417				
Aniline	62533				
Arsenic	7440382				
Arsine	7784421				
Asbestos [1/(100 PCM fibers/m^3)]^-1	1332214				
Benz(a)anthracene	56553				
Benzene	71432				
Benzidine	92875				
Benzo(a)pyrene	50328				
Benzo(b)fluoranthene	205992				
Benzo(j)fluoranthene	205823				
Benzo(k)fluoranthene	207089				
Benzyl Chloride	100447				
Beryllium	7440417				
Bis(2-chloroethyl) Ether	111444				
Bis(2-chloromethyl) Ether	542881				
Cadmium	7440439				
Caprolactam	105602				
Carbon Disulfide	75150				
Carbon Monoxide	630080				
Carbon Tetrachloride	56235				
Carbonyl Sulfide	463581				
Chlorinated paraffins (Avg. chain length C12; approx. 60	108171262				
Chlorine	7782505				
Chlorine Dioxide	10049044				
Chlorite	7758192				
Chlorobenzene	108907				
Chlorodibromomethane	124481				
Chloroethane (Ethyl Chloride)	75003				
Chloroform	67663				
Chloropicrin	76062				
Chromic Trioxide	1333820				
Chromium-hexavalent	18540299				

	Barium chromate	10294403						
	Calcium chromate	13765190						
	Lead chromate	7758976						
	Sodium dichromate	10588019						
	Strontium chromate	7789062						
	Zinc chromate	13530659						
	CHROMIC TRIOXIDE (as chromic acid mist)	1333820						
	Chrysene	218019						
	Cobalt	7440484						
	Copper	7440508						
	Copper and Copper Compounds	7440508						
	Cresol Mixtures	1319773						
	Cupferron	135206						
	Cyanide	57125						
	Di(2-ethylhexyl)phthalate	117817						
	Dibenz(a-h)acridine	226368						
	Dibenz(a-h)anthracene	53703						
	Dibenz(a-j)acridine	224420						
	Dibenzo(a-e)pyrene	192654						
	Dibenzo(a-h)pyrene	189640						
	Dibenzo(a-i)pyrene	189559						
	Dibenzo(a-l)pyrene	191300						
	Diesel Exhaust Particulate	85105	7.10E-03	9.99E+00	2.68E-03			
	Diethanolamine	111422						
	Dimethylformamide	68122						
	Direct Black 38 (Technical Grade)	1937377						
	Direct Blue 6 (Technical Grade)	2602462						
	Direct Brown 95 (Technical Grade)	16071866						
	Epichlorohydrin	106898						
	Ethylbenzene	100414						
	Ethylene Glycol	107211						
	Ethylene Glycol Monobutyl Ether	111762						
	Ethylene Glycol Monoethyl Ether	110805						
	Ethylene Glycol Monoethyl Ether Acetate	111159						
	Ethylene Glycol Monomethyl Ether	109864						
	Ethylene Glycol Monomethyl Ether Acetate	110496						
	Ethylene Oxide	75218						
	Ethylene Thiourea	96457						
	Fluorides	1101						
	Formaldehyde (gas)	50000						
	Glutaraldehyde	111308						
	Hexachlorobenzene	118741						
	Hexachlorocyclohexane (Technical Grade)	608731						
	Hexachlorocyclohexane- Alpha Isomer	319846						
	Hexachlorocyclohexane- Beta Isomer	319857						
	Hexachlorocyclohexane- Gamma Isomer	58899						
	Hydrazine	302012						
	Hydrogen Chloride	7647010						
	Hydrogen Cyanide	74908						
	Hydrogen Fluoride	7664393						
	Hydrogen Selenide	7783075						
	Hydrogen Sulfide	7783064						
	Indeno(1-2-3-c-d)pyrene	193395						
	Isophorone	78591						
	Isopropyl Alcohol	67630						
	Lead Acetate	301042						
	Lead and Lead Compounds	7439921						
	Lead Phosphate	7446277						
	Lead Subacetate	1335326						
	m-CRESOL	108394						
	m-XYLENE	108383						
	Maleic Anhydride	108316						
	Manganese & Manganese Compounds	7439965						
	Mercury (Inorganic)	7439976						
	Mercuric chloride	7487947						
	Methanol	67561						
	Methyl Bromide	74839						
	Methyl Ethyl Ketone	78933						
	Methyl Isocyanate	624839						
	Methyl Tertiary Butyl Ether	1634044						
	Methylene Chloride (Dichloromethane)	75092						
	Methylene Diphenyl Isocyanate (MDI)	101688						
	Michlers Ketone	90948						
	n-Hexane	110543						
	n-Nitroso-n-methylethylamine	10595956						
	n-Nitrosodi-n-Butylamine	924163						
	n-Nitrosodi-n-Propylamine	621647						
	n-Nitrosodiethylamine	55185						
	n-Nitrosodimethylamine	62759						
	n-Nitrosodiphenylamine	86306						
	n-Nitrosomorpholine	59892						
	n-Nitrosopiperidine	100754						
	n-Nitrosopyrrolidine	930552						
	Naphthalene	91203						
	Nickel and Nickel Compounds	7440020						
	Nickel acetate	373024						
	Nickel carbonate	3333673						
	Nickel carbonyl	13463393						
	Nickel hydroxide	12054487						
	Nickelocene	1271289						
	Nickel Oxide	1313991						
	Nickel Refinery Dust	1146						
	Nickel Subsulfide	12035722						
	Nitric Acid	7697372						
	Nitrogen Dioxide	10102440						
	o-CRESOL	95487						
	o-XYLENE	95476						
	Oleum	8014957						
	Ozone	10028156						
	p-Chloro-o-toluidine	95692						
	p-Cresidine	120718						
	p-CRESOL	106445						
	p-Nitrosodiphenylamine	156105						
	p-XYLENE	106423						
	Pentachlorophenol	87865						
	Perchloroethylene	127184						
	Phenol	108952						
	Phosgene	75445						
	Phosphine	7803512						
	Phosphoric Acid	7664382						
	Phthalic Anhydride	85449						
	Polychlorinated Biphenyls	1336363						
	Potassium Bromate	7758012						
	Propylene	115071						
	Propylene Glycol Monomethyl Ether	107982						
	Propylene oxide	75569						
	Selenium	7782492						
	Selenium sulfide	7446346						
	Silica (crystalline, respirable)	7631869						
	Sodium hydroxide	1310732						
	Styrene	100425						
	Sulfates	9960						

Sulfur Dioxide	7446095				
Sulfuric Acid	7664939				
Sulfur Trioxide	7446719				
Tertiary-butyl acetate	540885				
Tetrachloroethylene	127184				
Thioacetamide	62555				
Toluene	108883				
Toluene Diisocyanates	26471625				
Toluene Diisocyanates (2,4 and 2, 6)	584849				
Toluene Diisocyanates (2,4 and 2, 6)	91087				
Trichloroethylene	79016				
Triethylamine	121448				
Urethane	51796				
Vanadium pentoxide	1314621				
Vinyl acetate	108054				
Vinyl chloride	75014				
Xylenes (technical mixture of m, o, p-isomers)	1330207				
Vanadium	7440622				
		TOTAL UNADJUSTED Risk Values	**9.987**	**0.003**	**0.008**

APPENDIX D. BIOLOGICAL RESOURCES TECHNICAL REPORT

Biological Resources Technical Report

Lynwood Pump Station Replacement

Novato, Marin County, California

Prepared for:

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January 2024

WRA#320289

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List of Acronyms

BGEPA	Bald and Golden Eagle Protection Act
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFGC	California Fish and Game Code
CFP	California Fully Protected Species
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CPRC	California Public Resources Code
CSRL	California Soils Resource Lab
CWA	Clean Water Act
District	North Marin Water District
EFH	Essential Fish Habitat
ESA	Federal Endangered Species Act
Inventory	California Native Plant Society Rare Plant Inventory
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation & Management Act
MBTA	Migratory Bird Treaty Act
MM	Mitigation Measure
NCCP	Natural Community Conservation Plan
NETR	National Environmental Title Research
NOAA	National Oceanic and Atmospheric Administration
NMFS	National Marine Fisheries Service
NPPA	California Native Plant Protection Act
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OHWM	Ordinary High Water Mark
Rank	California Rare Plant Ranks
RHA	Rivers and Harbors Act
RWQCB	Regional Water Quality Control Board
SFEI	San Francisco Estuary Institute
SSC	Species of Special Concern
SWRCB	State Water Resource Control Board
TOB	Top of Bank
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group
WRA	WRA, Inc.

1.0 INTRODUCTION

This Biological Resources Technical Report evaluates existing biological resources, potential impacts, and mitigation measures (if required) for the Lynwood Pump Station Replacement Project located in Novato, Marin County, CA (Appendix A – Figure 1). The proposed project (Project) involves replacing the existing Lynwood pump station (PS) with either one or two new pump stations at a different location to continue to provide reliable potable water service to the North Marin Water District's (District) existing customers and in order to meet demands associated with the anticipated future growth within the service area.

The analysis provided in this report considers five potential sites on which the proposed project would be located, all of which are within the City of Novato (City) (Figure 1). Each potential site would be an alternative location for a proposed new PS to replace the existing Lynwood PS and are all analyzed in the IS/MND at the same level of detail. These sites are located as follows:

- Sunset Parkway Site (Site 1): Within the Sunset Parkway median between Monte Maria Avenue and Cambridge Street
- Ignacio Boulevard Site (Site 2): Within an open space area south of the intersection of Ignacio Boulevard and Palmer Drive
- Bolling Drive Site (Site 3): Within an open space area northeast of the intersection of Bolling Drive and Bolling Circle. A pump station built at the Bolling Drive site requires construction of a parallel pump station at the Ignacio Boulevard site.
- Main Gate Road Site (Site 4): Within a public property situated along the south side of Main Gate Road between its intersection with Nave Drive and C Street. The site is situated in an open space area adjacent to the northeastern corner of a parking lot covered with solar canopies. A pump station built at the Main Gate Road Site (Site 4) requires construction of a parallel pump station at the Ignacio Boulevard site.
- C Street Site (Site 5): Within a baseball field situated northeast of the intersection of C Street and Main Gate Road. A pump station built at the C Street (Site 5) requires construction of a parallel pump station at the Ignacio Boulevard site.

The analysis provided herein also evaluates the potential impacts associated with the demolition of the existing Lynwood PS, which is located on Sunset Parkway between Lynwood Drive and South Novato Boulevard (Existing PS Site), and potential temporary impacts associated with staging areas. The Existing PS Site, five alternative projects sites, and the associated staging areas are referred to collectively as the Study Area.

1.1 Overview and Purpose

This Biological Resources Technical Report provides an assessment of biological resources within the Study Area and the immediate vicinity. The purpose of the assessment is to develop and gather information on sensitive land cover types and special-status plant and wildlife species to support an evaluation of the Project under the California Environmental Quality Act (CEQA). This report describes the results of the site visits which assessed the Study Area for (1) the presence of sensitive land cover types, special-status plant species, and special-status wildlife species, and (2) the potential for the Study Area to support special-status plant and wildlife species. Based on the results of the site assessment, potential impacts to sensitive land cover types and special-status species resulting from the proposed project were evaluated. If the project has the

potential to result in significant impacts to biological resources, measures to avoid, minimize, or mitigate for those significant impacts are described.

This assessment is based on the information available at the time of the study and the on-site conditions that were observed on the dates the Study Area was visited. Conclusions are based on currently available information used in combination with the professional judgement of the biologists completing this study.

1.2 Project Description

The District has decided to move forward with the replacement of the Lynwood PS at a different location. Five potential alternative solutions for replacing the existing Lynwood PS have been identified as described above. Each alternative would involve either a new PS at one of the sites or two new PS at a combination of the sites. This report considers the environmental impacts of each proposed alternative for the replacement of the existing Lynwood PS at the same level of detail. In order to provide a conservative analysis of the potential impacts of the proposed project, this report analyzes impacts associated with the "worst-case scenario," and therefore assumes demolition of the existing PS will be included as part of the project.

A detailed description of each alternative is provided in the sections that follow. Each new PS would include a pump station building and parking. The analysis also considers that an emergency generator may be installed at each site, but the District may choose not to install an emergency generator as part of the final design effort. The footprint for pipe improvements assumes a ten-foot-wide T trench.

Construction equipment would be stored in designated staging areas, which are shown in Figures 2 through 6. The staging area on Sunset Parkway would be used for any project work at the Sunset Parkway Site or the Existing PS Site. Separate staging areas are identified for the four other sites on Ignacio Boulevard, Bolling Drive, Main Gate Road Site, and C Street Site.

1.2.1 Alternative A

Alternative A would include one new PS with four pumps located at the Sunset Parkway Site (Site 1). This PS would match the existing PS but would include one additional pump to meet future demands. The Sunset Parkway Site is located approximately 330 feet southwest of the Existing PS Site. This alternative was chosen because the existing PS location provides the ability to meet demands to the north and south of the existing facility location, which is especially critical during peak demand periods (F&L 2023). The proposed PS footprint is approximately 2,000 square feet (SF) and proposed pipe improvements footprint is approximately 9,000 SF.

1.2.2 Alternative B

Alternative B would include one new PS with four pumps located at the Ignacio Boulevard Site (Site 2). The Ignacio Boulevard Site is located approximately 1.3 miles south of the Existing PS Site. This alternative was chosen because, by relocating the PS away from the existing PS, the new PS could meet future peak demands throughout Primary Zone 2 and would also improve the District's ability to deliver water to the Pacheco Valley Tank (F&L 2023). The proposed PS footprint is approximately 2,000 SF and proposed pipe improvements footprint is approximately 37,500 SF.

1.2.3 Alternative C

Alternative C would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) and one at the Bolling Drive Site (Site 3). The new PS at the Ignacio Boulevard Site would include three pumps and the new PS at Bolling Drive Site would include two pumps. This alternative was developed to include both replacement of the Lynwood PS near the Existing PS Site and to add a third PS at a location within or in the vicinity of the southern portion of Primary Zone 2 that would improve the District's ability to fill the Pacheco Valley Tank (F&L 2023) while also meeting future demands. The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF. The proposed PS footprint at the Bolling Drive Site is approximately 1,600 SF and proposed pipe improvements footprint is approximately 31,000 SF.

1.2.4 Alternative D

Alternative D would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the Main Gate Road Site (Site 4) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the Main Gate Road Site (Site 4) is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF. The proposed PS footprint at the Main Gate Road Site is approximately 1,600 SF and the proposed pipe improvements footprint is approximately 4,700 SF.

1.2.5 Alternative E

Alternative E would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the C Street Site (Site 5) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the C Street Site is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF. The proposed PS footprint at the C Street Site is approximately 1,600 SF and the proposed pipe improvements footprint is approximately 1,200 SF.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Federal and State Regulatory Setting

2.1.1 Vegetation and Aquatic Communities

CEQA provides protections for particular vegetation types defined as sensitive by the California Department of Fish and Wildlife (CDFW) and aquatic features protected by laws and regulations administered by the U.S Army Corps of Engineers (Corps), State Water Resources Control Board (SWRCB), and Regional Water Quality Control Boards (RWQCB). The laws and regulations that provide protection for these resources are summarized below.

Sensitive Natural Communities: Sensitive natural communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. CDFW ranks sensitive communities as "threatened" or "very threatened" (CDFW 2024a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2024b). Natural communities are ranked 1 through 5 in the CNDDB based on NatureServe's (2024) methodology, with those communities ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (California Code of Regulations [CCR] Title 14, Div. 6, Chap. 3, Appendix G). In addition, this general class includes oak woodlands that are protected by local ordinances under the Oak Woodlands Protection Act and Section 21083.4 of California Public Resources Code (CPRC).

Waters of the United States, Including Wetlands: The Corps regulates “Waters of the United States” under Section 404 of the Clean Water Act (CWA). Waters of the United States are defined in the Code of Federal Regulations (CFR) as including the territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, such as tributaries, lakes and ponds, impoundments of waters of the U.S., and wetlands that are hydrologically connected with these navigable features (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual* (Corps Manual; Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Unvegetated waters including lakes, rivers, and streams may also be subject to Section 404 jurisdiction and are characterized by an ordinary high water mark (OHWM) identified based on field indicators such as the lack of vegetation, sorting of sediments, and other indicators of flowing or standing water. The placement of fill material into Waters of the United States generally requires a permit from the Corps under Section 404 of the CWA.

The Corps also regulates construction in navigable waterways of the U.S. through Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S. Code [USC] 403). Section 10 of the RHA requires Corps approval and a permit for excavation or fill, or alteration or modification of the course, location, condition, or capacity of, any port, roadstead, haven, harbor, canal, lake, harbor

or refuge, or enclosure within the limits of any breakwater, or of the channel of any navigable water of the United States. Section 10 requirements apply only to navigable waters themselves, and are not applicable to tributaries, adjacent wetlands, and similar aquatic features not capable of supporting interstate commerce.

Waters of the State, Including Wetlands: The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB and nine RWQCB protect waters within this broad regulatory scope through many different regulatory programs. Waters of the State in the context of a CEQA Biological Resources evaluation include wetlands and other surface waters protected by the *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* (SWRCB 2019). The SWRCB and RWQCB issue permits for the discharge of fill material into surface waters through the State Water Quality Certification Program, which fulfills requirements of Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Clean Water Act permit are also required to obtain a Water Quality Certification. If a project does not require a federal permit but does involve discharge of dredge or fill material into surface waters of the State, the SWRCB and RWQCB may issue a permit in the form of Waste Discharge Requirements.

Sections 1600-1616 of California Fish and Game Code: Streams and lakes, as habitat for fish and wildlife species, are regulated by CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream," which includes creeks and rivers, is defined in the CCR as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). The term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). Riparian vegetation has been defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

2.1.2 Special-status Species

Endangered and Threatened Plants, Fish, and Wildlife. Specific species of plants, fish, and wildlife species may be designated as threatened or endangered by the federal Endangered Species Act (ESA), or the California Endangered Species Act (CESA). Specific protections and permitting mechanisms for these species differ under each of these acts, and a species' designation under one law does not automatically provide protection under the other.

The ESA (16 USC 1531 et seq.) is implemented by the USFWS and the National Marine Fisheries Service (NMFS). The USFWS and NMFS maintain lists of endangered and threatened plant and animal species (referred to as "listed species"). "Proposed" or "candidate" species are those that are being considered for listing and are not protected until they are formally listed as threatened or endangered. Under the ESA, authorization must be obtained from the USFWS or NMFS prior to take of any listed species. "Take" under the ESA is defined as "harass, harm, pursue, hunt, shoot,

wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Take under the ESA includes direct injury or mortality to individuals, disruptions in normal behavioral patterns resulting from factors such as noise and visual disturbance and impacts to habitat for listed species. Actions that may result in take of an ESA-listed species may obtain a permit under ESA Section 10, or via the interagency consultation described in ESA Section 7. Federal-listed plant species are only protected when removal or destruction occurs on federal land; however, if a federal agency authorizes, funds, or carries out an action, that agency must insure through Section 7 consultation that the action is not likely to jeopardize the continued existence of the species.

The ESA also provides for designation of critical habitat, which are specific geographic areas containing physical or biological features "essential to the conservation of the species." Protections afforded to designated critical habitat apply only to actions that are funded, permitted, or carried out by federal agencies. Critical habitat designations do not affect activities by private landowners if there is no other federal agency involvement.

The CESA (CFGC 2050 et seq.) prohibits the take of any plant and animal species that the CFGC determines to be an endangered or threatened species in California. CESA regulations include take protection for threatened and endangered plants on private lands, as well as extending this protection to candidate species that are proposed for listing as threatened or endangered under CESA. The definition of a "take" under CESA ("hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill") only applies to direct impact to individuals, and does not extend to habitat impacts or harassment. CDFW may issue an Incidental Take Permit under CESA to authorize take if it is incidental to otherwise lawful activity and if specific criteria are met. Take of these species is also authorized if the geographic area is covered by a Natural Community Conservation Plan (NCCP), as long as the NCCP covers that activity. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit (RMP).

Fully Protected Species and Designated Rare Plant Species. This category includes specific plant and wildlife species that are designated in the CFGC as protected even if not listed under CESA or ESA. Fully Protected Species includes specific lists of birds, mammals, reptiles, amphibians, and fish designated in CFGC. Fully protected species may not be taken or possessed at any time. No licenses or permits may be issued for take of fully protected species, except for necessary scientific research and conservation purposes. The definition of "take" is the same under the California Fish and Game Code and the CESA. By law, CDFW may not issue an Incidental Take Permit for Fully Protected Species. Under the California Native Plant Protection Act (NPPA), CDFW has listed 64 "rare" or "endangered" plant species, and prevents "take," with few exceptions, of these species. CDFW may authorize take of species protected by the NPPA through the Incidental Take Permit process, or under a NCCP. CDFW may also authorize take for voluntary restoration projects through the Restoration Management Permit (RMP).

Special Protections for Nesting Birds and Bats. The federal Bald and Golden Eagle Protection Act provides relatively broad protections to both of North America's eagle species [bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*)] that in some regards are similar to those provided by the ESA. In addition to regulations for special-status species, most native birds in the United States, including non-status species, have baseline legal protections under the Migratory Bird Treaty Act of 1918 and CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws/codes, the intentional harm or collection of adult birds as well as the

intentional collection or destruction of active nests, eggs, and young is illegal. For bat species, the Western Bat Working Group (WBWG) designates conservation status for species of bats, and those with a high or medium-high priority are typically given special consideration under CEQA.

Essential Fish Habitat. The Magnuson-Stevens Fishery Conservation and Management Act provides for conservation and management of fishery resources in the U.S., administered by NMFS. This Act establishes a national program intended to prevent overfishing, rebuild overfished stocks, ensure conservation, and facilitate long-term protection through the establishment of Essential Fish Habitat (EFH). EFH consists of aquatic areas that contain habitat essential to the long-term survival and health of fisheries, which may include the water column, certain bottom types, vegetation (e.g., eelgrass (*Zostera* spp.)), or complex structures such as oyster beds. Any federal agency that authorizes, funds, or undertakes action that may adversely affect EFH is required to consult with NMFS.

Species of Special Concern, Movement Corridors, and Other Special-status Species under CEQA. A Species of Special Concern (SSC) is a species formally designated by the CDFW which meets one or more criteria related to a Federal ESA status (if it is not listed under CESA), including extirpation from California, documented population declines, or small population size within California and risk of declines. In addition, CDFW has developed a special animals list as "a general term that refers to all of the taxa the CNDDB is interested in tracking, regardless of their legal or protection status." This list includes lists developed by other organizations, including for example, the Audubon Watch List Species, the Bureau of Land Management Sensitive Species, and USFWS Birds of Conservation Concern. Plant species on the California Native Plant Society (CNPS) Rare Plant Inventory (Inventory; CNPS 2024) with California Rare Plant Ranks (Rank) of 1 and 2, as well as some with a Rank of 3 or 4, are also considered special-status plant species and must be considered under CEQA. Some Rank 3 and Rank 4 species are typically only afforded protection under CEQA when such species are particularly unique to the locale (e.g., range limit, low abundance/low frequency, limited habitat) or are otherwise considered locally rare. Additionally, any species listed as sensitive within local plans, policies and ordinances are likewise considered sensitive. Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

2.2 Local Plans and Policies

City of Novato Tree Ordinance (Private Property)

The City of Novato Tree Ordinance defines a "tree" on private property as any native or non-native woody plant having a major trunk or trunk of a diameter of 6 inches or greater measured at 24 inches above grade, and a "heritage tree" is defined as any tree having a diameter of 24 inches or greater, measured at 24 inches above grade (Ord. No. 1576, § 2 [Exhibit A], 10-23-12). The alteration or removal of a heritage tree on any parcel or of one ore more tree on an undeveloped parcel is prohibited without a permit from the City of Novato (Ord. No. 1441 § 2(E); Ord. No. 1576, § 2 [Exhibit A], 10-23-2012).

City of Novato Tree Ordinance (Public Places)

The City of Novato Tree Ordinance defines a "tree" on or adjacent to public places as any woody perennial plant having a single main axis or stem commonly achieving ten feet in height and capable of shaping and pruning to develop a branch-free trunk at least nine feet in height, and a "shrub" is defined as any woody perennial plant, normally low, several stemmed, adaptable to shaping, trimming and pruning without injury within the area planted (Ord. No.

1576, § 2 [Exhibit A], 10-23-12). The trimming, alteration, or removal of and street tree or shrub is prohibited without approval from the City of Novato (Ord. No. 1441 § 2(E); Ord. No. 1576, § 2(E), 10-23-2012).

City of Novato Wetland Protection and Restoration

The City of Novato municipal code stipulates that any development shall be designed and constructed to avoid wetlands to the maximum extent feasible (Ord. No. 1576, § 2 [Exhibit A, amd.], 10-23-2012). Wetlands are defined as waters delineated by the Corps under the provisions of the CWA. Permit approval is required for any project within 50 feet of a wetland, requiring wetland protection measures, involving wetland/encroachment, or requiring wetland mitigation; and, for all wetland protection, restoration, enhancement, and/or mitigation projects (Ord. No. 1576, § 2 [Exhibit A, amd.], 10-23-2012).

City of Novato Waterways and Riparian Protection

The City of Novato municipal code stipulates that all lands adjoining or encompassing watercourses and their significant tributaries shall be subject to a Stream Protection Zone (Ord. No. 1576, § 2 [Exhibit A, amd.], 10-23-2012). These lands are shown on "ES- 1" within the General Plan. A Stream Protection Zone includes the streambed, stream banks, all riparian vegetation, and an upland buffer at least 50 feet wide measured from top of the channel bank. Proposed development, land uses *and* activities including any proposed development application, land division, use permit, grading or building permit for any excavation, fill, grading, or paving; removal or planting of vegetation; construction, alteration, or removal of any structure; or alteration of any embankment within the Stream *Protection* Zone requires Use Permit approval (Ord. No. 1576, § 2 [Exhibit A, amd.], 10-23-2012).

3.0 ASSESSMENT METHODOLOGY

On March 29 and December 13, 2023, WRA, Inc. (WRA) biologists visited the Study Area to map vegetation, aquatic features, and other land cover types; document plant and wildlife species present; and evaluate on-site habitat for the potential to support special-status species as defined by CEQA. Prior to the site visit, WRA biologists reviewed literature resources and performed database searches to assess the potential for sensitive land cover types and special-status species, including:

- Contemporary aerial photographs (Google Earth 2024)
- Historical aerial photographs (NETR 2024)
- National Wetlands Inventory (USFWS 2024a)
- California Aquatic Resources Inventory (SFEI 2024)
- CNDDB (CDFW 2024b)
- CNPS Inventory (CNPS 2024)
- Consortium of California Herbaria (CCH1 2024, CCH2 2024)
- USFWS Information for Planning and Consultation (USFWS 2024b)
- eBird Online Database (Cornell Lab of Ornithology 2024)
- California Bird Species of Special Concern in California (Shuford and Gardali 2008)

- California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- A Manual of California Vegetation, Online Edition (CNPS 2024)
- California Natural Community List (CDFW 2024a)
- Database searches (i.e., CNDDB, CNPS) for special-status species focused on the Novato and eight surrounding USGS 7.5-minute quadrangles.

Following the remote assessment, WRA biologists completed a field review over the course of 2 days to document: (1) land cover types (e.g., vegetation communities, aquatic resources), (2) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, (3) if and what type of aquatic land cover types (e.g., wetlands) are present, and (4) if special-status species are present.

3.1 Vegetation Communities and Other Land Cover Types

During the site visit, WRA evaluated the species composition and area occupied by distinct vegetation communities, aquatic communities, and other land cover types. Mapping of these classifications utilized a combination of aerial imagery and ground surveys. In most instances, communities are characterized and mapped based on distinct shifts in plant assemblage (vegetation) and follow the California Natural Community List (CDFW 2024a) and A Manual of California Vegetation, Online Edition (CNPS 2024). These resources cannot anticipate every component of every potential vegetation assemblage in California, and so in some cases, it is necessary to identify other appropriate vegetative classifications based on best professional judgment of WRA biologists. When undescribed variants are used, it is noted in the description. Vegetation alliances (natural communities) with a CDFW Rank of 1 through 3 (globally critically imperiled [S1/G1], imperiled [S2/G2], or vulnerable [S3/G3]) (CDFW 2024a), were evaluated as sensitive as part of this evaluation.

The Study Area was reviewed for the presence of wetlands and other aquatic resources according to the methods described in the Corps Manual (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West* (Corps 2008). The presence of riparian habitat was evaluated based on woody plant species meeting the definition of riparian provided in *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994) and based on best professional judgement of biologists completing the field surveys.

3.2 Special-status Species

3.2.1 General Assessment

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database review as described above. Presence of suitable habitat for special-status species was evaluated during the site visits based on physical and biological conditions in the Study Area as well as the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent to the Study Area is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Unlikely.** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the Study Area is unsuitable or of very poor quality. The species is not likely to be found in the Study Area.
- **Moderate Potential.** Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the Study Area is unsuitable. The species has a moderate probability of being found in the Study Area.
- **High Potential.** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the Study Area is highly suitable. The species has a high probability of being found in the Study Area.
- **Present.** Species is observed on the Study Area or has been recorded (i.e., CNDDB, other reports) in the Study Area in the recent past.

If a more thorough assessment was deemed necessary, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. If a special-status species was observed during the site visits, its presence was recorded and discussed below in Section 5.2. If designated critical habitat is present for a species, the extent of critical habitat present and an evaluation of critical habitat elements is provided as part of the species discussions below.

3.3 Wildlife Corridors and Native Wildlife Nursery Sites

To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), and habitat connectivity data available through the CDFW Biogeographic Information and Observation System (CDFW 2024). Additionally, aerial imagery (Google Earth 2024) for the local area was referenced to assess if local core habitat areas were present within, or connected to the Study Area. This assessment was refined based on observations of on-site physical and/or biological conditions, including topographic and vegetative factors that can facilitate wildlife movement, as well as on-site and off-site barriers to connectivity.

The potential presence of native wildlife nursery sites is evaluated as part of the site visits and discussion of individual wildlife species below. Examples of native wildlife nursery sites include nesting sites for native bird species (particularly colonial nesting sites), marine mammal pupping sites, and colonial roosting sites for other species (such as for monarch butterfly [*Danaus plexippus*]).

4.0 ECOLOGICAL SETTING

The Study Area is located in Novato, and includes all areas potentially affected by the Project. Additional details of the local setting are below.

4.1 Soils and Topography

The overall topography of the Study Area is flat with elevations ranging from approximately 10-100 feet above sea level. According to SoilWeb (CSRL 2024) and Web Soil Survey (USDA 2024), the Study Area is underlain by two soil mapping units: Xerorthents-Urban land complex, 0 to 9 percent slope and Saurin-Urban land-Bonnydoon complex, 30 to 50 percent slope. Neither soil mapping unit is considered hydric (USDA 2024). The parent soil series of all the Study Area's mapping units are summarized below.

Xerorthents: Xerorthents occur on valley floors covered in fill from cut or fill soils at various depths with various drainage. This mapping unit is used for homesites, urban, and recreational development (CSRL 2024).

Urban Land: Urban land consists of areas covered by roads, driveways, houses, parking lots and other structures. The underlain soil is similar to xerorthents (CSRL 2024).

Saurin Series: This series consists of moderately deep clay loam, formed in material derived from sandstone and shale in uplands. This series is well drained with slow to very rapid runoff and moderate permeability. This soil series is used for rangeland, watershed, and wildlife habitat. Typical vegetation is annual grassland (CSRL 2024).

Bonnydoon Series: This series consists of shallow loam formed in material weathered from sandstone and shale in uplands. This series is somewhat excessively drained with medium to rapid runoff and moderate permeability. Typical land use includes rangeland, wildlife habitat, and some homesites. Typical vegetation includes annual grassland (CSRL 2024).

4.2 Climate and Hydrology

The Study Area is located in the inland region of Marin County. The average monthly maximum temperature in the area is 70 degrees Fahrenheit, while the average monthly minimum temperature is 48 degrees Fahrenheit. Predominantly, precipitation falls as rainfall between November and March with an annual average precipitation of 36 inches.

The local watershed is Miller Creek-Frontal San Pablo Bay Estuaries (HUC 12: 180500020607) and the regional watershed is San Pablo Bay (HUC 8: 18050002). The Study Area is located in the western portion of the San Pablo Bay watershed. There are no blue-line streams in the Study Area (USGS 2018) nor are there aquatic resources identified in the California Aquatic Resources Inventory (CARI) or National Wetland Inventory (NWI) (SFEI 2017, USFWS 2024). There are blue-line streams located adjacent to Sites 2 and 4. Detailed descriptions of aquatic resources are provided in Section 5.1 below.

4.3 Land Use

The majority of the Study Area is developed. Developed areas include landscaping and hardscaping (sidewalks, pavement, and the existing pump station). Detailed land cover type

descriptions are included in Section 5.1 below, and all observed plant species are included in Appendix B. Surrounding land uses include residential and commercial development, urban parks, and open space (Google Earth 2024).

5.0 ASSESSMENT RESULTS

5.1 Vegetation Communities and Other Land Cover

WRA observed two land cover types within the Study Area: developed/landscaped and ruderal herbaceous. Land cover types within the Study Area are illustrated in Appendix A – Figure 2. There are no sensitive communities within the Study Area. For a full list of species observed during the site visits, see Appendix B.

Table 1: Vegetation Communities and Other Land Cover Types

COMMUNITY / LAND COVERS	SENSITIVE STATUS	RARITY RANKING	ACRES WITHIN STUDY AREA
TERRESTRIAL / COMMUNITY LAND COVER			
Developed/ Landscaped	Non-sensitive	None	0.63 acres
Ruderal herbaceous	Non-sensitive	None	0.17 acres

5.1.1 Terrestrial Land Cover

Developed/ Landscaped Area (no vegetation alliance). CDFW Rank: None. The majority of the Study Area is developed and includes landscaping, sidewalks, pavement, and the existing structures. The developed areas total 0.63 acres in the Study Area. The vegetation composition varied from site to site. Herbaceous vegetation included Crane's bill geranium (*Geranium molle*), burclover (*Medicago polymorpha*), slim oat (*Avena barbata),* bristly ox-tongue *(Helminthotheca echioides)* and stinkwort (*Dittrichia graveolens*). Landscaping trees included olive (*Olea sp.),* mulberry (*Morus* sp.), valley oak (*Quercus lobata*), and Siberian elm (*Ulmus parvifolia*). Several landscaped areas included wood chips.

Ruderal herbaceous (no vegetation alliance). CDFW Rank: None: Within the Study Area, this community is located in a relatively flat area, contains a very low diversity of native species, and is surrounded by the existing paved roads, sidewalks, and landscaping. The ruderal herbaceous areas total 0.17 acres in the Study Area. Dominant herbs include greater periwinkle (*Vinca major*), fennel (*Foeniculum vulgare*), bur clover, slim oat, *and* bristly ox-tongue.

5.1.2 Aquatic Resources

No seasonal wetlands were observed within the Study Area. Site 2 and Site 4 are located within 50 feet of riparian vegetation associated with Arroyo San Jose and Pacheco Creek, respectively.

5.2 Special-status Species

5.2.1 Special-status Plants

No special-status plants have been documented on or adjacent to the Study Area (CDFW 2024). Species observed within the Study Area during the March 29 and December 13, 2023 site visits are listed in Appendix B. Based upon a review of the resource databases listed in Section 3.0, 105 special-status plant species have been documented in the vicinity of the Study Area. Appendix C summarizes the potential for each of these species to occur within the Study Area.

Of the 105 special-status species, all are considered unlikely, or have no potential, to occur in the Study Area for one or more of the following reasons:

- Hydrologic conditions (e.g., tidal, riverine) necessary to support the special-status plant species are not present in the Study Area;
- Edaphic (soil) conditions (e.g., volcanic tuff, serpentine) necessary to support the special-status plant species are not present in the Study Area;
- Topographic conditions (e.g., north-facing slope, montane) necessary to support the special-status plant species are not present in the Study Area;
- Unique pH conditions (e.g., alkali scalds, acidic bogs) necessary to support the special-status plant species are not present in the Study Area;
- Associated natural communities (e.g., interior chaparral, tidal marsh) necessary to support the special-status plant species are not present in the Study Area;
- The Study Area is geographically isolated (e.g. below elevation, coastal environ) from the documented range of the special-status plant species;
- The historical landscape and/or habitat(s) of the Study Area were not suitable habitat prior to land/type conversion (e.g., reclaimed shoreline) to support the special-status plant species;
- Land use history and contemporary management (e.g., grading, development) has degraded the localized habitat necessary to support the special-status plant species.

5.2.2 Special-status Wildlife

No special-status wildlife species have been documented on or adjacent to the Study Area (CDFW 2024). Species observed within the Study Area during the March 29 and December 13, 2023 site visits are listed in Appendix B. Based upon a review of the resource databases listed in Section 3.0, 54 special-status wildlife species have been documented in the vicinity of the Study Area. Appendix C summarizes the potential for each of these species to occur within the Study Area. Of the 54 special-status species, all are considered unlikely, or have no potential, to occur in the Study Area based on a lack of habitat features.

Features not found within the Study Area that are required to support special-status wildlife species include:

- Vernal pools
- Perennial aquatic habitat (e.g. streams, rivers or ponds)
- Tidal marsh areas
- Old growth redwood or fir forest
- Open grassland
- Sandy beaches or alkaline flats
- Presence of specific host plants
- Caves, mine shafts, or abandoned buildings

The absence of such habitat features eliminates components critical to the survival or movement of special-status species found in the vicinity. Given the Study Area's relative proximity to sensitive habitats on the San Francisco Bay, many species documented nearby are additionally obligates to marine or tidal marsh habitats which are not present on or in the immediate vicinity of the Study Area.

5.3 Wildlife Corridors and Native Wildlife Nursery Sites

No native wildlife nursery sites are present in the Study Area.

Wildlife movement between suitable habitat areas can occur via open space areas lacking substantial barriers. The terms "landscape linkage" and "wildlife corridor" are often used when referring to these areas. The key to a functioning corridor or linkage is that it connects two larger habitat blocks, also referred to as core habitat areas (Soulé and Terbough 1999; Beier and Loe 1992). It is useful to think of a "landscape linkage" as being valuable in a regional planning context, a broad scale mapping of natural habitat that functions to join two larger habitat blocks. The term "wildlife corridor" is useful in the context of smaller, local area planning, where wildlife movement may be facilitated by specific local biological habitats or passages and/or may be restricted by barriers to movement. Above all, wildlife corridors must link two areas of core habitat and should not direct wildlife to developed areas or areas that are otherwise void of core habitat (Hilty et al. 2019).

The Study Area is not within a designated wildlife corridor (CalTrans 2010). The sites are generally located within a larger tract of developed land within the City of Novato. Riparian areas and stream channels adjacent to Site 2 and Site 4 may facilitate movement of resident wildlife species at a local scale. However, the Study Area itself is set back from riparian habitat and is immediately bordered by roadways, residential development, and commercial development, which likely creates a barrier for wildlife with limited crossing opportunities.

6.0 ANALYTICAL METHODOLOGY AND SIGNIFICANCE THRESHOLD CRITERIA

Pursuant to Appendix G, Section IV of the State CEQA Guidelines, a project would have a significant impact on biological resources if it would:

1. 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 CDFW or U.S. Fish and Wildlife Service;
2. 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 CDFW or U.S. Fish and Wildlife Service;
3. 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
4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and/or,
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

These thresholds were utilized in completing the analysis of potential project impacts for CEQA purposes. For the purposes of this analysis, a "substantial adverse effect" is generally interpreted to mean that a potential impact could directly or indirectly affect the resiliency or presence of a local biological community or species population. Potential impacts to natural processes that support biological communities and special-status species populations that can produce similar effects are also considered potentially significant. Impacts to individuals of a species or small areas of existing biological communities may be considered less than significant if those impacts are speculative, beneficial, de minimis, and/or would not affect the resiliency of a local population.

7.0 IMPACTS AND MITIGATION EVALUATION

Using the CEQA analysis methodology outlined in Section 6.2 above, the following section describes potential significant impacts to sensitive resources within the Project Area as well as suggested mitigation measures which are expected to reduce impacts to less than significant.

7.1 Special-status Species

This section analyzes the Project's potential impacts and mitigation for special-status species in reference to the significance threshold outlined in CEQA Appendix G, Part IV (a):

> *Does the project have the potential to 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 CDFW or U.S. Fish and Wildlife Service?*

Potential impacts and mitigation for potentially significant impacts are discussed below.

Nesting Birds

Special-status bird species are unlikely to nest within the Study Area. However, common birds protected under the MBTA and CFGC may nest within trees or on the ground within the Study Area. Impacts to nesting birds or their eggs and young would be considered a potentially significant impact.

> **Potential Impact BIO-1:** Potential impacts to nesting bird species from the proposed Project include disturbance to nesting birds and possibly death of adults and/or young. Impacts to nesting birds from the proposed Project would be potentially significant.

To reduce potential impacts to nesting bird species to a less-than-significant level, the following measure will be implemented:

> **Mitigation Measure BIO-1:** If Project activities must be conducted during the nesting season (February 15 and September 1), a pre-construction nesting bird survey will be conducted by a qualified biologist no more than 7 days prior to vegetation removal or initial ground disturbance. The survey will include the Study Area and within a minimum 500 feet of all Project areas to identify the location and status of any nests that could potentially be affected either directly or indirectly by Project activities.
>
> If active nests of native nesting bird species are located during the preconstruction nesting bird survey, a work exclusion zone will be established around each nest by the qualified biologist. Established exclusion zones will remain in place until all young in the nest have fledged or the nest otherwise becomes inactive (e.g., due to predation). Suggested buffer zone distances differ depending on species, location, baseline conditions, and placement of nest and shall be determined in the field by a qualified biologist.

Implementation of this mitigation measure will reduce potential impacts to nesting birds to a level that is less than significant pursuant to CEQA.

7.2 Sensitive Natural Communities and Land Cover Types

This section addresses the question:

b) Does the Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or U.S. Fish and Wildlife Service;

No sensitive natural communities were observed within the Study Area.

Site 2 and Site 4 are located within 50 feet of riparian vegetation associated with Arroyo San Jose and Pacheco Creek, respectively. No impacts to riparian vegetation are anticipated if the staging areas are not located under dripline of riparian vegetation. The Project will have no impacts to sensitive natural communities.

7.3 Aquatic Resources

This section analyzes the Project's potential impacts and mitigation for wetlands and other areas presumed or determined to be within the jurisdiction of the Corps or BCDC in reference to the significance threshold outlined in CEQA Appendix G, Part IV (c):

c) Does the Project have the potential to have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

No aquatic resources were observed within the Study Area. All adjacent streams will be avoided by the project. The Project will have no impacts to aquatic resources.

7.4 Wildlife Corridors and Native Wildlife Nursery Sites

This section analyzes the Project's potential impacts and mitigation for habitat corridors and linkages in reference to the significance threshold outlined in CEQA Appendix G, Part IV (d):

d) Does the Project have the potential to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

The Study Area does not serve as a migration corridor. The Project will have no impacts to wildlife corridors.

7.5 Local Policies and Ordinances

This section analyzes the Project's potential impacts and mitigation based on conflicts with local policies and ordinances in reference to the significance threshold outlined in CEQA Appendix G, Part IV (e):

e) Does the Project have the potential to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;

A limited amount of tree removal may be required for the Project, as needed for construction. Some of the trees removed may be protected by local ordinances.

Upland areas within 50 feet of streambanks or riparian vegetation is subject to a Stream Protection Zone per the City of Novato Waterways and Riparian Protection Ordinance. Site 2 and Site 4 are located within 50 feet of riparian vegetation (Arroyo San Jose and Pacheco Creek, respectively). The District is not required to comply with the City of Novato Ordinances. As such, there is no potential conflict with these local ordinances and there is no impact due to tree removal or proposed development within the Stream Protection Zone.

7.6 Habitat Conservation Plans

This section analyzes the Project's potential impacts and mitigation based on conflicts with any adopted local, regional, and state habitat conservation plans in reference to the significance threshold outlined in CEQA Appendix G, Part IV (f):

> *f) Does the Project have the potential to conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.*

The proposed project will not 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 such plan exists applicable to the Study Area. No impact will occur.

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APPENDIX A. FIGURES

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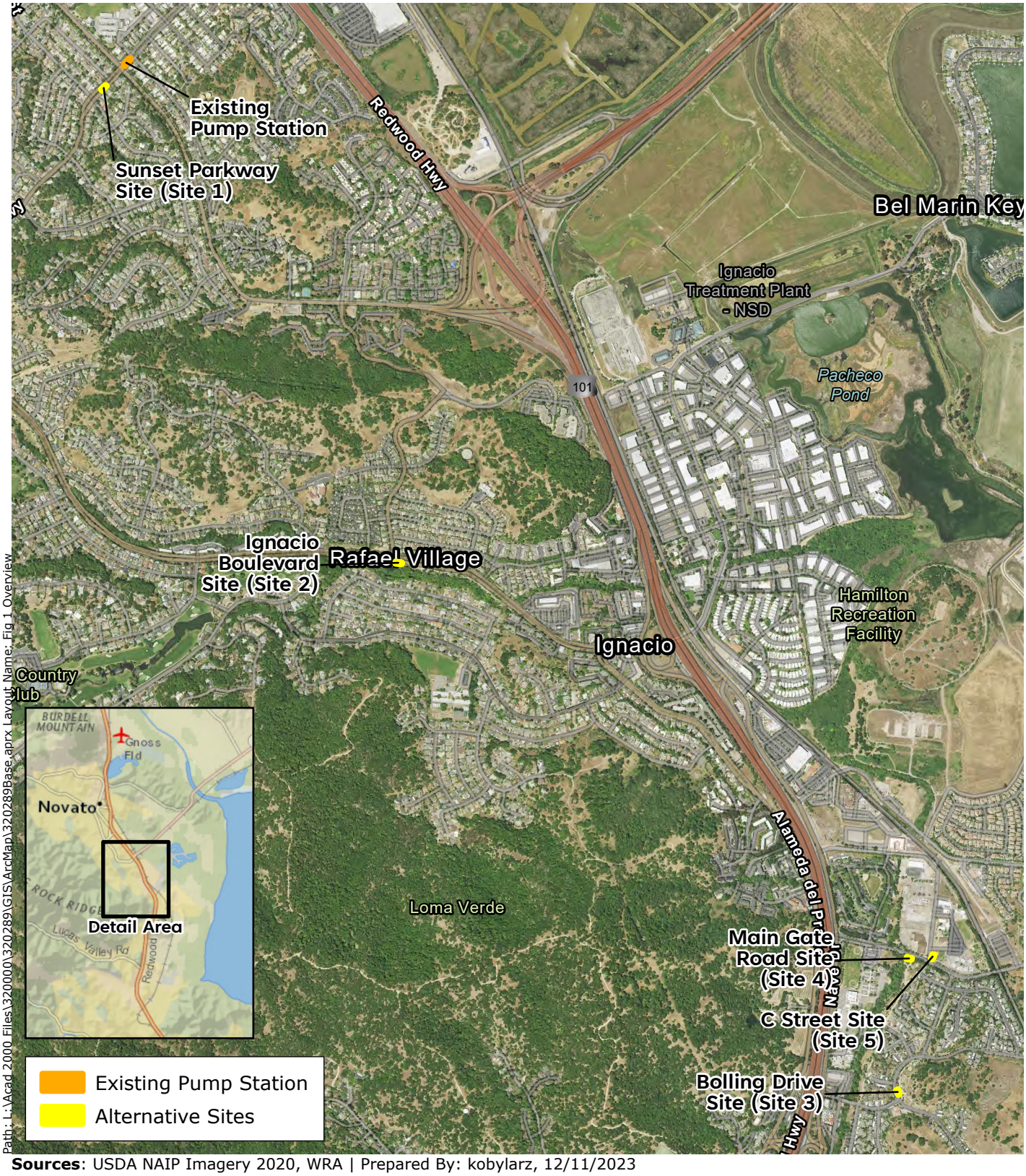

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 12/11/2023

Figure 1. Project Regional Location Map

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 0.25 0.5 Miles

N

wra Environmental Consultants

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 1/4/2024

Figure 2. Land Cover Types within the Project Site and Staging Areas: Sunset Parkway Site (Site 1)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

N

wra Environmental Consultants

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 1/4/2024

Figure 3. Land Cover Types within the Project Site and Staging Areas: Ignacio Boulevard Site (Site 2)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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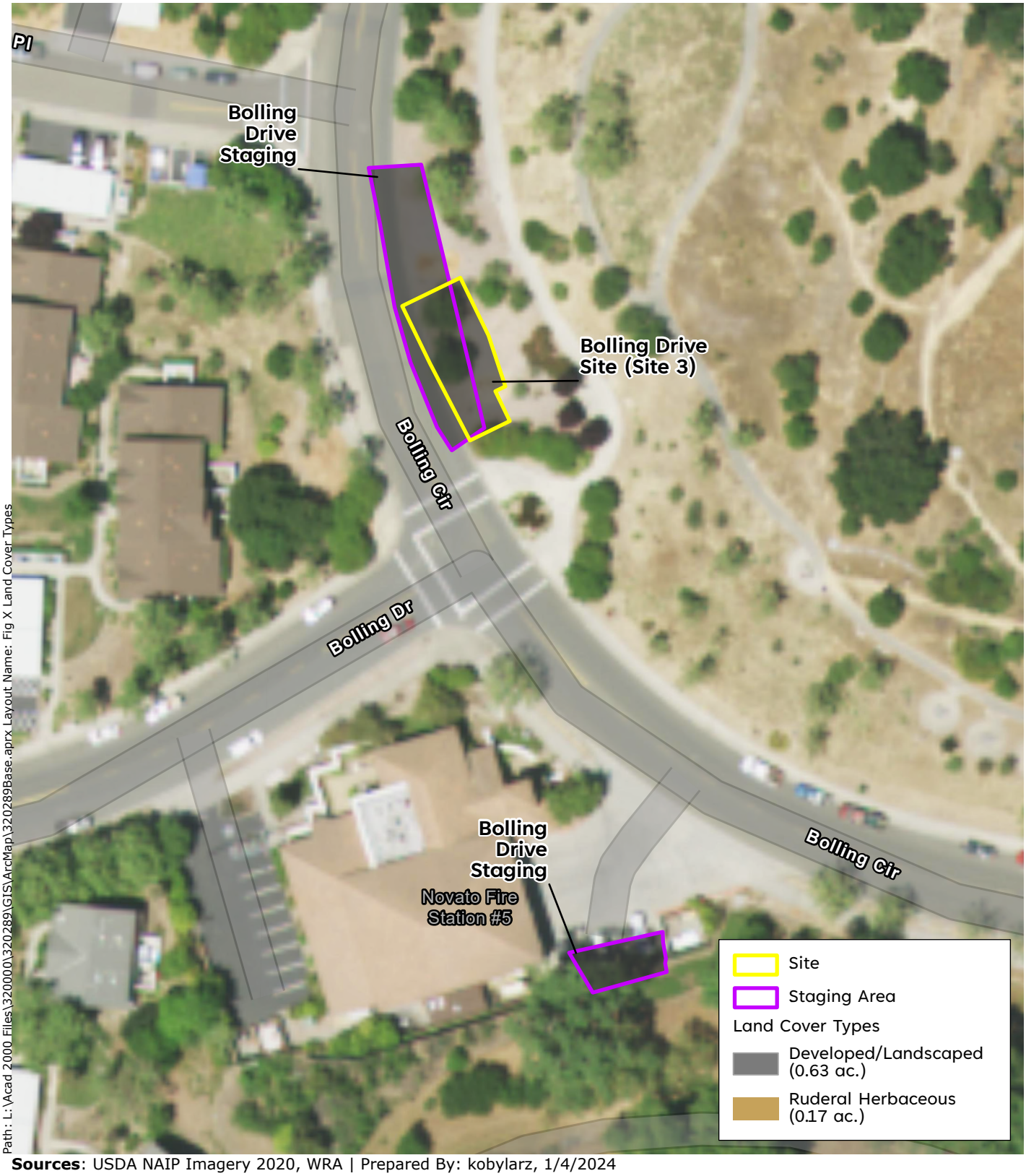
wra Environmental Consultants



Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 1/4/2024

Figure 4. Land Cover Types within the Project Site and Staging Areas: Bolling Drive Site (Site 3)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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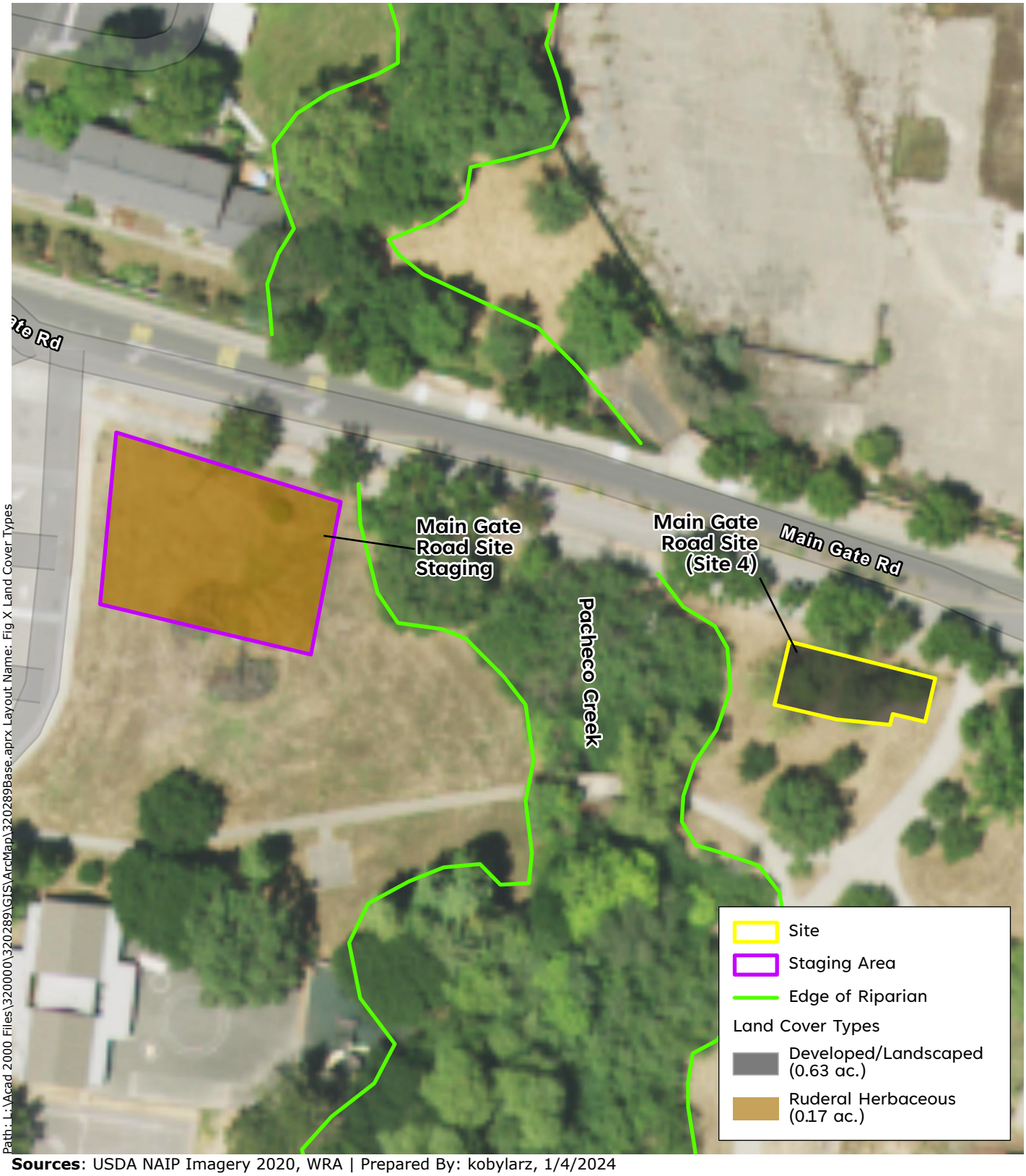

Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 1/4/2024

Figure 5. Land Cover Types within the Project Site and Staging Areas: Main Gate Road Site (Site 4)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

0 50 100 Feet

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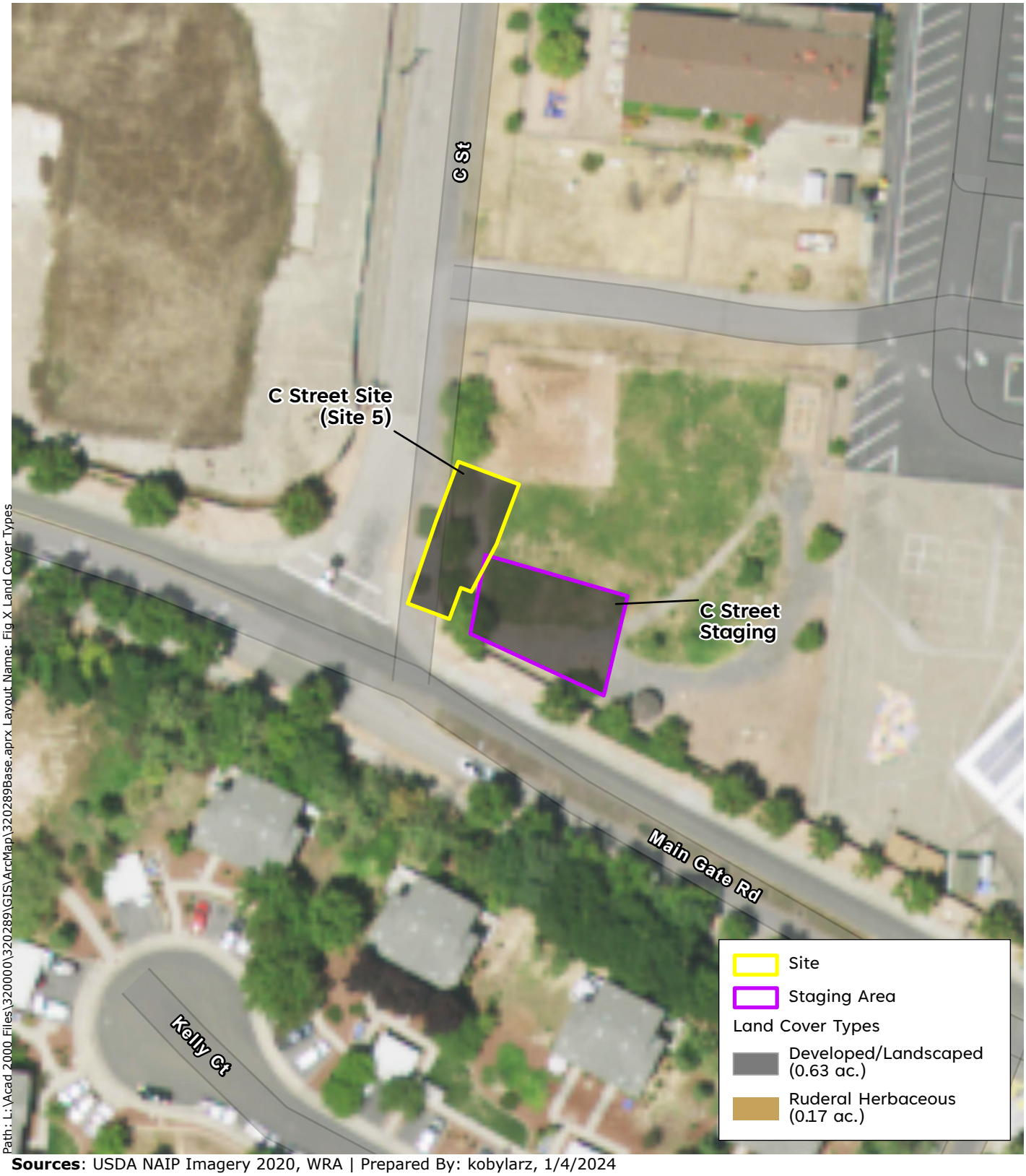
wra Environmental Consultants



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Sources: USDA NAIP Imagery 2020, WRA | Prepared By: kobylarz, 1/4/2024

Figure 6. Land Cover Types within the Project Site and Staging Areas: C Street Site (Site 5)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

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APPENDIX B. SPECIES OBSERVED IN AND AROUND THE STUDY AREA

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Appendix B. Plant species observed in the Study Area on March 29 and December 13, 2023

SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS[1]	INVASIVE STATUS[2]	WETLAND INDICATOR[3]
Achillea millefolium	Common yarrow	Native	perennial herb	-	-	FACU
Avena barbata	Slim oat	non-native (invasive)	annual, perennial grass	-	Moderate	-
Arctostaphylos sp.	manzanita	Native	Shrub	-	-	-
Baccharis pilularis	Coyote brush	native	shrub	-	-	-
Bromus diandrus	Ripgut brome	non-native (invasive)	annual grass	-	Moderate	-
Bromus hordeaceus	Soft chess	non-native (invasive)	annual grass	-	Limited	FACU
Centaurea solstitialis	Yellow starthistle	non-native (invasive)	annual herb	-	High	-
Cercis occidentalis	western redbud	native	tree, shrub	-	-	-
Cirsium vulgare	Bull thistle	non-native (invasive)	perennial herb	-	Moderate	FACU
Cortaderia jubata	Andean pampas grass	non-native (invasive)	perennial grass	-	High	FACU
Cotoneaster sp.	Cotoneaster	non-native (invasive)	shrub	-	-	-
Dittrichia graveolens	Stinkwort	non-native (invasive)	annual herb	-	Moderate	-
Erodium botrys	broadleaf filaree	non-native	annual herb	-	-	FACU
Erodium cicutarium	Red stemmed filaree	non-native (invasive)	annual herb	-	Limited	-
Festuca perennis	Italian rye grass	non-native (invasive)	annual, perennial grass	-	Moderate	FAC
Foeniculum vulgare	Fennel	non-native (invasive)	perennial herb	-	High	-
Galium aparine	Cleavers	native	annual herb	-	-	FACU
Geranium dissectum	Wild geranium	non-native (invasive)	annual herb	-	Limited	-
Geranium molle	Crane's bill geranium	non-native	annual, perennial herb	-	-	-
Hedera helix	English ivy	non-native (invasive)	vine, shrub	-	High	FACU
Helminthotheca echioides	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	-	Limited	FAC
Hirschfeldia incana	Short-podded mustard	non-native (invasive)	perennial herb	-	Moderate	-
Hypochaeris radicata	Hairy cats ear	non-native (invasive)	perennial herb	-	Moderate	FACU
Juniperus sp.	Juniper	-	shrub	-	-	-
Lagerstroemia indica	Crepe myrtle	Non-native	Tree	-	-	-
Lactuca serriola	Prickly lettuce	non-native	annual herb	-	-	FACU

SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS[1]	INVASIVE STATUS[2]	WETLAND INDICATOR[3]
Ligustrum lucidum	Glossy privet	non-native (invasive)	tree, shrub	-	Limited	-
Lotus corniculatus	bird's foot trefoil	non-native	perennial herb	-	-	FAC
Madia sp.	Tarweed	-	-	-	-	-
Malva sp.	Mallow	Non-native	Annual herb	-	-	-
Medicago polymorpha	Bur clover	non-native (invasive)	annual herb	-	Limited	FACU
Morus alba	Mulberry	Non-native	tree	-	-	-
Olea europeaea	Olive	Non-native	tree	-	-	-
Oxalis pes-caprae	Bermuda buttercup	non-native (invasive)	perennial herb	-	Moderate	-
Paspalum dilatatum	Dallis grass	non-native	perennial grass	-	-	FAC
Platanus x hispanica	Lodon plane trees	Non-native	Tree	-	-	-
Platanus racemosa	California sycamore	native	tree	-	-	FAC
Plantago lanceolata	Ribwort	non-native (invasive)	perennial herb	-	Limited	FAC
Pseudognaphalium luteoalbum	Jersey cudweed	non-native	annual herb	-	-	FAC
Quercus agrifolia	Coast live oak	native	tree	-	-	-
Quercus lobata	Valley oak	native	tree	-	-	FACU
Rhamnus alaternus	Italian buckthorn	non-native	shrub	-	Watch	FACU
Ribes sanguineum	flowering currant	native	shrub	-	-	UPL
Rosmarinus officinalis	Rosemary	non-native	shrub	-	-	-
Rubus armeniacus	Himalayan blackberry	non-native (invasive)	shrub	-	High	FAC
Rumex crispus	Curly dock	non-native (invasive)	perennial herb	-	Limited	FAC
Senecio vulgaris	Common groundsel	non-native	annual herb	-	-	FACU
Solanum sp.	Wild nightshade	Non-native	Annual herb	-	-	-
Sonchus oleraceus	Common sow thistle	non-native	annual herb	-	-	UPL
Taraxacum officinale	Red seeded dandelion	non-native	perennial herb	-	-	FACU
Tulbaghia violacea	Society garlic	non-native	Perennial herb	-	-	-
Ulmus parvifolia	Siberian elm	non-native	tree	-	-	UPL

SCIENTIFIC NAME	COMMON NAME	LIFE FORM	ORIGIN	RARE STATUS[1]	INVASIVE STATUS[2]	WETLAND INDICATOR[3]
Vinca major	Greater periwinkle	non-native (invasive)	perennial herb	-	Moderate	FACU
Washingtonia robusta	Mexican fan palm	non-native (invasive)	tree	-	Moderate	FACW

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012), *The Jepson Flora Project* (eFlora 2024), and *Marin Flora* (Howell et al. 2007); nomenclature follows *The Jepson Flora Project* (eFlora 2024) unless otherwise noted

Sp.: “species”, intended to indicate that the observer was confident in the identity of the genus but uncertain which species
Cf.: “*confer*” or “compared with”, intended to indicate a species appeared to the observer to be specific, but was not identified based on diagnostic characters

[1]Rare Status: The CNPS Inventory of Rare and Endangered Plants (CNPS 2024a)

FE:	Federal Endangered
FT:	Federal Threatened
SE:	State Endangered
ST:	State Threatened
SR:	State Rare
CRPR 1A:	Plants presumed extirpated in California and either rare or extinct elsewhere
CRPR 1B:	Plants rare, threatened, or endangered in California and elsewhere
CRPR 2A:	Plants presumed extirpated in California, but more common elsewhere
CRPR 2B:	Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 3:	Plants about which we need more information – a review list
CRPR 4:	Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2006)

High:	Severe ecological impacts; high rates of dispersal and establishment; most are widely distributed ecologically.
Moderate:	Substantial and apparent ecological impacts; moderate-high rates of dispersal, establishment dependent on disturbance; limited moderate distribution ecologically
Limited:	Minor or not well documented ecological impacts; low-moderate rate of invasiveness; limited distribution ecologically
Assessed:	Assessed by Cal-IPC and determined to not be an existing current threat

[3]Wetland Status: National List of Plant Species that Occur in Wetlands, Arid West Region (Corps 2020)

OBL:	Almost always a hydrophyte, rarely in uplands
FACW:	Usually a hydrophyte, but occasionally found in uplands
FAC:	Commonly either a hydrophyte or non-hydrophyte
FACU:	Occasionally a hydrophyte, but usually found in uplands
UPL:	Rarely a hydrophyte, almost always in uplands
NL:	Rarely a hydrophyte, almost always in uplands
NI:	No information; not factored during wetland delineation

APPENDIX C. SPECIAL-STATUS SPECIES POTENTIAL TABLE

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Appendix C. Potential for Special-status Species to Occur in the Study Area. List compiled from the CDFW BIOS database (CDFW 2023a), USFWS IPaC Report (USFWS 2023), and CNPS Electronic Inventory (CNPS 2023a) searches. The Novato, Petaluma, Petaluma River, Sears Point, San Geronimo, Petaluma Point, Bolinas, San Rafael, and San Quentin USGS 7.5' quadrangles were included in the search.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
PLANTS				
Franciscan onion *Allium peninsulare var. franciscanum*	Rank 1B.2	Cismontane woodland, valley and foothill grassland. Elevation ranges from 170 to 1000 feet (52 to 305 meters). Blooms (Apr)May-Jun.	**No Potential.** The Study Area does not contain woodland or grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Sonoma alopecurus *Alopecurus aequalis var. sonomensis*	FE, Rank 1B.1	Marshes and swamps (freshwater), riparian scrub. Elevation ranges from 15 to 1200 feet (5 to 365 meters). Blooms May-Jul.	**No Potential.** The Study Area does not contain marsh, swamp or riparian scrub habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Napa false indigo *Amorpha californica var. napensis*	Rank 1B.2	Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 165 to 6560 feet (50 to 2000 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain forest or woodland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Cismontane woodland, coastal bluff scrub, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain Cismontane woodland, coastal bluff scrub, valley or foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
coast rockcress *Arabis blepharophylla*	Rank 4.3	Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 10 to 3610 feet (3 to 1100 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain forest or scrub habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Mt. Tamalpais manzanita *Arctostaphylos montana ssp. montana*	Rank 1B.3	Chaparral, valley and foothill grassland. Elevation ranges from 525 to 2495 feet (160 to 760 meters). Blooms Feb-Apr.	**No Potential.** The Study Area does not contain chaparral or gassland to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Marin manzanita *Arctostaphylos virgata*	Rank 1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, north coast coniferous forest. Elevation ranges from 195 to 2295 feet (60 to 700 meters). Blooms Jan-Mar.	**No Potential.** The Study Area does not contain chaparral or coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.
Carlotta Hall's lace fern *Aspidotis carlotta-halliae*	Rank 4.2	Chaparral, cismontane woodland. Elevation ranges from 330 to 4595 feet (100 to 1400 meters). Blooms Jan-Dec.	**No Potential.** The Study Area does not contain chaparral or cismontane woodland to support this species.	**Not Present.** No further actions are recommended for this species.
Brewer's milk-vetch *Astragalus breweri*	Rank 4.2	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (openings, often gravelly). Elevation ranges from 295 to 2395 feet (90 to 730 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain chaparral, meadows and seeps, grassland, or cismontane woodland to support this species.	**Not Present.** No further actions are recommended for this species.
coastal marsh milk-vetch *Astragalus pycnostachyus var. pycnostachyus*	Rank 1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, streamsides). Elevation ranges from 0 to 180 feet (0 to 55 meters). Blooms (Apr)Jun-Oct.	**No Potential.** The Study Area does not contain Coastal dunes (mesic), coastal scrub, marshes or swamps to support this species.	**Not Present.** No further actions are recommended for this species.
alkali milk-vetch *Astragalus tener var. tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools. Elevation ranges from 5 to 195 feet (1 to 60 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain playas, valley and foothill grassland, or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.
Sonoma sunshine *Blennosperma bakeri*	FE, SE, Rank 1B.1	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 35 to 360 feet (10 to 110 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain valley and foothill grassland or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Thurber's reed grass *Calamagrostis crassiglumis*	Rank 2B.1	Coastal scrub (mesic), marshes and swamps (freshwater). Elevation ranges from 35 to 195 feet (10 to 60 meters). Blooms May-Aug.	**No Potential.** The Study Area does not contain coastal scrub, or freshwater marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
serpentine reed grass *Calamagrostis ophitidis*	Rank 4.3	Chaparral (openings, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland. Elevation ranges from 295 to 3495 feet (90 to 1065 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain chaparral, lower montane coniferous forest, meadows and seeps, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Brewer's calandrinia *Calandrinia breweri*	Rank 4.2	Chaparral, coastal scrub. Elevation ranges from 35 to 4005 feet (10 to 1220 meters). Blooms (Jan)Mar-Jun.	**No Potential.** The Study Area does not contain chaparral or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
Tiburon mariposa-lily *Calochortus tiburonensis*	FT, ST, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 165 to 490 feet (50 to 150 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Oakland star-tulip *Calochortus umbellatus*	Rank 4.2	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 330 to 2295 feet (100 to 700 meters). Blooms Mar-May.	**No Potential.** The Study Area does not broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
pink star-tulip *Calochortus uniflorus*	Rank 4.2	Coastal prairie, coastal scrub, meadows and seeps, north coast coniferous forest. Elevation ranges from 35 to 3510 feet (10 to 1070 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain coastal prairie, coastal scrub, meadows and seeps, or north coast coniferous forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Mt. Saint Helena morning-glory *Calystegia collina ssp. oxyphylla*	Rank 4.2	Chaparral, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 915 to 3315 feet (279 to 1010 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain chaparral, lower montane coniferous forest, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
seaside bittercress *Cardamine angulata*	Rank 2B.2	Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 50 to 3000 feet (15 to 915 meters). Blooms (Jan)Mar-Jul.	**No Potential.** The Study Area does not contain lower montane coniferous forest, or north coast coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.
Lyngbye's sedge *Carex lyngbyei*	Rank 2B.2	Marshes and swamps (brackish, freshwater). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Aug.	**No Potential.** The Study Area does not contain marshes or swamps to support this species.	**Not Present.** No further actions are recommended for this species.
Tiburon paintbrush *Castilleja affinis var. neglecta*	FE, ST, Rank 1B.2	Valley and foothill grassland (serpentine). Elevation ranges from 195 to 1310 feet (60 to 400 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
johnny-nip *Castilleja ambigua var. ambigua*	Rank 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools (margins). Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug.	**No Potential.** The Study Area does not contain coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.
Nicasio ceanothus *Ceanothus decornutus*	Rank 1B.2	Chaparral (maritime). Elevation ranges from 770 to 950 feet (235 to 290 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain chaparral to support this species.	**Not Present.** No further actions are recommended for this species.
glory brush *Ceanothus gloriosus var. exaltatus*	Rank 4.3	Chaparral. Elevation ranges from 100 to 2000 feet (30 to 610 meters). Blooms Mar-Jun(Aug).	**No Potential.** The Study Area does not contain chaparral to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Point Reyes ceanothus *Ceanothus gloriosus var. gloriosus*	Rank 4.3	Closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain closed-cone coniferous forest, coastal bluff scrub, coastal dunes, or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
Mason's ceanothus *Ceanothus masonii*	SR, Rank 1B.2	Chaparral (openings, rocky, serpentine). Elevation ranges from 755 to 1640 feet (230 to 500 meters). Blooms Mar-Apr.	**No Potential.** The Study Area does not contain chaparral to support this species.	**Not Present.** No further actions are recommended for this species.
Kern ceanothus *Ceanothus pinetorum*	Rank 4.3	Lower montane coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Elevation ranges from 3410 to 9005 feet (1040 to 2745 meters). Blooms May-Jul.	**No Potential.** The Study Area does not contain coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.
pappose tarplant *Centromadia parryi ssp. parryi*	Rank 1B.2	Chaparral, coastal prairie, marshes and swamps (coastal salt), meadows and seeps, valley and foothill grassland (vernally mesic). Elevation ranges from 0 to 1380 feet (0 to 420 meters). Blooms May-Nov.	**No Potential.** The Study Area does not contain chaparral, coastal prairie, marshes and swamps (coastal salt), meadows and seeps, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Point Reyes salty bird's-beak *Chloropyron maritimum ssp. palustre*	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain coastal marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
soft salty bird's-beak *Chloropyron molle ssp. molle*	FE, SR, Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Jun-Nov.	**No Potential.** The Study Area does not contain coastal marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
San Francisco Bay spineflower *Chorizanthe cuspidata var. cuspidata*	Rank 1B.2	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 10 to 705 feet (3 to 215 meters). Blooms Apr-Jul(Aug).	**No Potential.** The Study Area does not contain coastal bluff scrub, coastal dunes, coastal prairie, or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
Sonoma spineflower *Chorizanthe valida*	FE, SE, Rank 1B.1	Coastal prairie (sandy). Elevation ranges from 35 to 1000 feet (10 to 305 meters). Blooms Jun-Aug.	**No Potential.** The Study Area does not contain coastal prarie to support this species.	**Not Present.** No further actions are recommended for this species.
Mt. Tamalpais thistle *Cirsium hydrophilum var. vaseyi*	Rank 1B.2	Broadleafed upland forest, chaparral, meadows and seeps. Elevation ranges from 785 to 2035 feet (240 to 620 meters). Blooms May-Aug.	**No Potential.** The Study Area does not contain broadleafed upland forest, chaparral, or meadows and seeps. to support this species.	**Not Present.** No further actions are recommended for this species.
seaside cistanthe *Cistanthe maritima*	Rank 4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 985 feet (5 to 300 meters). Blooms (Feb)Mar-Jun(Aug).	**No Potential.** The Study Area does not contain coastal bluff scrub, coastal scrub, valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
round-headed collinsia *Collinsia corymbosa*	Rank 1B.2	Coastal dunes. Elevation ranges from 0 to 65 feet (0 to 20 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain coastal dunes to support this species.	**Not Present.** No further actions are recommended for this species.
serpentine collomia *Collomia diversifolia*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 1970 feet (200 to 600 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain chaparral or cismontane woodland to support this species.	**Not Present.** No further actions are recommended for this species.
California lady's-slipper *Cypripedium californicum*	Rank 4.2	Bogs and fens, lower montane coniferous forest. Elevation ranges from 100 to 9025 feet (30 to 2750 meters). Blooms Apr-Aug(Sep).	**No Potential.** The Study Area does not contain bogs and fens or lower montane coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Baker's larkspur *Delphinium bakeri*	FE, SE, Rank 1B.1	Broadleafed upland forest, coastal scrub, valley and foothill grassland. Elevation ranges from 260 to 1000 feet (80 to 305 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain broadleafed upland forest, coastal scrub, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
golden larkspur *Delphinium luteum*	FE, SR, Rank 1B.1	Chaparral, coastal prairie, coastal scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Mar-May.	**No Potential.** The Study Area does not chaparral, coastal prairie, or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
silverskin lichen *Dermatocarpon meiophyllizum*	Rank 2B.3	Coastal prairie, lower montane coniferous forest, north coast coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Elevation ranges from 970 to 11465 feet (295 to 3495 meters). Blooms .	**No Potential.** The Study Area does not contain prairie or forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
western dichondra *Dichondra occidentalis*	Rank 4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 165 to 1640 feet (50 to 500 meters). Blooms (Jan)Mar-Jul.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, coastal scrub, valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
western leatherwood *Dirca occidentalis*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, closed-cone coniferous forest, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr).	**No Potential.** The Study Area does not contain forest or riparian woodland to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
dwarf downingia *Downingia pusilla*	Rank 2B.2	Valley and foothill grassland (mesic), vernal pools. Elevation ranges from 5 to 1460 feet (1 to 445 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain valley and foothill grassland or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.
small spikerush *Eleocharis parvula*	Rank 4.3	Marshes and swamps. Elevation ranges from 5 to 9910 feet (1 to 3020 meters). Blooms (Apr)Jun-Aug(Sep).	**No Potential.** The Study Area does not contain Marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
California bottle-brush grass *Elymus californicus*	Rank 4.3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms May-Aug(Nov).	**No Potential.** The Study Area does not contain forest or riparian woodland to support this species.	**Not Present.** No further actions are recommended for this species.
Koch's cord moss *Entosthodon kochii*	Rank 1B.3	Cismontane woodland (soil). Elevation ranges from 590 to 3280 feet (180 to 1000 meters). Blooms .	**No Potential.** The Study Area does not contain woodland to support this species.	**Not Present.** No further actions are recommended for this species.
streamside daisy *Erigeron biolettii*	Rank 3	Broadleafed upland forest, cismontane woodland, north coast coniferous forest. Elevation ranges from 100 to 3610 feet (30 to 1100 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain forest or riparian woodland to support this species.	**Not Present.** No further actions are recommended for this species.
Tiburon buckwheat *Eriogonum luteolum var. caninum*	Rank 1B.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms May-Sep.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, coastal prairie, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
San Francisco wallflower *Erysimum franciscanum*	Rank 4.2	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland. Elevation ranges from 0 to 1805 feet (0 to 550 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain chaparral, coastal dunes, coastal scrub, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
bare monkeyflower *Erythranthe nudata*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 655 to 2295 feet (200 to 700 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain chaparral or cismontane woodland to support this species.	**Not Present.** No further actions are recommended for this species.
minute pocket moss *Fissidens pauperculus*	Rank 1B.2	North coast coniferous forest (damp coastal soil). Elevation ranges from 35 to 3360 feet (10 to 1024 meters). Blooms .	**No Potential.** The Study Area does not contain coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.
Marin checker lily *Fritillaria lanceolata var. tristulis*	Rank 1B.1	Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 50 to 490 feet (15 to 150 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain coastal bluff scrub, coastal prairie, or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
fragrant fritillary *Fritillaria liliacea*	Rank 1B.2	Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 10 to 1345 feet (3 to 410 meters). Blooms Feb-Apr.	**No Potential.** The Study Area does not contain cismontane woodland, coastal prairie, coastal scrub, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
blue coast gilia *Gilia capitata ssp. chamissonis*	Rank 1B.1	Coastal dunes, coastal scrub. Elevation ranges from 5 to 655 feet (2 to 200 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain chaparral or cismontane woodland to support this species.	**Not Present.** No further actions are recommended for this species.
woolly-headed gilia *Gilia capitata ssp. tomentosa*	Rank 1B.1	Coastal bluff scrub, valley and foothill grassland. Elevation ranges from 35 to 720 feet (10 to 220 meters). Blooms May-Jul.	**No Potential.** The Study Area does not contain coastal dunes or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
dark-eyed gilia *Gilia millefoliata*	Rank 1B.2	Coastal dunes. Elevation ranges from 5 to 100 feet (2 to 30 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain coastal dunes to support this species.	**Not Present.** No further actions are recommended for this species.
San Francisco gumplant *Grindelia hirsutula var. maritima*	Rank 3.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland. Elevation ranges from 50 to 1310 feet (15 to 400 meters). Blooms Jun-Sep.	**No Potential.** The Study Area does not contain coastal scrub or foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Diablo helianthella *Helianthella castanea*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 195 to 4265 feet (60 to 1300 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
congested-headed hayfield *tarplant* *Hemizonia congesta ssp. congesta*	Rank 1B.2	Valley and foothill grassland. Elevation ranges from 65 to 1835 feet (20 to 560 meters). Blooms Apr-Nov.	**No Potential.** The Study Area does not contain valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Marin western flax *Hesperolinon congestum*	FT, ST, Rank 1B.1	Chaparral, valley and foothill grassland. Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain chaparral or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Santa Cruz tarplant *Holocarpha macradenia*	FT, SE, Rank 1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 720 feet (10 to 220 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain coastal prairie, coastal scrub, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
thin-lobed horkelia *Horkelia tenuiloba*	Rank 1B.2	Broadleafed upland forest, chaparral, valley and foothill grassland. Elevation ranges from 165 to 1640 feet (50 to 500 meters). Blooms May-Jul(Aug).	**No Potential.** The Study Area does not broadleafed upland forest, chaparral, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
harlequin lotus *Hosackia gracilis*	Rank 4.2	Broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul.	**No Potential.** The Study Area does not contain broadleafed upland forest, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, meadows and seeps, north coast coniferous forest, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
coast iris *Iris longipetala*	Rank 4.2	Coastal prairie, lower montane coniferous forest, meadows and seeps. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms Mar-May(Jun).	**No Potential.** The Study Area does not contain coastal prairie, lower montane coniferous forest, or meadows and seeps to support this species.	**Not Present.** No further actions are recommended for this species.
southwestern spiny rush *Juncus acutus ssp. leopoldii*	Rank 4.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt), meadows and seeps (alkaline seeps). Elevation ranges from 10 to 2955 feet (3 to 900 meters). Blooms (Mar)May-Jun.	**No Potential.** The Study Area does not contain coastal dunes, coastal scrub, marshes and swamps, or meadows and seeps to support this species.	**Not Present.** No further actions are recommended for this species.
small groundcone *Kopsiopsis hookeri*	Rank 2B.3	Lower montane coniferous forest, north coast coniferous forest, upper montane coniferous forest. Elevation ranges from 295 to 2905 feet (90 to 885 meters). Blooms Apr-Aug.	**No Potential.** The Study Area does not contain forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not cismontane woodland, playas (alkaline), valley and foothill grassland, or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.
bristly leptosiphon *Leptosiphon aureus*	Rank 4.2	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland. Elevation ranges from 180 to 4920 feet (55 to 1500 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, coastal prairie, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
large-flowered leptosiphon *Leptosiphon grandiflorus*	Rank 4.2	Cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug.	**No Potential.** The Study Area does not contain cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
woolly-headed lessingia *Lessingia hololeuca*	Rank 3	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 50 to 1000 feet (15 to 305 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain broadleafed upland forest, coastal scrub, lower montane coniferous forest, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Tamalpais lessingia *Lessingia micradenia var. micradenia*	Rank 1B.2	Chaparral, valley and foothill grassland. Elevation ranges from 330 to 1640 feet (100 to 500 meters). Blooms (Jun)Jul-Oct.	**No Potential.** The Study Area does not contain chaparral or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Pitkin Marsh lily *Lilium pardalinum ssp. pitkinense*	FE, SE, Rank 1B.1	Cismontane woodland, marshes and swamps (freshwater), meadows and seeps. Elevation ranges from 115 to 215 feet (35 to 65 meters). Blooms Jun-Jul.	**No Potential.** The Study Area does not contain cismontane woodland, marshes and swamps, or meadows and seeps habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 150 to 2705 feet (45 to 825 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain broadleafed upland forest, chaparral, cismontane woodland, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
marsh microseris *Microseris paludosa*	Rank 1B.2	Cismontane woodland, closed-cone coniferous forest, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul).	**No Potential.** The Study Area does not contain cismontane woodland, closed-cone coniferous forest, coastal scrub, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
elongate copper moss *Mielichhoferia elongata*	Rank 4.3	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest. Elevation ranges from 0 to 6430 feet (0 to 1960 meters). Blooms .	**No Potential.** The Study Area does not contain broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, or subalpine coniferous forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
cotula navarretia *Navarretia cotulifolia*	Rank 4.2	Chaparral, cismontane woodland, valley and foothill grassland. Elevation ranges from 15 to 6005 feet (4 to 1830 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Baker's navarretia *Navarretia leucocephala ssp. bakeri*	Rank 1B.1	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, vernal pools. Elevation ranges from 15 to 5710 feet (5 to 1740 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, or vernal pool habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Marin County navarretia *Navarretia rosulata*	Rank 1B.2	Chaparral, closed-cone coniferous forest. Elevation ranges from 655 to 2085 feet (200 to 635 meters). Blooms May-Jul.	**No Potential.** The Study Area does not contain chaparral or forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
white-rayed pentachaeta *Pentachaeta bellidiflora*	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland (often serpentine). Elevation ranges from 115 to 2035 feet (35 to 620 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain cismontane woodland or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Gairdner's yampah *Perideridia gairdneri ssp. gairdneri*	Rank 4.2	Broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools. Elevation ranges from 0 to 2000 feet (0 to 610 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain broadleafed upland forest, chaparral, coastal prairie, valley and foothill grassland, or vernal pool habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Michael's rein orchid *Piperia michaelii*	Rank 4.2	Chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, lower montane coniferous forest. Elevation ranges from 10 to 3000 feet (3 to 915 meters). Blooms Apr-Aug.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, closed-cone coniferous forest, coastal bluff scrub, coastal scrub, or lower montane coniferous forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
hairless popcornflower *Plagiobothrys glaber*	Rank 1A	Marshes and swamps (coastal salt), meadows and seeps (alkaline). Elevation ranges from 50 to 590 feet (15 to 180 meters). Blooms Mar-May.	**No Potential.** The Study Area does not marshes and swamps or meadows and seeps to support this species.	**Not Present.** No further actions are recommended for this species.
Petaluma popcornflower *Plagiobothrys mollis var. vestitus*	Rank 1A	Marshes and swamps (coastal salt), valley and foothill grassland (mesic). Elevation ranges from 35 to 165 feet (10 to 50 meters). Blooms Jun-Jul.	**No Potential.** The Study Area does not contain marshes and swamps or valley and foothill grassland habitat to support this species.	**Not Present.** No further actions are recommended for this species.
North Coast semaphore grass *Pleuropogon hooverianus*	ST, Rank 1B.1	Broadleafed upland forest, meadows and seeps, north coast coniferous forest. Elevation ranges from 35 to 2200 feet (10 to 671 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain forest or meadows and seeps to support this species.	**Not Present.** No further actions are recommended for this species.
nodding semaphore grass *Pleuropogon refractus*	Rank 4.2	Lower montane coniferous forest, meadows and seeps, north coast coniferous forest, riparian forest. Elevation ranges from 0 to 5250 feet (0 to 1600 meters). Blooms (Feb-Mar)Apr-Aug.	**No Potential.** The Study Area does not contain lower montane coniferous forest, meadows and seeps, north coast coniferous forest, or riparian forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Marin knotweed *Polygonum marinense*	Rank 3.1	Marshes and swamps (brackish, coastal salt). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug(Oct).	**No Potential.** The Study Area does not contain marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
Tamalpais oak *Quercus parvula var. tamalpaisensis*	Rank 1B.3	Lower montane coniferous forest. Elevation ranges from 330 to 2460 feet (100 to 750 meters). Blooms Mar-Apr.	**No Potential.** The Study Area does not contain coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Lobb's aquatic buttercup *Ranunculus lobbii*	Rank 4.2	Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 50 to 1540 feet (15 to 470 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain cismontane woodland, north coast coniferous forest, valley and foothill grassland, or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.
Sanford's arrowhead *Sagittaria sanfordii*	Rank 1B.2	Marshes and swamps (shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov).	**No Potential.** The Study Area does not contain marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
Point Reyes checkerbloom *Sidalcea calycosa ssp. rhizomata*	Rank 1B.2	Marshes and swamps (freshwater, near coast). Elevation ranges from 10 to 245 feet (3 to 75 meters). Blooms Apr-Sep.	**No Potential.** The Study Area does not contain marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
Marin checkerbloom *Sidalcea hickmanii ssp. viridis*	Rank 1B.1	Chaparral (serpentine). Elevation ranges from 165 to 1410 feet (50 to 430 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain chaparral to support this species.	**Not Present.** No further actions are recommended for this species.
long-styled sand-spurrey *Spergularia macrotheca var. longistyla*	Rank 1B.2	Marshes and swamps, meadows and seeps. Elevation ranges from 0 to 835 feet (0 to 255 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain marshes and swamps or meadows and seeps to support this species.	**Not Present.** No further actions are recommended for this species.
Santa Cruz microseris *Stebbinsoseris decipiens*	Rank 1B.2	Broadleafed upland forest, chaparral, closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 35 to 1640 feet (10 to 500 meters). Blooms Apr-May.	**No Potential.** The Study Area does not contain broadleafed upland forest, chaparral, closed-cone coniferous forest, coastal prairie, coastal scrub, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Mount Burdell jewelflower *Streptanthus anomalus*	Rank 1B.1	Cismontane woodland (openings). Elevation ranges from 165 to 490 feet (50 to 150 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain cismontane woodland to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Tamalpais jewelflower *Streptanthus batrachopus*	Rank 1B.3	Chaparral, closed-cone coniferous forest. Elevation ranges from 1000 to 2135 feet (305 to 650 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain chaparral or closed-cone coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.
Tiburon jewelflower *Streptanthus glandulosus ssp. niger*	FE, SE, Rank 1B.1	Valley and foothill grassland (serpentine). Elevation ranges from 100 to 490 feet (30 to 150 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Mt. Tamalpais bristly jewelflower *Streptanthus glandulosus ssp. pulchellus*	Rank 1B.2	Chaparral, valley and foothill grassland. Elevation ranges from 490 to 2625 feet (150 to 800 meters). Blooms May-Jul(Aug).	**No Potential.** The Study Area does not contain chaparral or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
Suisun Marsh aster *Symphyotrichum lentum*	Rank 1B.2	Marshes and swamps (brackish, freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms (Apr)May-Nov.	**No Potential.** The Study Area does not contain marshes and swamps to support this species.	**Not Present.** No further actions are recommended for this species.
marsh zigadenus *Toxicoscordion fontanum*	Rank 4.2	Chaparral, cismontane woodland, lower montane coniferous forest, marshes and swamps, meadows and seeps. Elevation ranges from 50 to 3280 feet (15 to 1000 meters). Blooms Apr-Jul.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, lower montane coniferous forest, marshes and swamps, or meadows and seeps. to support this species.	**Not Present.** No further actions are recommended for this species.
two-fork clover *Trifolium amoenum*	FE, Rank 1B.1	Coastal bluff scrub, valley and foothill grassland (sometimes serpentine). Elevation ranges from 15 to 1360 feet (5 to 415 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain coastal bluff scrub or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain marshes and swamps, valley and foothill grassland (mesic, alkaline), or vernal pools to support this species.	**Not Present.** No further actions are recommended for this species.
Pacific Grove clover *Trifolium polyodon*	SR, Rank 1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland. Elevation ranges from 15 to 1395 feet (5 to 425 meters). Blooms Apr-Jun(Jul).	**No Potential.** The Study Area does not contain closed-cone coniferous forest, coastal prairie, meadows and seeps, or valley and foothill grassland to support this species.	**Not Present.** No further actions are recommended for this species.
coastal triquetrella *Triquetrella californica*	Rank 1B.2	Coastal bluff scrub, coastal scrub. Elevation ranges from 35 to 330 feet (10 to 100 meters). Blooms .	**No Potential.** The Study Area does not contain coastal bluff scrub or coastal scrub to support this species.	**Not Present.** No further actions are recommended for this species.
oval-leaved viburnum *Viburnum ellipticum*	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation ranges from 705 to 4595 feet (215 to 1400 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, or lower montane coniferous forest to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
WILDLIFES				
Mammals				
Antrozous pallidus pallid bat	SSC, WBWG High	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees and various manmade structures such as bridges, barns, and buildings (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Unlikely.** The Study Area does not contain woodland, forest, or other suitable habitat or roosting substrate to support this species.	**Presumed Absent.** No further actions are recommended for this species.
Aplodontia rufa phaea Point Reyes mountain beaver	SSC	Known from the coastal areas of Point Reyes. Located in north-facing slopes of hills and gullies with seeps and springs nearby. Areas typically overgrown with vegetation such as sword fern (*Polystichum munitum*) and thimbleberry (*Rubus parviflorus*).	**No Potential. A**ll known populations are on the west side of Inverness Ridge (CDFW 2023).	**Not Present.** No further actions are recommended for this species.
Corynorhinus townsendii townsendii Townsend's western big-eared bat	SSC, WBWG High	Humid coastal regions of northern and central California. Roost in limestone caves, lava tubes, mines, buildings etc. Will only roost in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to disturbance	**Unlikely.** No caves, mines, or buildings or similar structures are present in the Study Area.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
hoary bat *Lasiurus cinereus*	WBWG Medium	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths.	**Unlikely.** The Study Area lacks large, broad-leaved riparian trees of the type typically used for roosting (maples, sycamores, etc.).	**Presumed Absent.** No further actions are recommended for this species.
San Pablo vole *Microtus californicus sanpabloensis*	SSC	Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow.	**No Potential.** The Study Area does not contain saltmarsh habitat to support this species.	**Not Present.** No further actions are recommended for this species.
salt marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for dryland refugia during high tides.	**No Potential.** The Study Area does not contain saltmarsh habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Suisun shrew *Sorex ornatus sinuosus*	SSC	Tidal marshes of the northern shores of San Pablo and Suisun Bays. Require dense low-lying cover and driftweed and other litter above the mean hightide line for nesting and foraging.	**No Potential.** The Study Area does not contain saltmarsh habitat to support this species.	**Not Present.** No further actions are recommended for this species.
salt-marsh wandering shrew *Sorex vagrans halicoetes*	SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6 to 8 feet above sea level where abundant driftwood is scattered among *Salicornia*.	**No Potential.** The Study Area does not contain saltmarsh habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
American badger *Taxidea taxus*	SSC	Most abundant in drier open stages of most shrub, woodland, and herbaceous vegetation types. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**No Potential.** The Study Area is primarily developed or landscaped and is surrounded by development. The Study Area lacks open areas with herbaceous vegetation, and no burrows characteristic of this species or other indicators of presence were observed during the site visit.	**Not Present.** No further actions are recommended for this species.
Birds				
tricolored blackbird *Agelaius tricolor*	ST, SSC	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**No Potential.** The Study Area does not provide vegetated ponds or emergent marsh suitable for nesting.	**Not Present.** No further actions are recommended for this species.
grasshopper sparrow *Ammodramus savannarum*	SSC	Summer resident. Breeds in open grasslands in lowlands and foothills, generally with low- to moderate-height grasses and scattered shrubs. Well-hidden nests are placed on the ground.	**No Potential.** The Study Area lacks large expanses of open grassland.	**Not Present.** No further actions are recommended for this species.
golden eagle *Aquila chrysaetos*	BGEPA, CFP	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**No Potential.** The Study Area does not provide large cliffs or typical large trees for nesting.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
great egret *Ardea alba*	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially, usually in trees, occasionally on the ground or elevated platforms. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to documented Marin County breeding sites as per Shuford (1993); no indication of nesting (e.g., old stick nests) or presence observed during site visit.	**Presumed Absent.** No further actions are recommended for this species.
great blue heron *Ardea herodias*	non-status (breeding sites protected by CDFW)	Year-round resident. Nests colonially or semi-colonially in tall trees and cliffs, also sequestered terrestrial substrates. Breeding sites usually in close proximity to foraging areas: marshes, lake margins, tidal flats, and rivers. Forages primarily on fishes and other aquatic prey, also smaller terrestrial vertebrates.	**Unlikely.** The Study Area is not within close proximity to documented Marin County breeding sites as per Shuford (1993); no indication of nesting (e.g., old stick nests) or presence observed during site visit.	**Presumed Absent.** No further actions are recommended for this species.
short-eared owl *Asio flammeus*	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	**No Potential.** The Study Area does not provide marshland, expanses of grassland, or similar open habitats suitable for wintering.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
long-eared owl *Asio otus*	SSC	Occurs year-round in California. Nests in trees in a variety of woodland habitats, including oak and riparian, as well as tree groves. Requires adjacent open land with rodents for foraging, and the presence of old nests of larger birds (hawks, crows, magpies) for breeding.	**No Potential.** The Study Area does not provide suitable woodland or riparian habitat.	**Not Present.** No further actions are recommended for this species.
burrowing owl *Athene cunicularia*	SSC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches, and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Unlikely.** The Study Area lacks expanses of open habitat, and ground squirrel burrows for refuge; breeding distribution in Marin County restricted to eastern Baylands.	**Presumed Absent.** No further actions are recommended for this species.
Swainson's hawk *Buteo swainsoni*	ST, BCC	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Unlikely.** The Study Area does not provide nesting or foraging habitat for this species.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
western snowy plover *Charadrius alexandrines nivosus*	FT, SSC	Federal listing applies only to the Pacific coastal population. Year-round resident and winter visitor. Occurs on sandy beaches, salt pond levees, and the shores of large alkali lakes. Nests on the ground, requiring sandy, gravelly or friable soils.	**No Potential.** The Study Area does not contain zoned beaches, open mudflats, or other suitable barren habitat near water.	**Not Present.** No further actions are recommended for this species.
northern harrier *Circus cyaneus*	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**No Potential.** The Study Area is within this species' local nesting range (Shuford 1993), but areas of open grassland are small in area and adjacent to development.	**Not Present.** No further actions are recommended for this species.
black swift *Cypseloides niger*	SSC	Summer resident with a fragmented breeding distribution; most occupied areas in California either montane or coastal. Breeds in small colonies on cliffs behind or adjacent to waterfalls, in deep canyons, and sea-bluffs above surf. Forages aerially over wide areas. No modern nesting records in Napa County.	**No Potential.** The Study Area does not contain waterfalls; there are no modern breeding records for Marin County (Shuford 1993). May occur in the vicinity occasionally during migration.	**Not Present.** No further actions are recommended for this species.
snowy egret *Egretta thula*	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees, at times in sequestered beds of dense emergent vegetation (e.g., tules). Rookery sites usually situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	**Unlikely.** The Study Area is not within close proximity to documented Marin County breeding sites as per Shuford (1993); no indication of nesting (e.g., old stick nests) or presence observed during site visit.	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
white-tailed kite *Elanus leucurus*	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, woodlands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Unlikely.** The Study Area does not contain grassland or woodland to support this species. This species may occasionally fly through the Study Area.	**Presumed Absent.** No further actions are recommended for this species.
San Francisco (saltmarsh) common yellowthroat *Geothlypis trichas sinuosa*	SSC	Resident of the San Francisco Bay region, in both fresh and salt marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**No Potential.** No marsh or dense vegetation is present within the Study Area.	**Not Present.** No further actions are recommended for this species.
bald eagle *Haliaeetus leucocephalus*	BGEPA, SE, CFP	Occurs year-round in California, but primarily a winter visitor; breeding population is growing. Nests in large trees in the vicinity of larger lakes, reservoirs, and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**No Potential.** No typical nest trees are present in the Study Area nor was any indication of presence observed (e.g., large stick nests) during site visits.	**Not Present.** No further actions are recommended for this species.
yellow-breasted chat *Icteria virens*	SSC	Summer resident, occurring in riparian areas with an open canopy, very dense understory, and trees for song perches. Nests in thickets of willow (*Salix* ssp.), blackberry (*Rubus* spp.), and California grape (*Vitis californicus*).	**Unlikely.** The Study Area does not contain stands of dense riparian understory favored by this species for nesting. There are no recent observations in the vicinity (eBIrd 2023).	**Presumed Absent.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
loggerhead shrike *Lanius ludovicianus*	SSC	Year-round resident in open woodland, grasslands, savannah, and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely-foliaged shrubs or trees.	**Unlikely.** The Study Area does not provide suitable open habitat to support this species.	**Presumed Absent.** No further actions are recommended for this species.
California black rail *Laterallus jamaicensis coturniculus*	ST, CFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive and cryptic.	**No Potential.** The Study Area lacks extensive tidal or brackish marsh.	**Not Present.** No further actions are recommended for this species.
Alameda song sparrow *Melospiza melodia pusillula*	BCC, SSC	Year-round resident of salt marshes bordering the south arm of San Francisco Bay. Inhabits primarily pickleweed marshes; nests placed in marsh vegetation, typically shrubs such as gumplant.	**No Potential.** The Study Area lacks salt marsh.	**Not Present.** No further actions are recommended for this species.
San Pablo song sparrow *Melospiza melodia samuelis*	SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by halophytic wetland plants, including with shrubs in the upper marsh zone (favored for nesting). May forage in areas adjacent to marshes.	**No Potential.** The Study Area contains no tidal or brackish marsh.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
black-crowned night heron *Nycticorax nycticorax*	no status (breeding sites protected by CDFW)	Year-round resident. Nests colonially, usually in trees but also in patches of emergent vegetation. Rookery sites are often on islands and usually located adjacent to foraging areas: margins of lakes and bays.	**Unlikely.** The Study Area is not within close proximity to documented Marin County breeding sites as per Shuford (1993); no indication of nesting (e.g., old stick nests) or presence observed during site visit.	**Presumed Absent.** No further actions are recommended for this species.
Bryant's savannah sparrow *Passerculus sandwichensis alaudinus*	SSC	Year-round resident associated with the coastal fog belt, primarily between Humboldt and northern Monterey Counties. Occupies low tidally influenced habitats and adjacent areas, including grasslands. Also uses drier, more upland coastal grasslands. Nests near the ground in taller vegetation, including along levees and canals.	**Unlikely.** The Study Area lacks large expanses of open grassland or upper tidal marsh areas.	**Presumed Absent.** No further actions are recommended for this species.
California Ridgway's (clapper) rail *Rallus obsoletus obsoletus*	FE, SE, CFP	Year-round resident in tidal marshes of the San Francisco Bay estuary. Requires tidal sloughs and intertidal mud flats for foraging, and dense marsh vegetation for nesting and cover. Typical habitat features abundant growth of cordgrass and pickleweed. Feeds primarily on mollusks and crustaceans.	**No Potential.** The Study Area does not contain tidal or brackish marsh and it outside of this species' local range.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
bank swallow *Riparia riparia*	ST	Summer resident in riparian and other lowland habitats near rivers, lakes and the ocean in northern California. Nests colonially in excavated burrows on vertical cliffs and bank cuts (natural and manmade) with fine-textured soils. Historical nesting range in southern and central areas of California has been eliminated by habitat loss. Currently known to breed in Siskiyou, Shasta, and Lassen Cos., portions of the north coast, and along Sacramento River from Shasta Co. south to Yolo Co.	**No Potential.** The Study Area does not contain cliff or bank cuts to support this species.	**Not Present.** No further actions are recommended for this species.
California least tern *Sternula antillarum browni*	FE, SE, CFP	Summer resident along the coast from San Francisco Bay south to northern Baja California; inland breeding also very rarely occurs. Nests colonially on barren or sparsely vegetated areas with sandy or gravelly substrates near water, including beaches, islands, and gravel bars. In San Francisco Bay, has also nested on salt pond margins.	**No Potential.** The Study Area does not contain barren or gravelly substrate to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
northern spotted owl *Strix occidentalis caurina*	FT, ST, SSC	Year-round resident in dense, structurally complex forests, primarily those with stands of mature conifers. In Napa County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys on mammals.	**No Potential.** The Study Area does not contain forest habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Reptiles and Amphibians				
California tiger salamander *Ambystoma californiense*	FE/FT, ST, RP	Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland, and open ruderal habitats. Adults are fossorial and utilize mammal burrows and other subterranean refugia. Breeding occurs in vernal pools and other seasonal water features.	**No Potential.** The Study Area does not contain vernal pools or other seasonal water features to support breeding, and is not within dispersal distance of documented breeding occurrences.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
California giant salamander *Dicamptodon ensatus*	SSC	Occurs in the north-central Coast Ranges. Moist coniferous and mixed forests are typical habitat; also uses woodland and chaparral. Adults are terrestrial and fossorial, breeding in cold, permanent or semi-permanent streams. Larvae usually remain aquatic for over a year.	**No Potential.** The Study Area does not contain stream habitat to support this species.	**Not Present.** No further actions are recommended for this species.
western pond turtle *Emys marmorata*	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat (sandy banks or grassy open fields) for egg-laying.	**Unlikely.** The Study Area does not provide aquatic habitat or suitable upland habitat to support this species.	**Presumed Absent.** No further recommendations for this species.
foothill yellow-legged frog *Rana boylii*	SSC	Found in or near rocky streams in a variety of habitats; highly aquatic. Prefers partially-sunlit, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on invertebrates (aquatic and terrestrial).	**No Potential.** The Study Area does not provide aquatic habitat to support this species.	**Not Present.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
California red-legged frog *Rana draytonii*	FT, SSC	Lowlands and foothills in or near permanent or semi-permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, marshes, and stream pools. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains.	**Unlikely.** The Study Area does not provide aquatic habitat or suitable upland habitat to support this species.	**Presumed Absent.** No further recommendations for this species.
red-bellied newt *Taricha rivularis*	SSC	Inhabits coastal forests from southern Sonoma County northward, with an isolated population in Santa Clara County. Redwood forest provides typical habitat, though other forest types (e.g., hardwood) are also occupied. Adults are terrestrial and fossorial. Breeding occurs in streams, usually with relatively strong flow.	**Unlikely.** The Study Area does not provide forested habitat or aquatic habitat to support this species.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
Fishes				
green sturgeon *Acipenser medirostris*	FT, SSC	Spawns in the Sacramento River and Klamath Rivers, at temperatures between 8 and 14 degrees Celsius. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.
tidewater goby *Eucyclogobius newberryi*	FE, SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches. Requires fairly still but not stagnant water and high oxygen levels.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.
southern coastal roach *Hesperoleucus venustus subditus*	SSC	Southern Coastal Roach are restricted to the drainages of Tomales Bay/northern SF Bay in the north and Monterey Bay in the south. There are no records of Roach being present in watersheds between these two systems (Baumsteiger and Moyle 2019).	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
coho salmon – central CA coast ESU *Oncorhynchus kisutch*	FE, SE	Occurs in inland and coastal rivers, and marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also requires riparian cover to contribute to cool, well-aerated water. Federal listing applies to populations between Punta Gorda and San Lorenzo River. State listing applies populations south of San Francisco Bay only.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.
steelhead - central CA coast DPS *Oncorhynchus mykiss irideus*	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for 1 or more years before migrating downstream to the ocean.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Sacramento splittail *Pogonichthys macrolepidotus*	SSC, RP	Formerly endemic to the lakes and rivers of the Central Valley, but now confined to the Sacramento Delta, Suisun Bay and associated marshes. Occurs in slow-moving river sections and dead-end sloughs. Requires flooded vegetation for spawning and foraging for young. A freshwater species, but tolerant of moderate salinity (10-18 parts per thousand).	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
longfin smelt *Spirinchus thaleichthys*	FC, ST, SSC	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.
eulachon – Southern DPS *Thaleichthys pacificus*	FT, SSC	Found in Klamath River, Mad River, Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.
Invertebrates				
Crotch bumblebee *Bombus crotchii*	SC	Range largely restricted to California, favoring grassland and scrub habitats. Typical of bumble bees, nests are usually constructed underground.	**Unlikely.** The Study Area is primarily developed or landscaped and does not provide suitable nesting or foraging habitat for this species.	**Presumed Absent.** No further recommendations for this species.

SPECIES	STATUS*	HABITAT REQUIREMENTS	POTENTIAL TO OCCUR IN THE STUDY AREA	RESULTS AND RECOMMENDATIONS
western bumblebee *Bombus occidentalis*	SC	Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared (Xerces 2015). Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually on the ground (e.g., mammal burrows). Many plants are visited and pollinated.	**Unlikely.** This species is historically known from the vicinity historically, with a CNDDB occurrence from 1962 located within 2 miles of the Study Area (CDFW 2023). However, this species is currently considered extirpated from the region (Xerces Society (2018).	**Presumed Absent.** No further recommendations for this species.
monarch butterfly *Danaus plexippus*	FC, roosting sites protected by CDFW	Winter roost sites along the coast from Baja California north to Mendocino County. Roosts are wind-protected tree groves, typically of eucalyptus (*Eucalyptus* spp.), Monterey cypress (*Hesperocyparis macrocarpa*), and Monterey pine (*Pinus radiata*).	**Unlikely.** Non-native tree species typically used for winter roosting are not present. There are no nearby documented winter roosts (CDFW 2023).	**Presumed Absent.** No further recommendations for this species.
California freshwater shrimp *Syncaris pacifica*	FE, SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main stream flow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	**No Potential.** The Study Area does not contain aquatic habitat to support this species.	**Not Present.** No further actions are recommended for this species.

***Key to status codes:**

FC	Federal Candidate for Listing
FE	Federal Endangered
BGEPA	Bald and Golden Eagle Protection Act Species
FT	Federal Threatened
SC (E/T)	State Candidate for Listing (Endangered/Threatened)
SE	State Endangered
CFP	California Fully Protected Animal
SR	State Rare
SSC	State Species of Special Concern
ST	State Threatened
CRPR 1A	CNPS CRPR 1A: Plants presumed extinct in California
CRPR 1B	CNPS CRPR 1B: Plants rare, threatened or endangered in California and elsewhere
CRPR 2A	CNPS CRPR 2A: Plants presumed extirpated in California, but more common elsewhere
CRPR 2B	CNPS CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
CRPR 3	CNPS CRPR 3: Plants about which CNPS needs more information (a review list)
CRPR 4	CNPS CRPR 4: Plants of limited distribution (a watch list)
WBWG	Western Bat Working Group High or Medium-high Priority Species

Potential to Occur:

No Potential: Habitat on and adjacent to the site is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Unlikely: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

High Potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Results and Recommendations:

Present: Species was observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

Assumed Present: Species is assumed to be present on-site based on the presence of key habitat components.

Assumed Present without Impact: Species assumed present; however, project activities will not have an impact on the species.

Presumed Absent: Species is presumed to not be present due to a lack of key habitat components.

Not Present: Species is considered not present due to a clear lack of any suitable habitat and/or local range limitations.

Not Observed: Species was not observed during dedicated/formal surveys.

Presence Unknown: Species has the potential to be present, but no dedicated surveys to determine absence/presence were performed.

Presence Unknown, No Impact: Species has the potential to be present; however, project activities will not have an impact on the species.

APPENDIX E. ARBORIST REPORT

Lynwood Pump Station Replacement

Tree Survey Report

Novato, Marin County, California

Prepared for:

North Marin Water District
999 Rush Creek Place
Novato, CA 94945

Attn: Tim Fuette, P.E., Senior Engineer

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Prepared by:

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January 2024

WRA#320289

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List of Preparers

Hope Kingma	Principal in Charge
Geoff Reilly	Project Manager
Scott Yarger	ISA-Certified Arborist
Neal Jander	GIS Analyst

List of Acronyms

PS	Pump Station
WRA	WRA, Inc.

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1.0 INTRODUCTION

On December 13, 2023 WRA, Inc. (WRA) conducted a tree survey at the five potential sites of the North Marin Water District (NMWD/District) Lynwood Pump Station Replacement Project (project). The District is considering five potential alternatives for the project located in the City of Novato, Marin County, California (Sites 1 through 5 and associated staging areas, collectively "Study Area"). The survey was conducted by ISA-Certified Arborist, Scott Yarger (ISA #WE-9300A) for the purpose of identifying and documenting the presence of all trees as defined by Chapter XVII, Trees and Shrubs of the Novato Municipal Code (Tree Ordinances) within the Study Area. The survey was conducted to assess and quantify potential impacts to trees associated with the project.

GPS locations for all the surveyed trees within the Study Area and information regarding the species, size in diameter, estimated crown radius, estimated height, and health, condition, and structure ratings were collected and are included in this report. A table with all the relevant information pertaining to surveyed trees is provided in Appendix A. A tree survey location map is provided in Appendix B. Representative photographs are provided in Appendix C.

1.1 Study Area Description

The Study Area includes five potential alternative sites (Sites 1 through 5, the existing pump station, and staging areas) for replacing the existing Lynwood Pump Station (PS) throughout southern Novato. Site 1 is located along Sunset Parkway in the vicinity of South Novato Boulevard and Lynwood Drive. The proposed Site 1 is located approximately 330 feet southwest of the Existing PS site, just west of the intersection of Sunset Parkway and Monte Maria Ave, while the staging area is located just east of the intersection of Sunset Parkway and Greenwood Drive. These sites are in median 'islands' within the road.

Site 2 is located south of Ignacio Boulevard across from Palmer Drive approximately 1.3 miles south of the existing PS site. Site 2 is located to the north of Arroyo San Jose Creek, and is separated from the riparian area by an existing developed pedestrian path.

Site 3 is located along Bolling Drive in the Hamilton neighborhood in a landscaped slope in a public park area. Sites 4 and 5, along with their proposed staging areas are also located in the Hamilton neighborhood along Main Gate Road and C Street, respectively. Site 4 is located in a landscaped park adjacent to Pacheco Creek and associated riparian habitat. Site 5 is located on the Novato Charter School property adjacent to the ballfield.

1.2 Project Description

The District has decided to move forward with the replacement of the Lynwood PS at a different location. Five potential alternative solutions for replacing the existing Lynwood PS have been identified as described below. Each alternative would involve either a new PS at one of the sites or two new PS at a combination of the sites.

A detailed description of each alternative is provided in the sections following. Each new PS would include a pump station building and parking. The analysis also considers that an emergency generator may be installed at each site, but the District may choose not to install an

emergency generator as part of the final design effort. The footprint for pipe improvements assumes a ten-foot-wide T trench.

Construction equipment would be stored in designated staging areas. The staging area on Sunset Parkway would be used for any project work at the Sunset Parkway Site (Site 1) or the Existing PS Site. Separate staging areas are identified for the four other sites on Ignacio Boulevard (Site 2), Bolling Drive (Site 3), Main Gate Road Site (Site 4), and C Street Site (Site 5).

1.2.1 Alternative A

Alternative A would include one new PS with four pumps located at the Sunset Parkway Site (Site 1). This PS would match the existing PS but would include one additional pump to meet future demands. The Sunset Parkway Site is located approximately 330 feet southwest of the Existing PS Site.

1.2.2 Alternative B

Alternative B would include one new PS with four pumps located at the Ignacio Boulevard Site (Site 2). The Ignacio Boulevard Site is located approximately 1.3 miles south of the Existing PS Site. The proposed PS footprint is approximately 2,000 SF and proposed pipe improvements footprint is approximately 37,500 SF.

1.2.3 Alternative C

Alternative C would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) and one at the Bolling Drive Site (Site 3). The new PS at the Ignacio Boulevard Site would include three pumps and the new PS at Bolling Drive Site would include two pumps. The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF. The proposed PS footprint at the Bolling Drive Site is approximately 1,600 SF and proposed pipe improvements footprint is approximately 31,000 SF.

1.2.4 Alternative D

Alternative D would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the Main Gate Road Site (Site 4) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the Main Gate Road Site (Site 4) is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF. The proposed PS footprint at the Main Gate Road Site is approximately 1,600 SF and the proposed pipe improvements footprint is approximately 4,700 SF.

1.2.5 Alternative E

Alternative E would include the construction of two new PS, one at the Ignacio Boulevard Site (Site 2) with three pumps, and one at the C Street Site (Site 5) with two pumps. This alternative would fulfill the same objectives as Alternative C given that the C Street Site is located approximately 0.3 miles north of the Bolling Drive Site (Site 3). The proposed PS footprint at the Ignacio Boulevard Site is approximately 1,800 SF and proposed pipe improvements footprint is approximately 37,500 SF. The proposed PS footprint at the C Street Site is approximately 1,600 SF and the proposed pipe improvements footprint is approximately 1,200 SF.

1.3 Regulatory Background

1.3.1 City of Novato Tree Ordinances

With the exception of encroachment permits, the District is not subject to the City of Novato's Code of Ordinances. Nonetheless, the City recognizes the aesthetic, environmental, and economic benefits mature trees provide to the citizens of the City. Chapter XVII, "Trees and Shrubs", of the City's Code of Ordinances regulates the removal of certain types of trees on public and private properties within City limits. The municipal code includes protections for trees on private property and City-owned or controlled places, described below.

City of Novato Tree Ordinance (Private Property)

The City Tree Ordinance defines a "tree" on private property as any native or non-native woody plant having a major trunk or trunk of a diameter of 6 inches or greater measured at 24 inches above grade, and a "heritage tree" is defined as any tree having a diameter of 24 inches or greater, measured at 24 inches above grade (Ord. No. 1576, § 2 [Exhibit A], 10-23-12). The alteration or removal of a heritage tree on any parcel or of one or more tree on an undeveloped parcel is prohibited without a permit from the City of Novato (Ord. No. 1441 § 2(E); Ord. No. 1576, § 2 [Exhibit A], 10-23-2012).

City of Novato Tree Ordinance (Public Places)

The City Tree Ordinance defines a "tree" on or adjacent to public places as any woody perennial plant having a single main axis or stem commonly achieving ten feet in height and capable of shaping and pruning to develop a branch-free trunk at least nine feet in height, and a "shrub" is defined as any woody perennial plant, normally low, several stemmed, adaptable to shaping, trimming and pruning without injury within the area planted (Ord. No. 1576, § 2 [Exhibit A], 10-23-12). The trimming, alteration, or removal of and street tree or shrub is prohibited without approval from the City of Novato (Ord. No. 1441 § 2(E); Ord. No. 1576, § 2(E), 10-23-2012).

The District is considered exempt from the City of Novato local ordinances, including the Tree Ordinances described above. However, the District intends to follow recommended tree protection and tree removal described in the Tree Ordinances, including tree replacement.

2.0 METHODS

On December 13, 2023, the Study Area was traversed on foot to inventory all trees as defined per the City of Novato Tree Ordinances. WRA's ISA-Certified Arborist surveyed the area and recorded relevant tree information for each surveyed tree including species, diameter, estimated crown radius, estimated height, and health, condition and structure ratings. The survey included all trees either within or directly outside of the Study Area boundaries with roots or branches encroaching into the Study Area.

2.1 Tree Inventory

Locations of trees within the Study Area were recorded using a handheld GPS unit with sub-meter accuracy. Each tree was given an aluminum tree tag with unique identification number and are included in Appendix A.

Diameter was calculated for surveyed trees by measuring the trunk diameter at 2 feet above grade following the City of Novato guidelines. Diameter for multi-trunked trees was calculated by measuring each individual trunk and calculating the sum total of trunk diameters. In cases where multi-trunked trees had more than five main trunks, only the five largest trunks were measured. In cases where an irregular buttress or bulge occurred at two feet above ground or diameter, measurements were taken above or below the irregular feature in order to best represent the size of the tree.

2.2 Tree Assessment

General notes on the condition of trees were taken, including health, structure, and overall condition. Assessment of the health, structure, and overall condition of each tree was conducted according to the narratives listed in Table 1.

Table 1. Rating Narratives for Tree Assessment

	HEALTH	STRUCTURE	GENERAL CONDITION
Good	Tree is free from symptoms of disease and stress.	Tree is free from major structural defects.	Tree shows condition of foliage, bark, and overall structure characteristic of the species and lacking obvious defect, or disease.
Fair	Tree shows some symptoms of disease or stress including twig and small branch dieback, evidence of fungal / parasitic infection, thinning of crown, or poor leaf color.	Tree shows some structural defects in branches but overall structure is stable.	Tree shows condition of foliage, bark, and overall structure characteristic of the species with some evidence of stress, defect, or disease.
Poor	Tree shows symptoms of severe decline.	Tree shows structural failure of a major branch or co-dominant trunk.	Tree shows condition of foliage, bark, and overall structure uncharacteristic of the species with obvious evidence of stress, defect, or disease.

2.3 Tree Impact Assessment and Recommendations

Potential impacts to all trees were analyzed by comparing tree survey data with the project's boundaries. Trees with trunks located within the project boundary were determined to likely be a removal. Trees with branches or root zones overhanging or encroaching into a site boundary were determined to be potentially impacted, and trees within a staging area were determined to be potentially avoided.

As described above, the District is considered exempt from the City's municipal ordinances, including the Tree Ordinances. However, adherence to tree protection measures and tree replacement specified in the Tree Ordinances is recommended. The tree impact assessment described in the results section below includes an analysis of maximum potential tree removals for each of the five Project Alternatives (A-E).

3.0 RESULTS

3.1 Tree Inventory

Twenty four trees were identified within the Study Area. A complete list of all surveyed trees surveyed is presented in Appendix A. The GPS locations of surveyed trees are shown in Appendix B. Of the 24 trees surveyed, 20 are considered City trees as they are located on City-owned or controlled properties, and four trees are located on Novato Charter School (private) property. Of the four private property trees, two are of ordinance-protected size, (i.e. greater than 6 inches diameter at 2 feet above grade), and two of those trees are of non-protected size.

Surveyed trees present within the Study Area included 11 species, three of which are locally native species, and the remaining 8 species are non-native ornamental or landscaping trees. Non-native tree species present included: olive (*Olea europeaea*), Mexican fan palm (*Washingtonia robusta*), mulberry (*Morus alba*), Chinese elm (*Ulmus parvifolia*), Siberian elm (*U. pumila*), London plane (*Platanus* x *hispanica*), Crepe myrtle (*Lagerstroemia indica*), and glossy privet (*Ligustrum lucidum*). Locally native tree species present included valley oak (*Quercus lobata*), coast live oak (*Q. agrifolia*), and California sycamore (*Platanus racemosa*), though all trees surveyed appeared to be planted and are maintained landscape trees.

Trees range in size from 4.3 inches to 20.9 inches in diameter (measured at 2 feet above ground). The largest tree surveyed was a 20.9-inch Siberian elm (tree #583).

3.2 Tree Assessment

The condition, health, and structure of trees inventoried during this assessment ranged from poor to good, with most trees ranking good in health, structure, and general condition. Trees ranking fair to poor in condition, health and structure included the Siberian elms (trees #580-583) located in Site 1, mulberries (trees #578-589) in Site 1 staging area, and one glossy privet (tree #599) located in Site 4. Trees ranking fair to poor in condition, health, and structure displayed maladies, and defects including: softwood and heartwood decay, minor to major scaffold branch failures, wood decay fungi, bark beetle exit holes, and v-shaped branch unions with included bark. The observed maladies and structural defects lead to the condition, health and structure rankings summarized in Table 2 below, and provided in Appendix A.

Table 2: Tree Assessment Results Summary

CRITERIA ASSESSED/RATING	CONDITION	HEALTH	STRUCTURE
Good	17 (71%)	16 (67%)	16 (66%)
Fair	4 (17%)	5 (21%)	4 (17%)
Poor	3 (12%)	3 (12%)	4 (17%)

3.3 Tree Impact Assessment and Recommendations

A total of 14 surveyed trees have been identified as likely needing to be removed to accommodate the project based on comparison of project description and site boundaries and tree survey data collected during the surveys. As only one Alternative will be implemented, the maximum number of trees potentially requiring removal would range from zero (Alternative B) to six (Alternative D). An additional two trees are likely to require trimming due to their location outside of the site boundaries but with branches or root systems encroaching into the site. A summary of potentially removed trees per Project Alternative is provided below.

3.3.1 Alternative A

Alternative A would likely require removal of three Siberian elm trees (trees #580-582) located within the Site 1 boundary, and potential trimming of one Siberian elm (tree #583) located directly outside the of the Site 1 boundary. These trees are in fair to poor condition, exhibiting internal decay, and scaffold branch failures. This alternative would likely avoid four trees including one olive (tree #576), one Mexican fan palm (tree #577) located at the existing PS, and two mulberries located at the Site 1 staging area. All trees in the vicinity of Alternative A are City trees. Following the Tree Ordinances' replacement guidelines, tree replacement at a minimum 1 to 1 ratio is recommended for the removal of the three Siberian elm trees. Standard tree protection measures recommended for avoided trees are provided in Section 4.0 below.

3.3.2 Alternative B

Alternative B would not impact any trees at Site 2 as there are no trees situated within the Site 2 boundary or staging area. This alternative would likely avoid four trees including one olive (tree #576), one Mexican fan palm (tree #577) located at the existing PS, and two mulberries located at the Site 1 staging area.

3.3.3 Alternative C

Alternative C would likely require removal of three planted valley oak trees (trees #585-587) located within the Site 3 boundary, and potential trimming of one Crepe myrtle (tree #588) located directly outside the of the Site 3 boundary. The three valley oak trees likely to require removal are relatively small trees in good condition. All trees in the vicinity of Alternative C are City trees. Following the Tree Ordinances' replacement guidelines, tree replacement at a minimum 1 to 1 ratio is recommended for the removal of the three valley oak trees. Standard tree protection measures recommended for avoided trees are provided in Section 4.0 below. This alternative would likely avoid four trees including one olive (tree #576), one Mexican fan palm (tree #577) located at the existing PS, and two mulberries located at the Site 1 staging area.

3.3.4 Alternative D

Alternative D would likely require removal of six City trees including four California sycamore (*Platanus racemosa*)(tree #594-596 and #598), one London plane tree (*Platanus* x *hispanica*)(tree #597), and one glossy privet (*Ligustrum lucidum*)(tree #599). All trees in the vicinity of Alternative D are City trees. Following the Tree Ordinances' replacement guidelines, tree replacement at a minimum 1 to 1 ratio is recommended for the removal of the six City trees. Standard tree protection measures recommended for avoided trees are provided in Section 4.0 below. This alternative would likely avoid four trees including one olive (tree #576), one Mexican fan palm (tree #577) located at the existing PS, and two mulberries located at the Site 1 staging area.

3.3.5 Alternative E

Alternative E would likely require removal of one protected-size Chinese elm (tree #590), and one non-protected Chinese elm (tree #591) within the Site 5 boundary. Two additional Chinese elm trees (trees #592, 593) would likely be avoided as they are located on the edge of the Site 5 staging area. Following the Tree Ordinances' replacement guidelines, tree replacement at a minimum 1 to 1 ratio is recommended for the removal of the one protected-size tree potentially removed by this alternative. Standard tree protection measures recommended for avoided trees are provided in Section 4.0 below. This alternative would likely avoid four trees including one olive (tree #576), one Mexican fan palm (tree #577) located at the existing PS, and two mulberries located at the Site 1 staging area.

4.0 SUMMARY AND RECOMMENDATIONS

A total of 14 surveyed trees have been identified as potentially needing to be removed to accommodate the project based on comparison of project description and site boundaries and tree survey data collected during the surveys. As only one Alternative will be implemented, the maximum number of trees potentially requiring removal would range from zero (Alternative B) to six (Alternative D).

In order to avoid and minimize damage to existing trees which are designated for preservation and not proposed for direct impact by project activities, the following measures are recommended during construction:

- Trees removed by the project are recommended to be replaced at a minimum 1 to 1 ratio on the affected property. Tree species should be the same species as those removed or an alternative locally-native species such as valley oak (*Quercus lobata*) or coast live oak (*Q. agrifolia*)
- All construction activity (grading, filling, paving, landscaping etc.) should respect the root protection zone (RPZ) around all trees within the vicinity of grading that are selected for preservation. The RPZ should be a distance of 1.0 times the dripline radius measured from the trunk of the tree. Exception to this standard could be considered on a case-by-case basis, provided that it is demonstrated that an encroachment into the RPZ will not critically damage the root system or the health of the tree, and is authorized by an ISA Certified Arborist or comparable specialist.

- Temporary protective fencing shall be installed around the dripline of existing trees designated for preservation prior to commencement of any construction activity conducted within 25' of the tree canopy of a tree designated for preservation. The fence shall be clearly marked to prevent inadvertent encroachment by heavy machinery.
- If any trees require trimming and/or root pruning to accommodate construction, they shall be pruned to American National Standards Institute (ANSI) A300 standards for tree care practices.
- An ISA Certified Arborist or tree specialist shall be retained to perform any necessary pruning of trees during construction activity.
- If grading takes place within the RPZ of a preserved tree, roots should be exposed using the least injurious method possible, and selective root pruning is the preferred method of removal.
- Roots exposed, as a result of construction activities shall be covered with wet burlap to avoid desiccation, and should be buried as soon as practicable.
- Only an ISA Certified Arborist or tree specialist will make specific recommendations as to where any existing trees can safely tolerate some level of fill within the drip line.
- Construction materials shall be properly stored away from existing trees to avoid spillage or damage to trees.

5.0 REFERENCES

Google Earth 2024 Google Earth. 2024. Aerial Photography 1993-2023.

APPENDIX A. TREE SURVEY TABLE

Appendix A. North Marin Water District, Lynwood PS Replacement Project, Tree Survey, Novato, California, December 2023

Tag ID	Species	Common Name	Multi-trunk	Total DBH (inches)	Ordinance Status	Potential Impact	Approximate Dripline Radius (feet)	Approximate Height (feet)	Condition	Health	Structure
576	Olive	*Olea europeaea*	No	9.0	City Tree	Avoided	8	11	Good	Good	Good
577	Mexican fan palm	*Washingtonia robusta*	No	13.5	City Tree	Avoided	4	6	Good	Good	Good
578	Mulberry	*Morus alba*	No	13.3	City Tree	Avoided	10	13	Fair	Fair	Fair
579	Mulberry	*Morus alba*	No	15.6	City Tree	Avoided	10	12	Fair	Fair	Fair
580	Siberian elm	*Ulmus pumila*	No	18.0	City Tree	Removal	15	20	Poor	Poor	Poor
581	Siberian elm	*Ulmus pumila*	No	17.9	City Tree	Removal	12	20	Fair	Fair	Fair
582	Siberian elm	*Ulmus pumila*	No	14.8	City Tree	Removal	9	12	Poor	Poor	Poor
583	Siberian elm	*Ulmus pumila*	No	20.9	City Tree	Trimming	12	20	Poor	Poor	Poor
584	London plane	*Platanus x hispanica*	No	10.9	City Tree	Avoided	15	25	Good	Good	Good
585	Valley oak	*Quercus lobata*	No	9.0	City Tree	Removal	15	25	Good	Good	Good
586	Valley oak	*Quercus lobata*	No	4.3	City Tree	Removal	3	8	Good	Good	Good
587	Valley oak	*Quercus lobata*	No	10.8	City Tree	Removal	15	25	Good	Good	Good
588	Crepe myrtle	*Lagerstroemia indica*	Yes	13.0	City Tree	Trimming	8	12	Good	Good	Good
589	Coast live oak	*Quercus agrifolia*	No	8.0	City Tree	Avoided	9	16	Good	Good	Good
590	Chinese elm	*Ulmus parvifolia*	No	7.0	Protected Size	Removal	9	15	Good	Good	Good
591	Chinese elm	*Ulmus parvifolia*	No	5.0	Non-protected	Removal	9	13	Good	Fair	Fair
592	Chinese elm	*Ulmus parvifolia*	No	8.9	Protected Size	Avoided	12	18	Good	Good	Good
593	Chinese elm	*Ulmus parvifolia*	No	4.9	Non-protected	Avoided	8	15	Good	Good	Good
594	California sycamore	*Platanus racemosa*	No	14.4	City Tree	Removal	18	35	Good	Good	Good
595	California sycamore	*Platanus racemosa*	No	13.0	City Tree	Removal	15	35	Good	Good	Good
596	California sycamore	*Platanus racemosa*	No	10.3	City Tree	Removal	12	30	Good	Good	Good
597	London plane tree	*Platanus x hispanica*	No	15.2	City Tree	Removal	20	35	Good	Good	Good
598	California sycamore	*Platanus racemosa*	No	17.0	City Tree	Removal	18	35	Good	Good	Good
599	Glossy privet	*Ligustrum lucidum*	Yes	19.0	City Tree	Removal	10	12	Fair	Fair	Poor

APPENDIX B. TREE SURVEY MAP

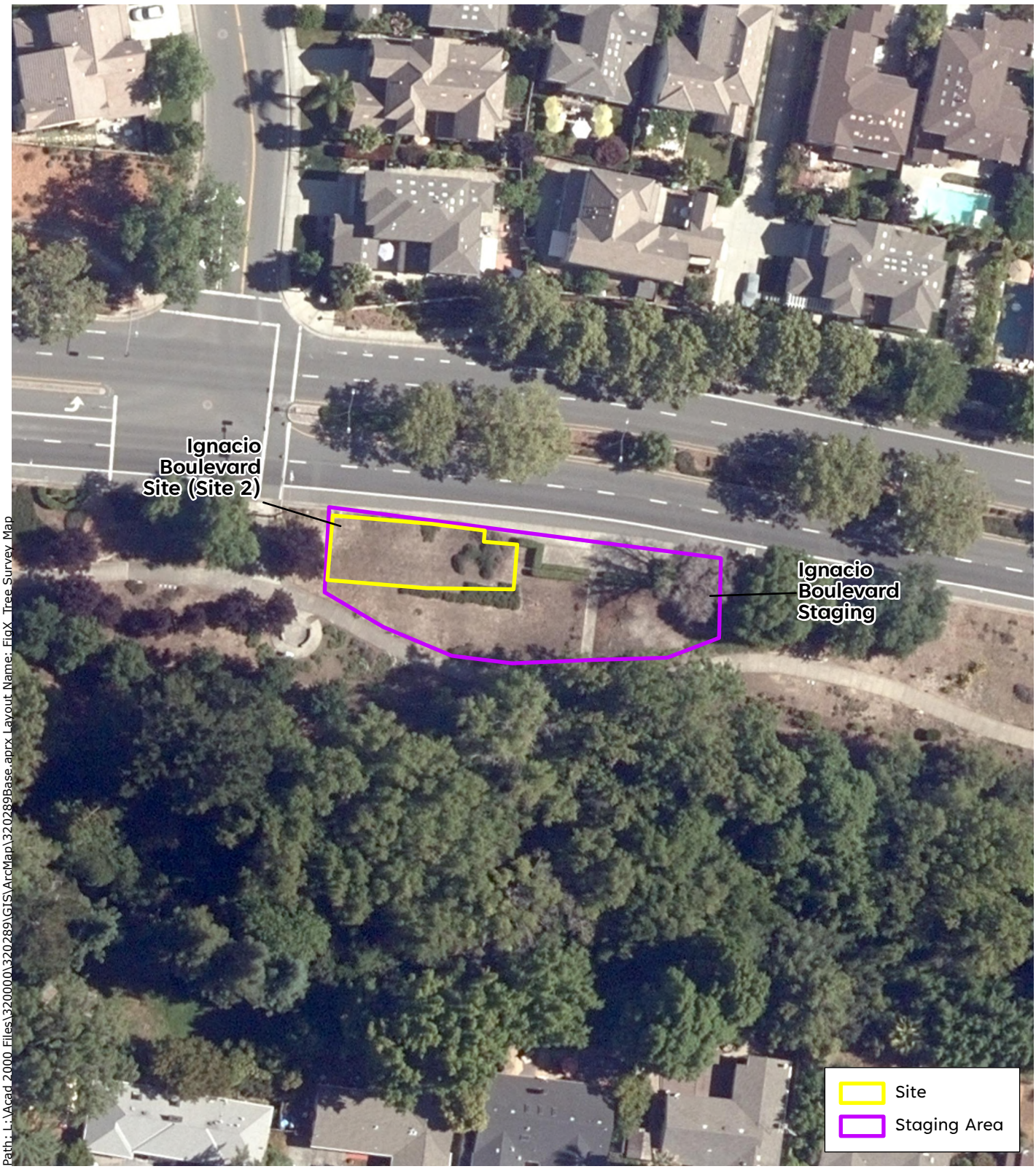
Path: L:\Acad 2000 Files\320000\320289\GIS\ArcMap\320289Base_aprx Layout Name: FigX_Tree Survey Map

Sources: Marin County Imagery 2018, WRA | Prepared By: kobylarz, 1/4/2024

Figure 1. Tree Survey Map
Project Site and Staging Areas: Sunset Parkway Site (Site 1)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

wra Environmental Consultants



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Sources: Marin County Imagery 2018, WRA | Prepared By: kobylarz, 1/4/2024

Figure 2. Tree Survey Map
Project Site and Staging Areas:
Ignacio Boulevard Site (Site 2)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

N

0 50 100 Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\320000\320289\GIS\ArcMap\320289Base.aprx Layout Name: FigX_Tree Survey Map

Sources: Marin County Imagery 2018, WRA | Prepared By: kobylarz, 1/4/2024

Figure 3. Tree Survey Map
Project Site and Staging Areas: Bolling Drive Site (Site 3)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

N

0 50 100 Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\320000\320289\GIS\ArcMap\320289Base.aprx Layout Name: FigX_Tree Survey Map

Sources: Marin County Imagery 2018, WRA | Prepared By: kobylarz, 1/4/2024

Figure 4. Tree Survey Map
Project Site and Staging Areas:
Main Gate Road Site (Site 4)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

N

0 50 100 Feet

wra Environmental Consultants

Path: L:\Acad 2000 Files\320000\320289\GIS\ArcMap\320289Base.aprx Layout Name: FigX_Tree Survey Map

Sources: Marin County Imagery 2018, WRA | Prepared By: kobylarz, 1/4/2024

Figure 5. Tree Survey Map
Project Site and Staging Areas:
C Street Site (Site 5)

North Marin Water District
Lynwood Pump Station Replacement
Novato, California

N

0 50 100 Feet

wra Environmental Consultants

APPENDIX C. REPRESENTATIVE PHOTOGRAPHS

Photograph 1. Photograph depicting three (3) Siberian elm City trees (trees #580-582) at Site 1. The trees are in fair to poor condition and would be removed under Alternative A.

Photograph 2. Photograph depicting Siberian elm tree #582 at Site 1. The tree in poor condition, exhibiting a large internal cavity affecting the tree's health, structure, and condition.

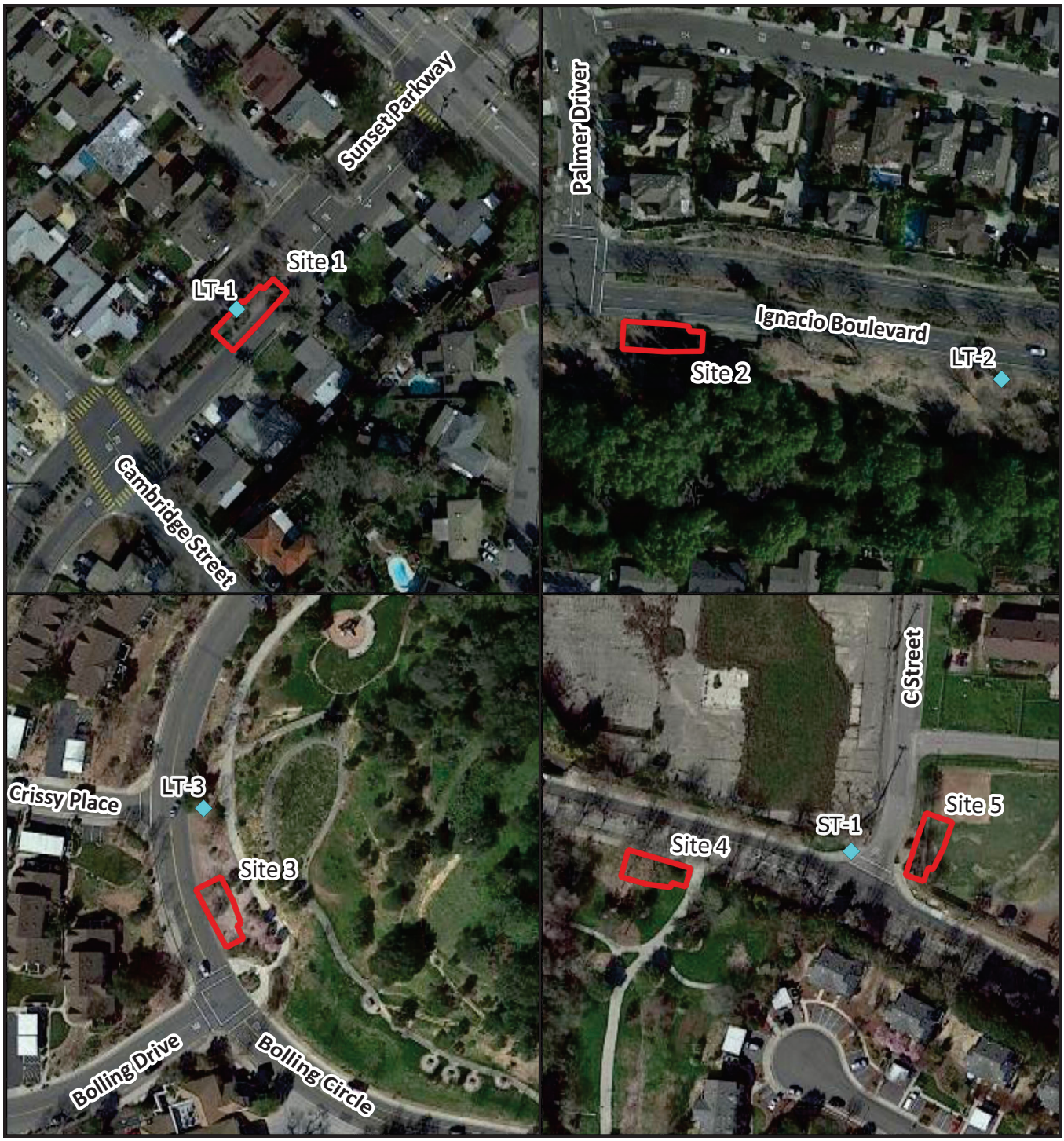
Photograph 3. Photograph depicting Site 2 and staging area, which does not contain any trees.

Photograph 4. Photograph depicting three small valley oak City trees (trees #585-587) at Site 3. These trees are in good condition, and would be removed under Alternative C.

Photograph 5. Photograph depicting two planted California sycamore City trees (trees #594, 596), and one London plane City tree (tree #597) at Site 4. These trees would be removed under Alternative D.

Photograph 6. Photograph depicting a non-protected size Chinese elm (tree #590) at Site 5. This tree would be removed under Alternative E.

APPENDIX F. NOISE DATA



Legend

- Noise Measurement Location
- Site Boundary

0 120 Feet

N

Figure F1
Noise Measurement Locations

BASELINE ENVIRONMENTAL CONSULTING

Site 1

Measurement Report

Report Summary

Meter's File Name	LxT_Data.041.s	Computer's File Name	LxT_0006386-20231214 105133-LxT_Data.041.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2023-12-14 10:51:33	Duration	24:26:31.5
End Time	2023-12-15 11:18:04	Run Time	24:20:51.7
		Pause Time	0:05:39.8

Results

Overall Metrics

LA_{eq}	61.2 dB		
LAE	110.6 dB	SEA	133.1 dB
EA	12.8 mPa²h		
EA8	4.2 mPa²h		
EA40	21.1 mPa²h		
LAS_{peak}	123.1 dB	2023-12-15 11:11:20	
LAS_{max}	93.5 dB	2023-12-15 11:11:20	
LAS_{min}	37.2 dB	2023-12-15 01:27:24	
LA_{eq}	61.2 dB		
LC_{eq}	66.6 dB	LC_{eq} - LA_{eq}	5.4 dB
LAI_{eq}	65.5 dB	LAI_{eq} - LA_{eq}	4.3 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	8	0:00:18.3
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
63.0 dB	62.9 dB	0.0 dB

LDEN	LDay	LEve	LNight
63.5 dB	63.5 dB	59.1 dB	53.2 dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	61.2 dB		--- dB		--- dB	
$Ls_{(max)}$	93.5 dB	2023-12-15 11:11:20	--- dB		--- dB	
$LS_{(min)}$	37.2 dB	2023-12-15 01:27:24	--- dB		--- dB	
$L_{Peak(max)}$	123.1 dB	2023-12-15 11:11:20	--- dB		--- dB	

Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	67.6 dB
LAS 10.0	65.5 dB
LAS 33.3	56.4 dB
LAS 50.0	52.4 dB
LAS 66.6	49.1 dB
LAS 90.0	45.4 dB

Modified Results

Overall Metrics

LA_{eq}	60.9 dB		
LAE	110.3 dB		
EA	11.9 mPa²h		
EA8	4.0 mPa²h		
EA40	19.8 mPa²h		
LAS_{peak}	123.1 dB	2023-12-15 11:11:20	
LAS_{max}	19.7 dB	2023-12-15 11:11:20	
LAS_{min}	15.7 dB	2023-12-15 01:27:24	
LA_{eq}	60.9 dB		
LC_{eq}	--- dB	LC_{eq} - LA_{eq}	--- dB

Community Noise

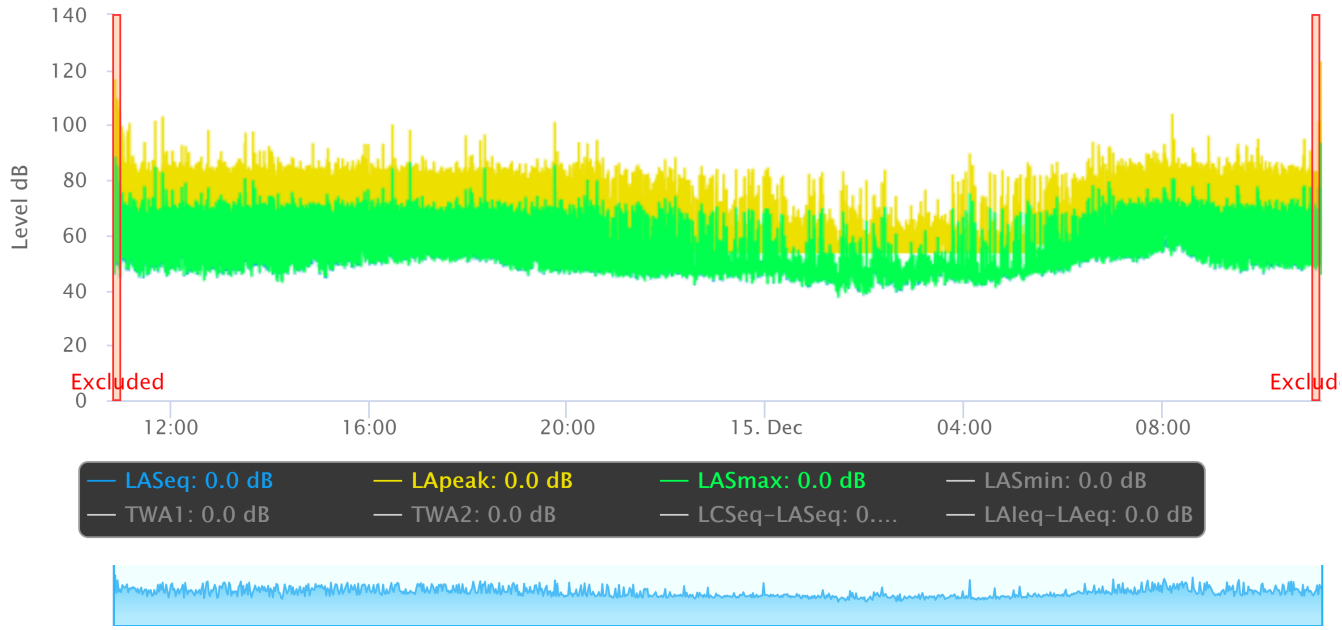
LDN	LDay	LNight
62.9 dB	62.7 dB	0.0 dB

LDEN	LDay	LEve	LNight
63.3 dB	63.3 dB	59.1 dB	53.2 dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	17.8 dB		--- dB		--- dB	
$Ls_{(max)}$	19.7 dB	2023-12-15 11:11:20	--- dB		--- dB	
$LS_{(min)}$	15.7 dB	2023-12-15 01:27:24	--- dB		--- dB	
$L_{Peak(max)}$	20.9 dB	2023-12-15 11:11:20	--- dB		--- dB	

Time History



Site 2

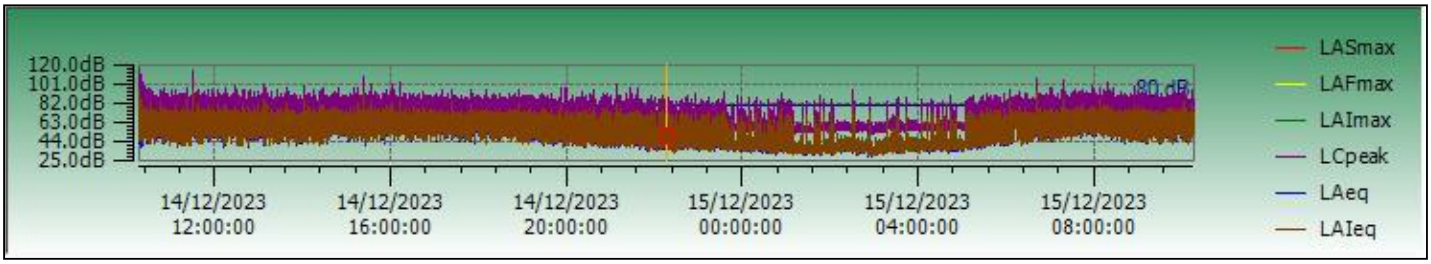
Casella CEL Ltd.

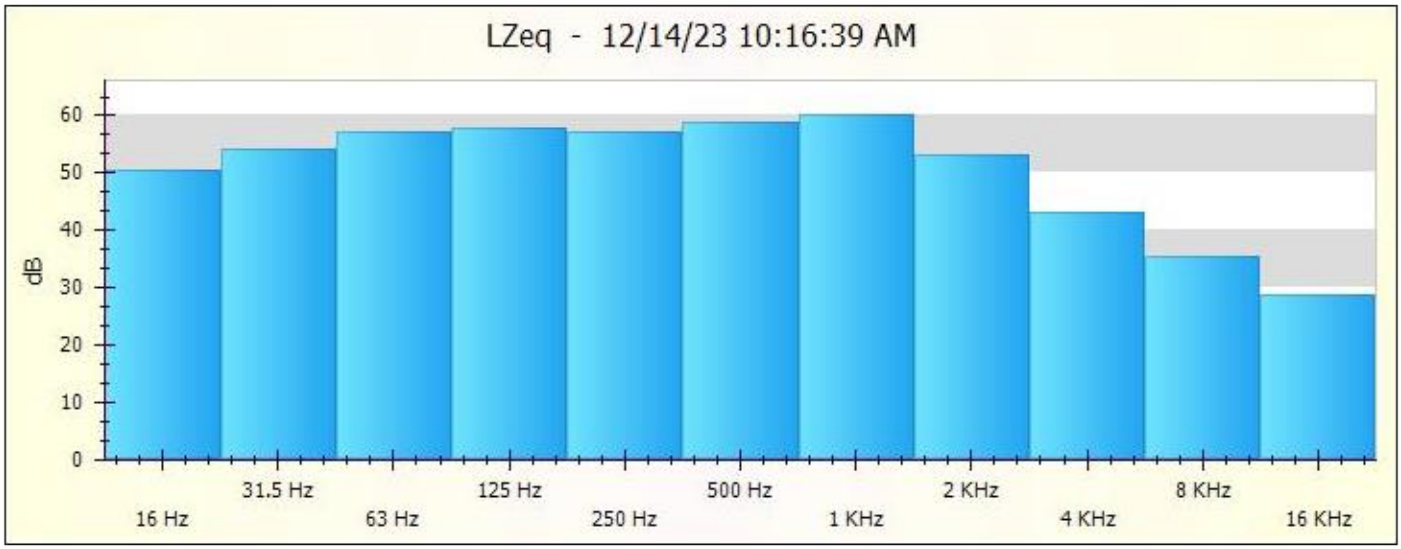
Report On Lymwood Pump Alt-2

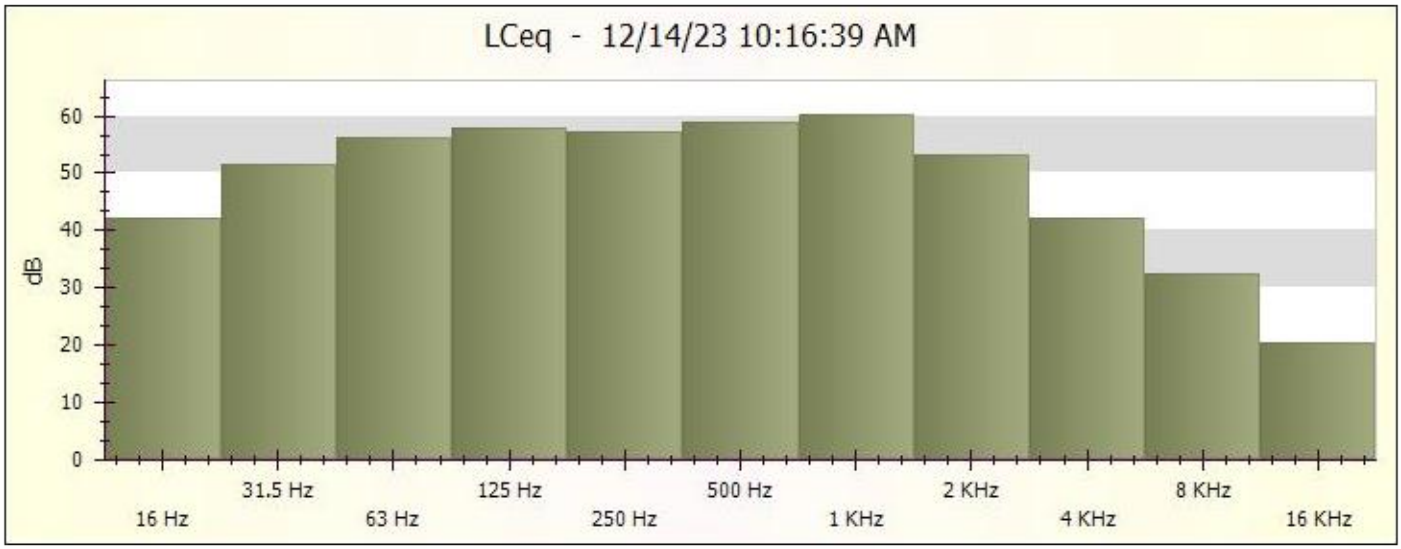
Report Sorted/Grouped By: Site(Ascending)

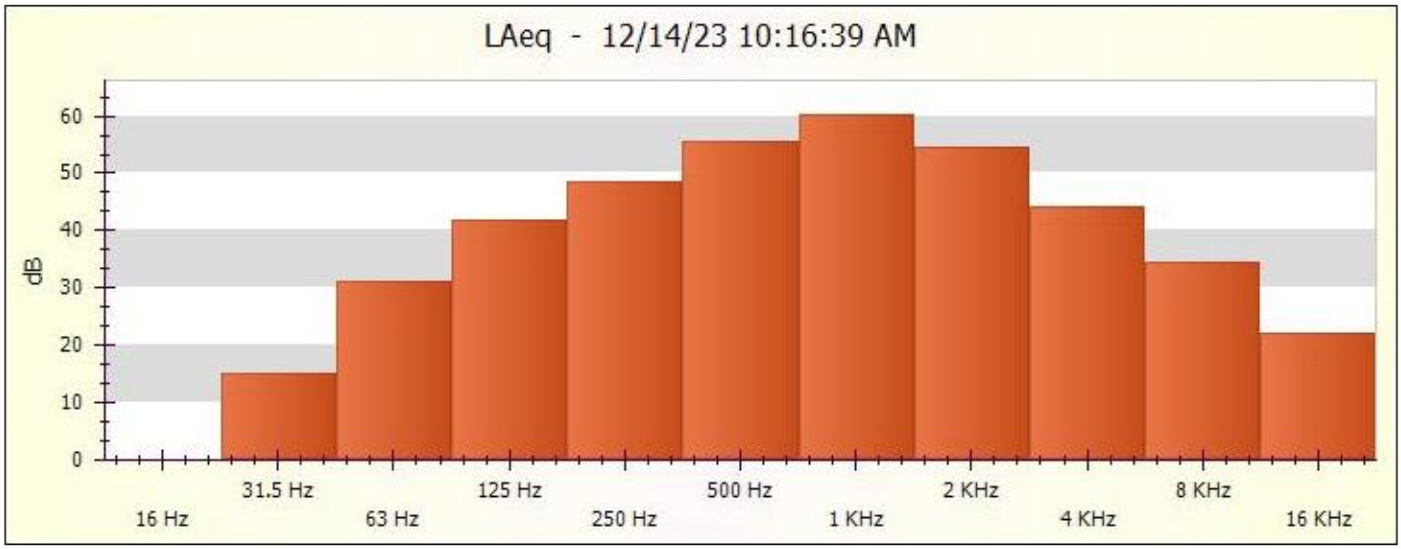
Lymwood Pump Alt-2

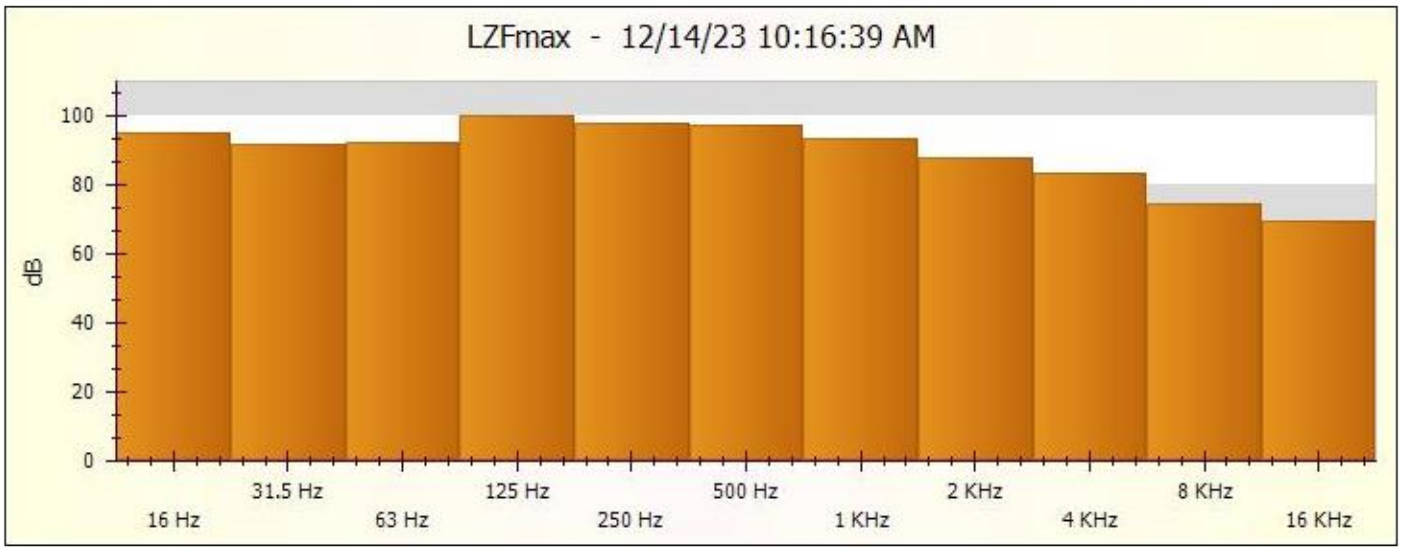
Instrument Model	**CEL-633C**		
Serial Number	0499599	LZeq	66.4 dB
Run Number	3	LCeq	65.9 dB
Site	Lymwood Pump Alt-2	LCeq-LAeq	3.3 dB
Location	Unallocated	LAleq	64.5 dB
Person	Unallocated	LAE	111.9 dB
Process	Unallocated	Response	Free Field
Start Date & Time	12/14/23 10:16:39 AM	End Date & Time	12/15/23 10:16:39 AM
Duration	24:00:00 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS
LAeq	62.6 dB	Calibration (Before) Date	12/12/23 4:05:04 PM
LCpeak with Time	116.7 dB (12/14/23 10:17:27 AM)	Calibration (Before) SPL	114 dB
Lepd(Projected)	67.4 dB	Calibration (After) Date	
Lex8h(Projected)	67.4 dB	Calibration Drift	0.0 dB
LAFmax with Time	96.3 dB (12/14/23 11:30:03 AM)	Overload	No
LAImax with Time	97.2 dB (12/14/23 11:30:03 AM)	Battery Low	No
LAFmin with Time	29 dB (12/14/23 2:51:38 AM)	Result	Cumulative
LAImin with Time	29.3 dB (12/14/23 2:51:38 AM)		
Notes			

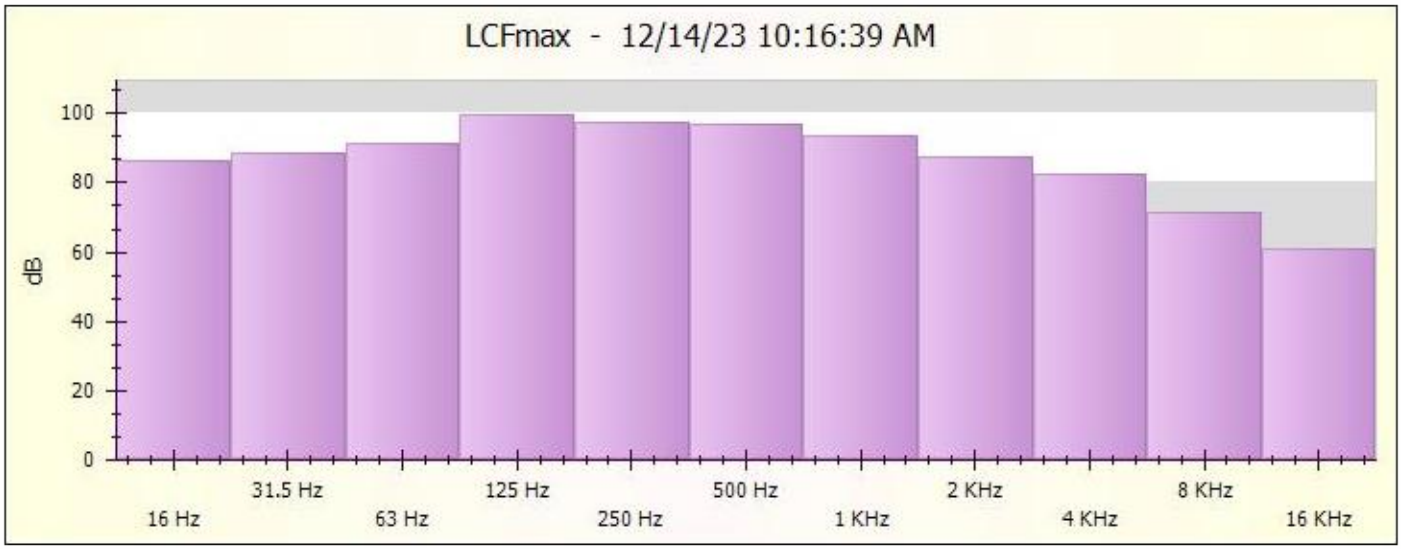


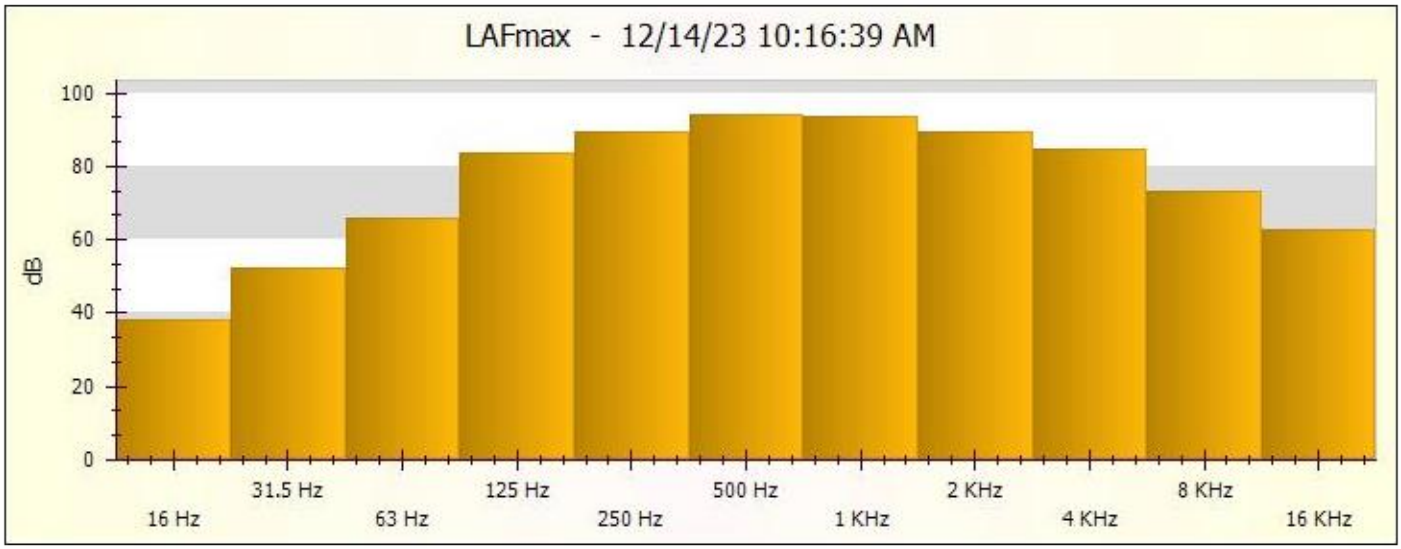



LCeq - 12/14/23 10:16:39 AM
dB
60
50
40
30
20
10
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LAeq - 12/14/23 10:16:39 AM
dB
60
50
40
30
20
10
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LZFmax - 12/14/23 10:16:39 AM
dB
100
80
60
40
20
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LCFmax - 12/14/23 10:16:39 AM
dB
100
80
60
40
20
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LAFmax - 12/14/23 10:16:39 AM
dB
100
80
60
40
20
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz

Alternative B

ID	b19d9490-113f-4eda-ae5f-f4df35683e8e
INSTRUMENTID	741e80fa-f151-4d3b-8864-f844d9736996
INSTRUMENTSERIESID	aa808e62-dd1b-4564-944b-e64ff2bcf7f2
INSTRUMENTMODELID	b1w60o7d-227z-4aee-2323-71d79f830677
BATTERYLOW	FALSE
DURATIONSEC	86400
ENDDATETIME	12/15/2023 10:16
NOTES	
OVERLOAD	FALSE
PAUSEDURATIONSEC	0
RESPONSE	0
RUNNO	3
SERIALNO	0499599
STARTDATETIME	12/14/2023 10:16
CALAFTERDATE	1/1/2001 0:00
CALBEFOREDATE	12/12/2023 16:05
CALBEFOREOFFSETDB	8.8
CALBEFORESPL	114
CALDRIFTDB	0
OCTAVECOUNT	1
PROFILECOUNT	86400
LAFMAX	96.3
LAFMAXTIME	12/14/2023 11:30
LAFMIN	29
LAFMINTIME	12/14/2023 2:51
LAIMAX	97.2
LAIMAXTIME	12/14/2023 11:30
LAIMIN	29.3
LAIMINTIME	12/14/2023 2:51
LASMAX	92.1
LASMAXTIME	12/14/2023 11:30
LASMIN	29.6
LASMINTIME	12/14/2023 2:51
LCFMAX	102.7
LCFMAXTIME	12/14/2023 11:30
LCFMIN	40.4
LCFMINTIME	12/14/2023 2:58
LCIMAX	103.5
LCIMAXTIME	12/14/2023 11:30
LCIMIN	42.6
LCIMINTIME	12/14/2023 1:35
LCSMAX	99.3
LCSMAXTIME	12/14/2023 11:30
LCSMIN	42.2
LCSMINTIME	12/14/2023 1:35
LZFMAX	102.8
LZFMAXTIME	12/14/2023 11:30

LZFMIN	43.3
LZFMINTIME	12/14/2023 2:06
LZIMAX	103.6
LZIMAXTIME	12/14/2023 11:30
LZIMIN	46.3
LZIMINTIME	12/14/2023 1:35
LZSMAX	99.3
LZSMAXTIME	12/14/2023 11:30
LZSMIN	45.4
LZSMINTIME	12/14/2023 22:28
LAPK	117.1
LAPKTIME	12/14/2023 10:17
LCPK	116.7
LCPKTIME	12/14/2023 10:17
LZPK	117
LZPKTIME	12/14/2023 10:17
LAE	111.9
LAEQ	62.6
LAEQT80	53
LAFTM3	66.3
LAFTM5	67.6
LAIEQ	64.5
LAITM3	67.7
LAITM5	68.9
LCEQ	65.9
LCEQSUBLAEQ	3.3
LEPD	67.4
LEX8H	67.4
LZEQ	66.4
LAVGQ4	60.9
LAVGTHRESHOLD	0
TWAQ4	60.9
LAVGQ5	59.7
TWAQ5	59.7
CRITERIONTIMESEC	28800
LZF10	69.5
LZF50	58.5
LZF90	49
LZF95	48
LZFVAR	47
LCF10	69
LCF50	57.5
LCF90	46
LCF95	45
LCFVAR	43.5
LAF10	66.5
LAF50	54

LAF90	37
LAF95	35
LAFVAR	32.5
VARLN	99
LDN	65.8
LDEN	66
CNEL	66.1
DAYSTARTHR	7
EVENINGSTARTHR	19
NIGHTSTARTHR	23
DAYPENALTY	0
EVENINGPENALTY	5
NIGHTPENALTY	10
DOWNLOADSTATUS	FALSE
DELETED	FALSE
SITEID	Lymwood Pump Alt-2
LOCATIONID	Unallocated
PERSONID	Unallocated
PROCESSID	Unallocated
RESULT	C
PERIODCOUNT	1
OVERLOADTIMESEC	0
LEPDVAL	67.4
LEX8HVAL	67.4
EVENTMARKERCOUNT	0
EVENTSUMMARYCOUNT	1
EVENTCOUNT	0
AUDIONOTES	FALSE
CALBEFORECHANGE	3271.5
CALBEFOREPOT	22
CALBEFOREGAIN	FALSE
CALBEFOREVALIDATION	TRUE
CALAFTERSPL	0
CALAFTERCHANGE	0
CALAFTEROFFSETDB	0
CALAFTERPOT	0
CALAFTERGAIN	FALSE
CALAFTERVALIDATION	FALSE
PERIODNOTESCOUNT	0
PROFILENOTESCOUNT	0

Site 3

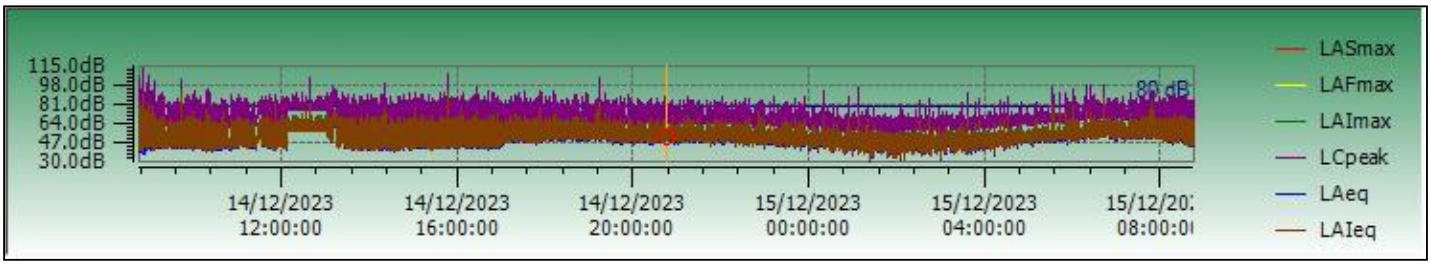
Casella CEL Ltd.

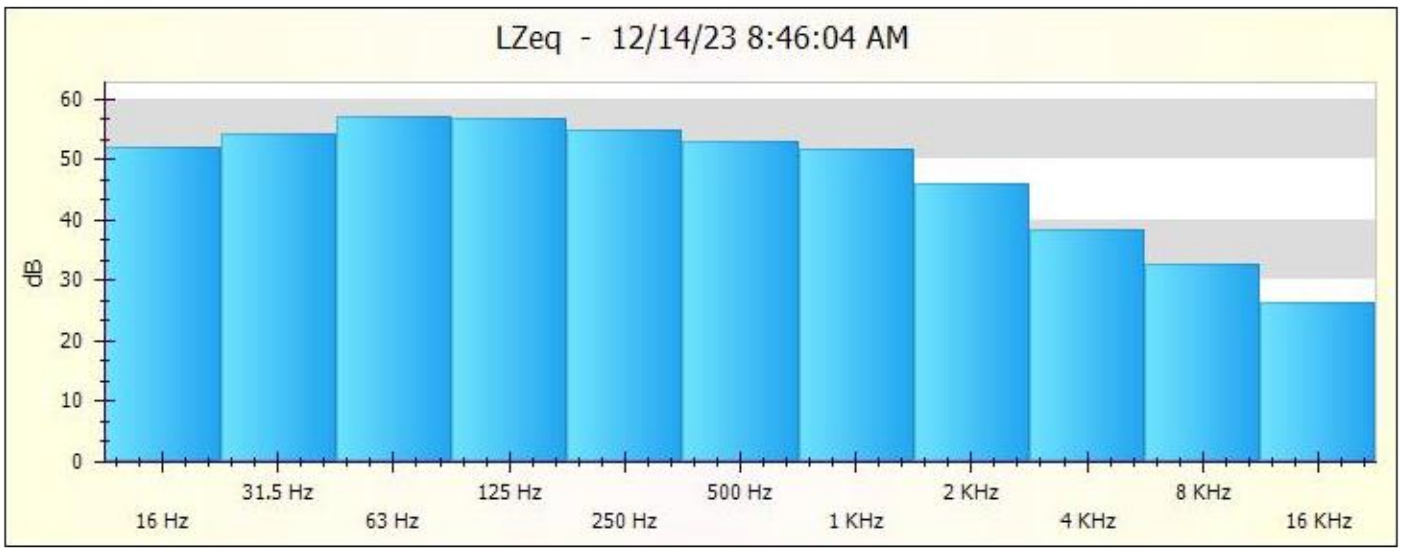
Report On Lynwood Pump

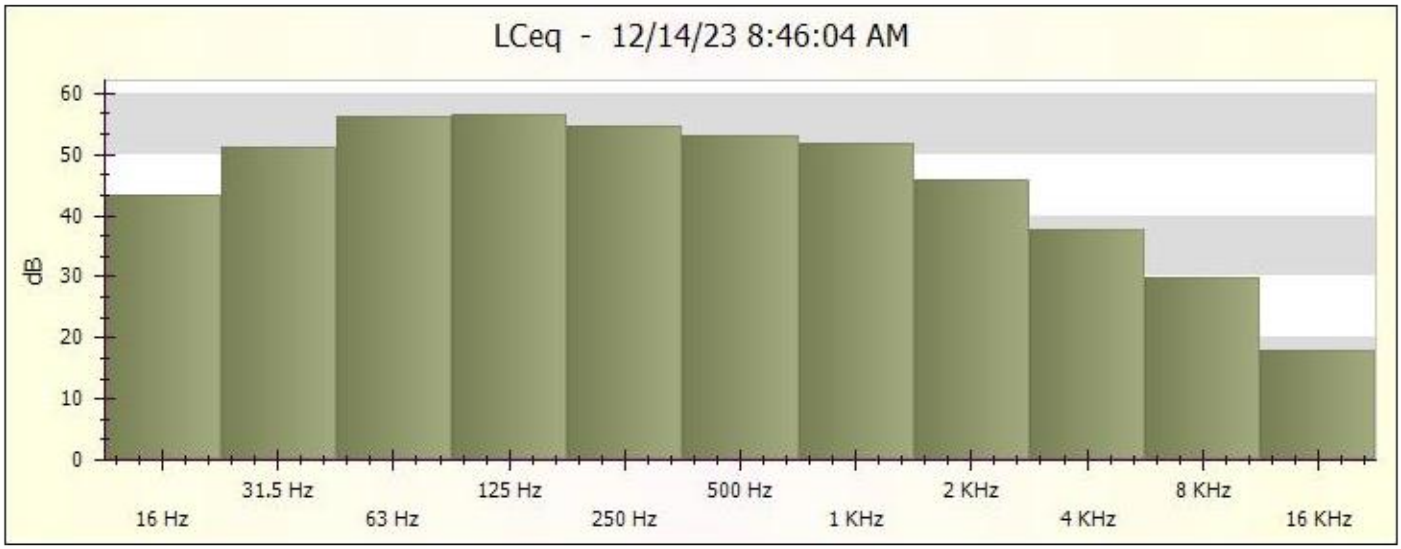
Report Sorted/Grouped By: Site(Ascending)

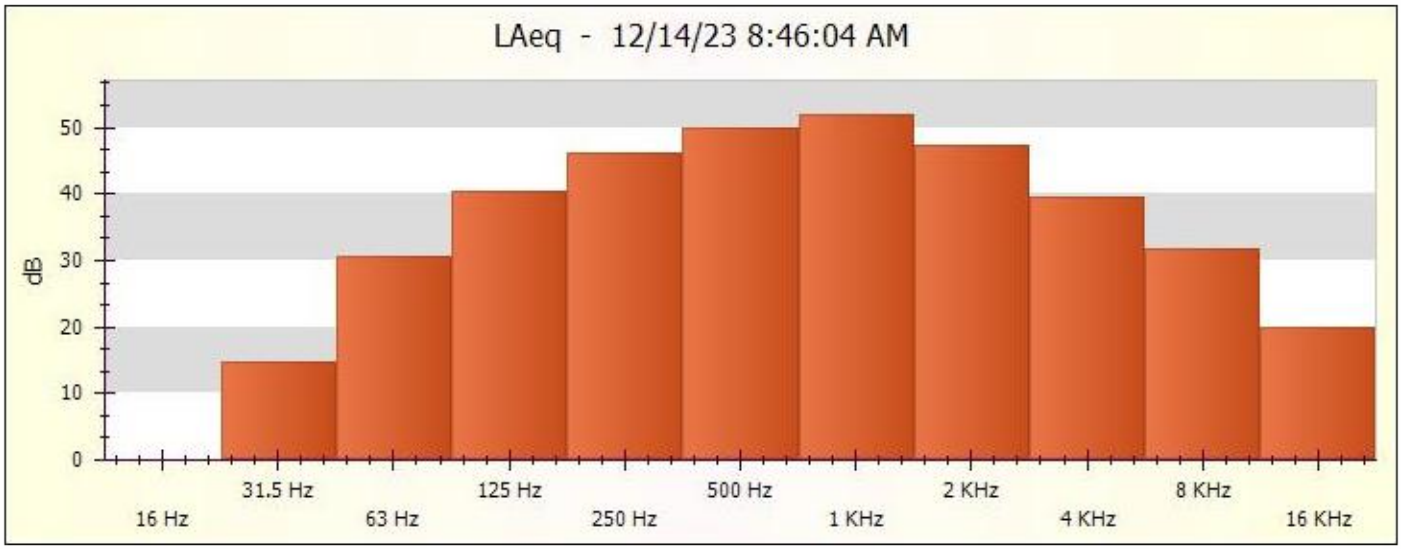
Lynwood Pump

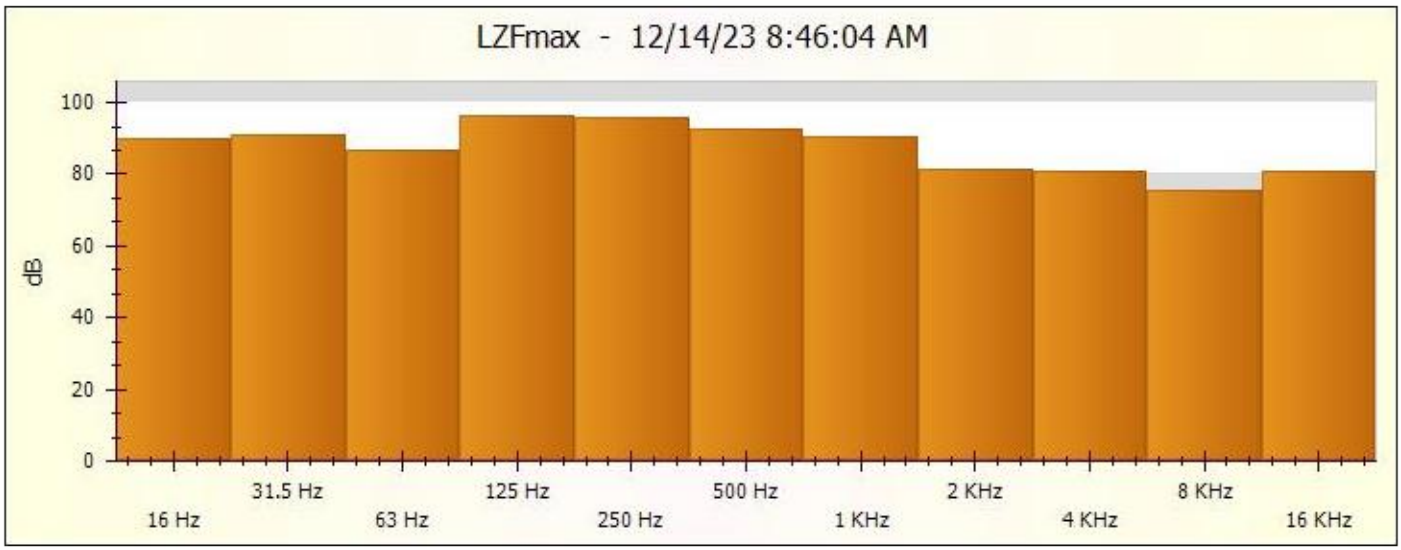
Instrument Model	**CEL-633C**		
Serial Number	2511397	LZeq	63.5 dB
Run Number	4	LCeq	62.4 dB
Site	Lynwood Pump	LCeq-LAeq	6.7 dB
Location	Unallocated	LAIeq	58.2 dB
Person	Unallocated	LAE	105.1 dB
Process	Unallocated	Response	Free Field
Start Date & Time	12/14/23 8:46:04 AM	End Date & Time	12/15/23 8:46:04 AM
Duration	24:00:00 HH:MM:SS	Pause Duration	00:00:00 HH:MM:SS
LAeq	55.7 dB	Calibration (Before) Date	12/14/23 8:16:40 AM
LCpeak with Time	112.9 dB (12/14/23 8:52:02 AM)	Calibration (Before) SPL	114 dB
Lepd(Projected)	60.5 dB	Calibration (After) Date	
Lex8h(Projected)	60.5 dB	Calibration Drift	0.0 dB
LAFmax with Time	94.1 dB (12/14/23 9:43:20 AM)	Overload	No
LAImax with Time	94.6 dB (12/14/23 9:43:20 AM)	Battery Low	No
LAFmin with Time	29.6 dB (12/14/23 1:24:44 AM)	Result	Cumulative
LAImin with Time	30.1 dB (12/14/23 1:24:44 AM)		
Notes			

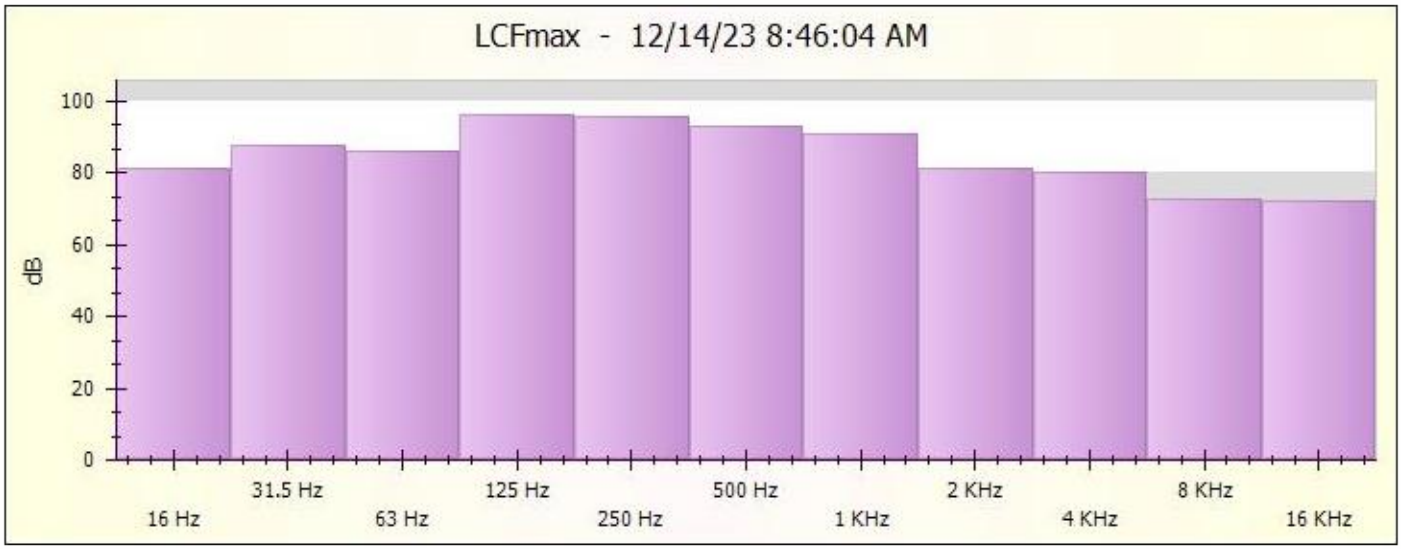


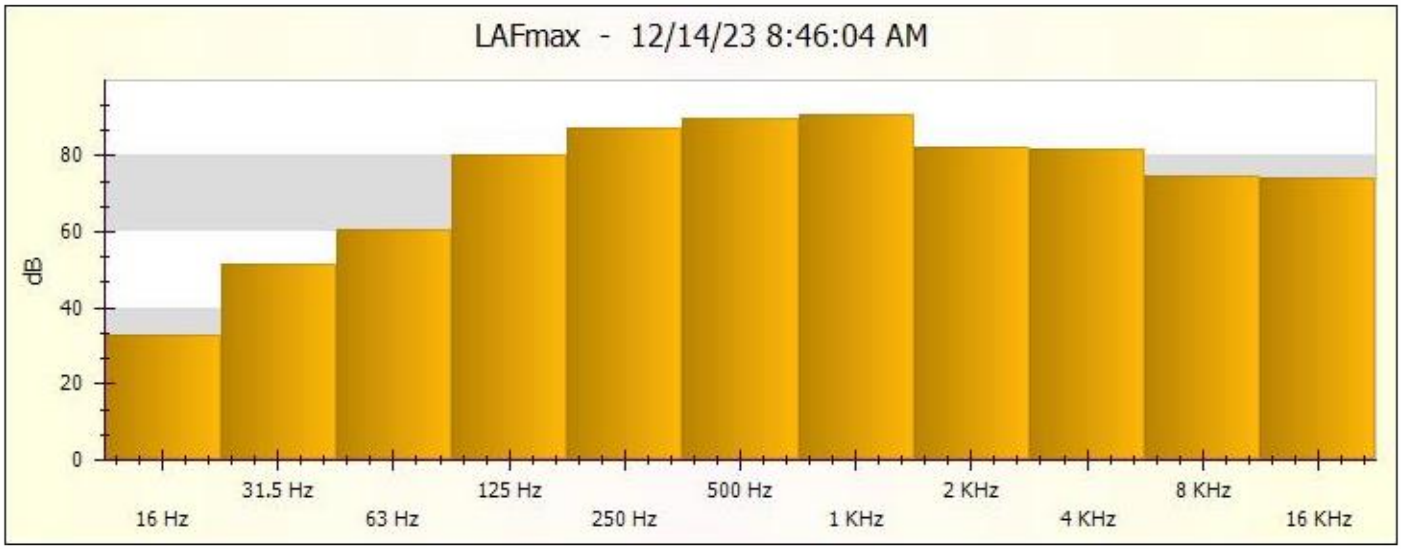



LCeq - 12/14/23 8:46:04 AM
dB
60
50
40
30
20
10
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LAeq - 12/14/23 8:46:04 AM
dB
50
40
30
20
10
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LZFmax - 12/14/23 8:46:04 AM
dB
100
80
60
40
20
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LCFmax - 12/14/23 8:46:04 AM
dB
100
80
60
40
20
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz


LAFmax - 12/14/23 8:46:04 AM
dB
80
60
40
20
0
16 Hz
31.5 Hz
63 Hz
125 Hz
250 Hz
500 Hz
1 KHz
2 KHz
4 KHz
8 KHz
16 KHz

Alternative C

ID	a2ca9d7d-3041-445f-9f85-e401d6a6b732
INSTRUMENTID	b92dbfe1-0e5b-43e9-aa6c-6f80b163cdea
INSTRUMENTSERIESID	aa808e62-dd1b-4564-944b-e64ff2bcf7f2
INSTRUMENTMODELID	b1w60o7d-227z-4aee-2323-71d79f830677
BATTERYLOW	FALSE
DURATIONSEC	86400
ENDDATETIME	12/15/2023 8:46
NOTES	
OVERLOAD	FALSE
PAUSEDURATIONSEC	0
RESPONSE	0
RUNNO	4
SERIALNO	2511397
STARTDATETIME	12/14/2023 8:46
CALAFTERDATE	1/1/2001 0:00
CALBEFOREDATE	12/14/2023 8:16
CALBEFOREOFFSETDB	9.1
CALBEFORESPL	114
CALDRIFTDB	0
OCTAVECOUNT	1
PROFILECOUNT	86400
LAFMAX	94.1
LAFMAXTIME	12/14/2023 9:43
LAFMIN	29.6
LAFMINTIME	12/14/2023 1:24
LAIMAX	94.6
LAIMAXTIME	12/14/2023 9:43
LAIMIN	30.1
LAIMINTIME	12/14/2023 1:24
LASMAX	91
LASMAXTIME	12/14/2023 9:43
LASMIN	31.1
LASMINTIME	12/14/2023 2:11
LCFMAX	97.9
LCFMAXTIME	12/14/2023 15:48
LCFMIN	41.8
LCFMINTIME	12/14/2023 1:24
LCIMAX	98.5
LCIMAXTIME	12/14/2023 15:48
LCIMIN	44.2
LCIMINTIME	12/14/2023 1:24
LCSMAX	95.3
LCSMAXTIME	12/14/2023 15:48
LCSMIN	43.3
LCSMINTIME	12/14/2023 1:24
LZFMAX	98

LZFMAXTIME	12/14/2023 15:48
LZFMIN	45.8
LZFMINTIME	12/14/2023 1:57
LZIMAX	98.5
LZIMAXTIME	12/14/2023 15:48
LZIMIN	48.8
LZIMINTIME	12/14/2023 1:48
LZSMAX	95.4
LZSMAXTIME	12/14/2023 15:48
LZSMIN	47.3
LZSMINTIME	12/14/2023 1:24
LAPK	113.5
LAPKTIME	12/14/2023 8:52
LCPK	112.9
LCPKTIME	12/14/2023 8:52
LZPK	115.3
LZPKTIME	12/14/2023 8:52
LAE	105.1
LAEQ	55.7
LAEQT80	47.2
LAFTM3	59.4
LAFTM5	60.7
LAIEQ	58.2
LAITM3	61.2
LAITM5	62.4
LCEQ	62.4
LCEQSUBLAEQ	6.7
LEPD	60.5
LEX8H	60.5
LZEQ	63.5
LAVGQ4	53.9
LAVGTHRESHOLD	0
TWAQ4	53.9
LAVGQ5	53.1
TWAQ5	53.1
CRITERIONTIMESEC	28800
LZF10	66
LZF50	58.5
LZF90	54
LZF95	52.5
LZFVAR	50.5
LCF10	65
LCF50	56
LCF90	51.5
LCF95	50
LCFVAR	47.5
LAF10	57.5

LAF50		50
LAF90		42.5
LAF95		41.5
LAFVAR		39
VARLN		99
LDN		59.8
LDEN		59.9
CNEL		60.2
DAYSTARTHR		7
EVENINGSTARTHR		19
NIGHTSTARTHR		23
DAYPENALTY		0
EVENINGPENALTY		5
NIGHTPENALTY		10
DOWNLOADSTATUS	FALSE	
DELETED	FALSE	
SITEID	Lynwood Pump	
LOCATIONID	Unallocated	
PERSONID	Unallocated	
PROCESSID	Unallocated	
RESULT	C	
PERIODCOUNT		1
OVERLOADTIMESEC		0
LEPDVAL		60.5
LEX8HVAL		60.5
EVENTMARKERCOUNT		0
EVENTSUMMARYCOUNT		1
EVENTCOUNT		0
AUDIONOTES	FALSE	
CALBEFORECHANGE		2.5
CALBEFOREPOT		25
CALBEFOREGAIN	FALSE	
CALBEFOREVALIDATION	TRUE	
CALAFTERSPL		0
CALAFTERCHANGE		0
CALAFTEROFFSETDB		0
CALAFTERPOT		0
CALAFTERGAIN	FALSE	
CALAFTERVALIDATION	FALSE	
PERIODNOTESCOUNT		0
PROFILENOTESCOUNT		0

Site 4 and Site 5

Measurement Report

Report Summary

Meter's File Name	LxT_Data.039.s	Computer's File Name	LxT_0006386-20231214 091406-LxT_Data.039.ldbin
Meter	LxT1 0006386		
Firmware	2.404		
User		Location	
Job Description			
Note			
Start Time	2023-12-14 09:14:06	Duration	0:15:25.8
End Time	2023-12-14 09:29:45	Run Time	0:15:14.7
		Pause Time	0:00:11.1

Results

Overall Metrics

LA_{eq}	63.4 dB		
LAE	93.0 dB	SEA	--- dB
EA	221.8 µPa²h		
EA8	7.0 mPa²h		
EA40	34.9 mPa²h		
LAS_{peak}	93.2 dB	2023-12-14 09:22:48	
LAS_{max}	77.4 dB	2023-12-14 09:26:03	
LAS_{min}	48.3 dB	2023-12-14 09:24:51	
LA_{eq}	63.4 dB		
LC_{eq}	70.3 dB	LC_{eq} - LA_{eq}	6.9 dB
LAI_{eq}	65.4 dB	LAI_{eq} - LA_{eq}	2.0 dB

Exceedances

	Count	Duration
LAS > 85.0 dB	0	0:00:00.0
LAS > 115.0 dB	0	0:00:00.0
LASpeak > 135.0 dB	0	0:00:00.0
LASpeak > 137.0 dB	0	0:00:00.0
LASpeak > 140.0 dB	0	0:00:00.0

Community Noise

LDN	LDay	LNight
63.4 dB	63.4 dB	0.0 dB

LDEN	LDay	LEve	LNight
63.4 dB	63.4 dB	--- dB	--- dB

Any Data

	A		C		Z	
	Level	Time Stamp	Level	Time Stamp	Level	Time Stamp
L_{eq}	63.4 dB		--- dB		--- dB	
$Ls_{(max)}$	77.4 dB	2023-12-14 09:26:03	--- dB		--- dB	
$LS_{(min)}$	48.3 dB	2023-12-14 09:24:51	--- dB		--- dB	
$L_{Peak(max)}$	93.2 dB	2023-12-14 09:22:48	--- dB		--- dB	

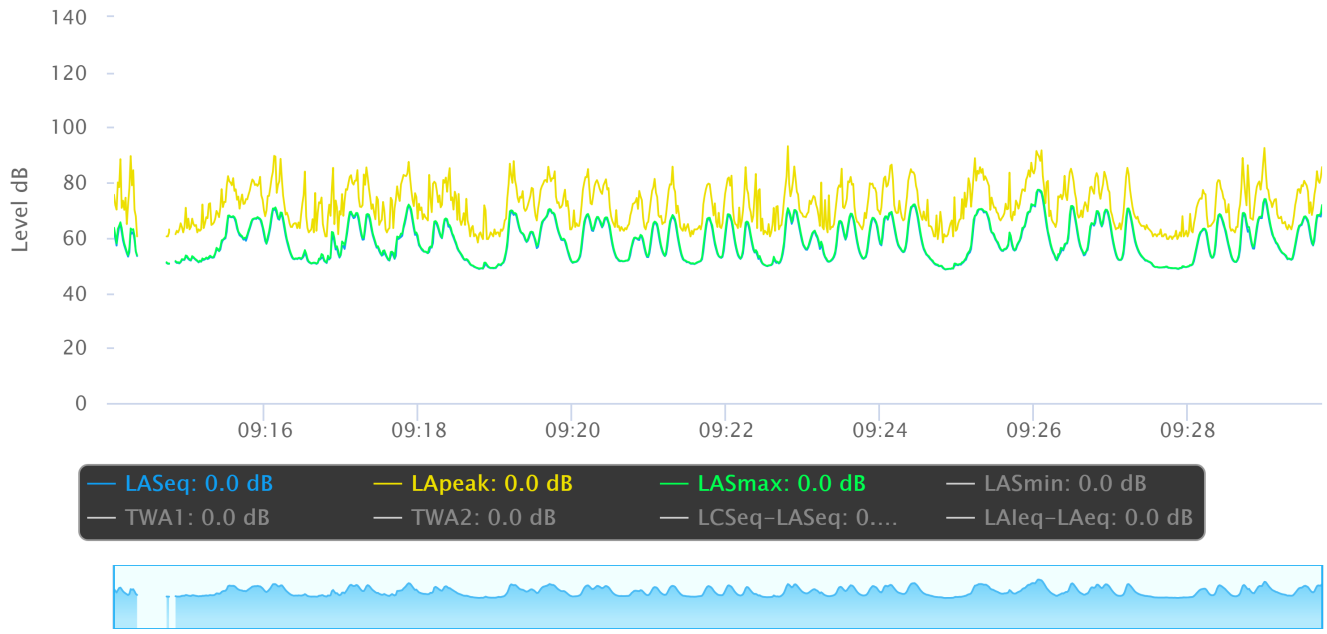
Overloads

Count	Duration
0	0:00:00.0

Statistics

LAS 5.0	69.3 dB
LAS 10.0	67.8 dB
LAS 33.3	61.7 dB
LAS 50.0	57.6 dB
LAS 66.6	53.8 dB
LAS 90.0	50.5 dB

Time History



Construction Noise Calculations - Alternative A (Site 1)

Construction Phase	Equipment Type[1]	USDOT Equipment Type[2]	No. Equipment[1]	Acoustical Usage Factor[2]	Maximum Noise Level @ 50 feet (Lmax)[3]	Typical Noise Level @ 50 feet (dBA_1)	Reference Distance (D_1)	Distance to Receptor (D_2)	Ground Absorption Constant (G)	Noise Level at Receptor (dBA_2)	Two Noisiest Equipment
			Unit:	%	dBA Lmax	dBA Leq	feet	feet	unitless	dBA Leq	dBA Leq
Existing Pump Station Removal	Excavators	Excavator	1	40	85	81	50	42	0	83	85
	Air Compressors	Compressor (air)	1	40	80	76	50	42	0	78	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	42	0	77	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	42	0	81	
	Pumps	Pumps	1	50	77	74	50	42	0	76	
Pavement Removal for New Pipe	Excavators	Excavator	2	40	85	81	50	40	0	83	86
Trench Excavation and Pipe Construction	Excavators	Excavator	1	40	85	81	50	40	0	83	84
	Pumps	Pumps	1	50	77	74	50	40	0	76	
	Welders	Welder/Torch	1	40	73	69	50	40	0	71	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	40	0	77	
Asphalt Pavement of Road	Off-Highway Trucks	Dump Truck	2	40	84	80	50	40	0	82	86
	Pavers	Paver	1	50	85	82	50	40	0	84	
	Rollers	Roller	1	20	85	78	50	40	0	80	
New Pump Station Construction	Air Compressors	Compressor (air)	1	40	80	76	50	40	0	78	83
	Dumpers/Tenders	Backhoe	1	40	80	76	50	40	0	78	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	40	0	77	
	Aerial Lifts	Man Lift	1	20	85	78	50	40	0	80	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	40	0	81	
	Pumps	Pumps	1	50	77	74	50	40	0	76	
	Cement Pump Truck	Concrete Pump Truck	1	20	82	75	50	40	0	77	

Notes: Distance to recepor (D_2) was determined based on the nearest noise senstive receptor for each construction phase.

Noise level at the receptor calculated based on the following equation:[4]

$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dBA_2 = Noise level at receptor

dBA_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$L = 10 * \log_{10} (10^{(L_1/10)}+10^{(L_2/10)})$

L = Combined noise level

L_1 = Noise level for first noisiest piece of equipment

L_2 = Noise level for second noisiest piece of equipment

[1] The type of construction equipment is based on construction equipment list provided by the applicant.

[2] U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

[4] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Construction Noise Calculations - Alternative B (Site 2)

Construction Phase	Equipment Type[1]	USDOT Equipment Type[2]	No. Equipment[1]	Acoustical Usage Factor[2]	Maximum Noise Level @ 50 feet (Lmax)[3]	Typical Noise Level @ 50 feet (dBA_1)	Reference Distance (D_1)	Distance to Receptor (D_2)	Ground Absorption Constant (G)	Noise Level at Receptor (dBA_2)	Two Noisiest Equipment
			Unit:	%	dBA Lmax	dBA Leq	feet	feet	unitless	dBA Leq	dBA Leq
Existing Pump Station Removal	Excavators	Excavator	1	40	85	81	50	42	0	83	85
	Air Compressors	Compressor (air)	1	40	80	76	50	42	0	78	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	42	0	77	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	42	0	81	
	Pumps	Pumps	1	50	77	74	50	42	0	76	
Pavement Removal for New Pipe	Excavators	Excavator	2	40	85	81	50	45	0	82	85
Trench Excavation and Pipe Construction	Excavators	Excavator	1	40	85	81	50	45	0	82	83
	Pumps	Pumps	1	50	77	74	50	45	0	75	
	Welders	Welder/Torch	1	40	73	69	50	45	0	70	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	45	0	76	
Asphalt Pavement of Road	Off-Highway Trucks	Dump Truck	2	40	84	80	50	45	0	81	85
	Pavers	Paver	1	50	85	82	50	45	0	83	
	Rollers	Roller	1	20	85	78	50	45	0	79	
New Pump Station Construction	Air Compressors	Compressor (air)	1	40	80	76	50	140	0	67	73
	Dumpers/Tenders	Backhoe	1	40	80	76	50	140	0	67	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	140	0	66	
	Aerial Lifts	Man Lift	1	20	85	78	50	140	0	69	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	140	0	70	
	Pumps	Pumps	1	50	77	74	50	140	0	65	
	Cement Pump Truck	Concrete Pump Truck	1	20	82	75	50	140	0	66	

Notes: Distance to recepor (D_2) was determined based on the nearest noise senstive receptor for each construction phase.

Noise level at the receptor calculated based on the following equation:[4]

$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dBA_2 = Noise level at receptor

dBA_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$L = 10 * \log_{10} (10^{(L_1/10)}+10^{(L_2/10)})$

L = Combined noise level

L_1 = Noise level for first noisiest piece of equipment

L_2 = Noise level for second noisiest piece of equipment

[1] The type of construction equipment is based on construction equipment list provided by the applicant.

[2] U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

[4] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Construction Noise Calculations - Alternative C (Site 3)

Construction Phase	Equipment Type[1]	USDOT Equipment Type[2]	No. Equipment[1]	Acoustical Usage Factor[2]	Maximum Noise Level @ 50 feet (Lmax)[3]	Typical Noise Level @ 50 feet (dBA_1)	Reference Distance (D_1)	Distance to Receptor (D_2)	Ground Absorption Constant (G)	Noise Level at Receptor (dBA_2)	Two Noisiest Equipment
			Unit:	%	dBA Lmax	dBA Leq	feet	feet	unitless	dBA Leq	dBA Leq
Existing Pump Station Removal	Excavators	Excavator	1	40	85	81	50	42	0	83	85
	Air Compressors	Compressor (air)	1	40	80	76	50	42	0	78	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	42	0	77	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	42	0	81	
	Pumps	Pumps	1	50	77	74	50	42	0	76	
Pavement Removal for New Pipe	Excavators	Excavator	2	40	85	81	50	40	0	83	86
Trench Excavation and Pipe Construction	Excavators	Excavator	1	40	85	81	50	40	0	83	84
	Pumps	Pumps	1	50	77	74	50	40	0	76	
	Welders	Welder/Torch	1	40	73	69	50	40	0	71	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	40	0	77	
Asphalt Pavement of Road	Off-Highway Trucks	Dump Truck	2	40	84	80	50	40	0	82	86
	Pavers	Paver	1	50	85	82	50	40	0	84	
	Rollers	Roller	1	20	85	78	50	40	0	80	
New Pump Station Construction	Air Compressors	Compressor (air)	1	40	80	76	50	95	0	70	76
	Dumpers/Tenders	Backhoe	1	40	80	76	50	95	0	70	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	95	0	69	
	Aerial Lifts	Man Lift	1	20	85	78	50	95	0	72	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	95	0	73	
	Pumps	Pumps	1	50	77	74	50	95	0	68	
	Cement Pump Truck	Concrete Pump Truck	1	20	82	75	50	95	0	69	

Notes: Distance to recepor (D_2) was determined based on the nearest noise senstive receptor for each construction phase.

Noise level at the receptor calculated based on the following equation:[4]

$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dBA_2 = Noise level at receptor

dBA_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$L = 10 * \log_{10} (10^{(L_1/10)}+10^{(L_2/10)})$

L = Combined noise level

L_1 = Noise level for first noisiest piece of equipment

L_2 = Noise level for second noisiest piece of equipment

[1] The type of construction equipment is based on construction equipment list provided by the applicant.

[2] U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

[4] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Construction Noise Calculations - Alternative D (Site 4)

Construction Phase	Equipment Type[1]	USDOT Equipment Type[2]	No. Equipment[1]	Acoustical Usage Factor[2]	Maximum Noise Level @ 50 feet (Lmax)[3]	Typical Noise Level @ 50 feet (dBA_1)	Reference Distance (D_1)	Distance to Receptor (D_2)	Ground Absorption Constant (G)	Noise Level at Receptor (dBA_2)	Two Noisiest Equipment
			Unit:	%	dBA Lmax	dBA Leq	feet	feet	unitless	dBA Leq	dBA Leq
Existing Pump Station Removal	Excavators	Excavator	1	40	85	81	50	42	0	83	85
	Air Compressors	Compressor (air)	1	40	80	76	50	42	0	78	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	42	0	77	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	42	0	81	
	Pumps	Pumps	1	50	77	74	50	42	0	76	
Pavement Removal for New Pipe	Excavators	Excavator	2	40	85	81	50	50	0	81	84
Trench Excavation and Pipe Construction	Excavators	Excavator	1	40	85	81	50	50	0	81	82
	Pumps	Pumps	1	50	77	74	50	50	0	74	
	Welders	Welder/Torch	1	40	73	69	50	50	0	69	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	50	0	75	
Asphalt Pavement of Road	Off-Highway Trucks	Dump Truck	2	40	84	80	50	50	0	80	84
	Pavers	Paver	1	50	85	82	50	50	0	82	
	Rollers	Roller	1	20	85	78	50	50	0	78	
New Pump Station Construction	Air Compressors	Compressor (air)	1	40	80	76	50	155	0	66	72
	Dumpers/Tenders	Backhoe	1	40	80	76	50	155	0	66	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	155	0	65	
	Aerial Lifts	Man Lift	1	20	85	78	50	155	0	68	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	155	0	69	
	Pumps	Pumps	1	50	77	74	50	155	0	64	
	Cement Pump Truck	Concrete Pump Truck	1	20	82	75	50	155	0	65	

Notes: Distance to recepor (D_2) was determined based on the nearest noise senstive receptor for each construction phase.

Noise level at the receptor calculated based on the following equation:[4]

$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dBA_2 = Noise level at receptor

dBA_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$L = 10 * \log_{10} (10^{(L_1/10)}+10^{(L_2/10)})$

L = Combined noise level

L_1 = Noise level for first noisiest piece of equipment

L_2 = Noise level for second noisiest piece of equipment

[1] The type of construction equipment is based on construction equipment list provided by the applicant.

[2] U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

[4] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Construction Noise Calculations - Alternative E (Site 5)

Construction Phase	Equipment Type[1]	USDOT Equipment Type[2]	No. Equipment[1]	Acoustical Usage Factor[2]	Maximum Noise Level @ 50 feet (Lmax)[3]	Typical Noise Level @ 50 feet (dBA_1)	Reference Distance (D_1)	Distance to Receptor (D_2)	Ground Absorption Constant (G)	Noise Level at Receptor (dBA_2)	Two Noisiest Equipment
			Unit:	%	dBA Lmax	dBA Leq	feet	feet	unitless	dBA Leq	dBA Leq
Existing Pump Station Removal	Excavators	Excavator	1	40	85	81	50	42	0	83	85
	Air Compressors	Compressor (air)	1	40	80	76	50	42	0	78	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	42	0	77	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	42	0	81	
	Pumps	Pumps	1	50	77	74	50	42	0	76	
Pavement Removal for New Pipe	Excavators	Excavator	2	40	85	81	50	105	0	75	78
Trench Excavation and Pipe Construction	Excavators	Excavator	1	40	85	81	50	105	0	75	76
	Pumps	Pumps	1	50	77	74	50	105	0	68	
	Welders	Welder/Torch	1	40	73	69	50	105	0	63	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	105	0	69	
Asphalt Pavement of Road	Off-Highway Trucks	Dump Truck	2	40	84	80	50	105	0	74	78
	Pavers	Paver	1	50	85	82	50	105	0	76	
	Rollers	Roller	1	20	85	78	50	105	0	72	
New Pump Station Construction	Air Compressors	Compressor (air)	1	40	80	76	50	105	0	70	75
	Dumpers/Tenders	Backhoe	1	40	80	76	50	105	0	70	
	Plate Compactors	Compactor (ground)	1	20	82	75	50	105	0	69	
	Aerial Lifts	Man Lift	1	20	85	78	50	105	0	72	
	Generator Sets	Generator (<25 KVA, VMS Signs)	1	50	82	79	50	105	0	73	
	Pumps	Pumps	1	50	77	74	50	105	0	68	
	Cement Pump Truck	Concrete Pump Truck	1	20	82	75	50	105	0	69	

Notes: Distance to recepor (D_2) was determined based on the nearest noise senstive receptor for each construction phase.

Noise level at the receptor calculated based on the following equation:[4]

$dBA_2 = dBA_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dBA_2 = Noise level at receptor

dBA_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

Combined noise levels at receptor calculated for two noisiest equipment using decibel addition:

$L = 10 * \log_{10} (10^{(L_1/10)}+10^{(L_2/10)})$

L = Combined noise level

L_1 = Noise level for first noisiest piece of equipment

L_2 = Noise level for second noisiest piece of equipment

[1] The type of construction equipment is based on construction equipment list provided by the applicant.

[2] U.S. Department of Transportation, 2006. FHWA Highway Construction Noise Handbook, Table 9.1. August.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-1. September.

[4] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Operational Noise - Pump Station

Site ID	No. Pumps	Pump Speed [1]	Pump Motor Power[1]	Estimated Noise Level per Pump @ 3.3 feet (dB_1)	Reference Distance (D_1)	Combined Noise Levels @ 3.3 feet	Distance to Receptor (D_2)	Ground Absorption Constant (G)	Noise Level at Receptor (dB_2)	Noise Reduction due to Building Structure	Adjusted Noise Level at Receptor (dB_2)
	Unit:	(rpm)	(kW)	(dB)	(feet)	(dB)	(feet)	unitless	(dB)	(dB)	(dB)
Site 1	4	1800	93.2	94.3	3.3	100.3	40	0	79	20	59
Site 2	4					100.3	140	0	68		48
Site 3	2					97.3	95	0	71		51
Site 4	2					97.3	155	0	67		47
Site 5	2					97.3	105	0	70		50

Notes: Distance to recepor (D_2) was determined based on the nearest noise senstive receptor for each alternative site location.

Noise level (dB) at 3.3 feet(1 meter) from the pump calculated based on the following equation:[2]

$dB1 = C + 3\log10(kW)$

Where:

dB1 = Noise level at 3.3 feet (1 meter) from the pump

kW = Pump drive motor nameplate power

C = Constant. C is equal to 88.4 for pumps above 75 kW with 1600-1800 rpm

Combined noise levels calculated using decibel addition:

$L = 10 * \log_{10} (10^{(L_1/10)}+\ldots+10^{(L_n/10)})$

Where:

L = Combined noise level

L_1 = Noise level for source 1

L_n = Noise level for source n

Noise level at the receptor calculated based on the following equation:[3]

$dB_2 = dB_1 + 10 * \log_{10}(D_1/D_2)^{2+G}$

Where:

dB_2 = Noise level at receptor

dB_1 = Noise level at reference distance

D_1 = Reference distance

D_2 = Receptor distance

G = Ground absorption constant (0 for hard surface, 0.5 for soft surface)

[1] Pump specifications were obtained Lynwood Pump Station Replacement Project Conceptual Drawing Page M6 dated 01/17/2023

[2] David A. Bies, Colin H. Hansen, Carl Q. Howard, and Kristy L. Hansen. Engineering Noise Control, Sixth Edition. Published August 8, 2023

[3] California Department of Transportation, 1998. Technical Noise Supplement (TeNS). Equation N-2141.2. October.

Construction Vibration Calculations for Potential Disturbance

Equipment[1]	Typical Vibration Level @ 25 Feet[2] (RMS_1)	Annoyance Vibration Threshold (RMS_2)	Reference Distance (D_1)	Buffer Distance to Annoyance Threshold (D_2)
Unit	**VdB**	**VdB**	**feet**	**feet**
Vibratory Roller	94	83	25	58
Loaded trucks	86	83	25	31

Notes:

Buffer distance to vibration threshold for human annoyance calculated based on the following equation:[3]

$D_2 = D_1 * 10^{((RMS_1 - RMS_2) / 30)}$

Where:

RMS_1 = Vibration level at reference distance

RMS_2 = Vibration threshold for human disturbance

D_1 = Reference distance

D_2 = Buffer distance to vibration threshold for human annoyance

Construction Vibration Calculations for Potential Building Damage

Equipment[1]	Typical Vibration Level @ 25 Feet[2] (PPV_1)	Building Damage Vibration Threshold (PPV_2)	Reference Distance (D_1)	Buffer Distance to Damage Threshold (D_2)
Unit	**in/sec**	**in/sec**	**feet**	**feet**
Vibratory Roller (FTA, underfined tonnage)	0.210	0.3	25	20
Loaded trucks	0.076	0.3	25	10

Notes:

Buffer distance to vibration threshold for building damage calculated based on the following equation:[3]

$D_2 = (PPV_1 / PPV_2)^{(1 / 1.5)} * D_1$

Where:

PPV_1 = Vibration level at reference distance

PPV_2 = Vibration threshold for building damage

D_1 = Reference distance

D_2 = Buffer distance to vibration threshold for building damage

[1] Project-specific construction list provided by the project applicant. Only equipment that generates substantial vibration is shown. for the project. Only equipment that generates substantial vibration is shown.

[2] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Table 7-4. September.

[3] Federal Transit Administration, 2018. Transit Noise and Vibration Impact Assessment Manual, Equations 7-2 and 7-3. September.