COUNTY OF MARIN

COMMUNITY DEVELOPMENT AGENCY
PLANNING DIVISION

**NOTICE OF DETERMINATION**
**Marin County Environmental Review**

**FILED**
8/30/2024
SHELLY SCOTT
MARIN COUNTY CLERK
By O. Lobato, Deputy
21 - 2024 - 153

**TO:** X Office of Planning and Research
X County Clerk, County of Marin

**FROM:** Marin County Community Development Agency

**SUBJECT:** Filing the Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

**Project Title:** Pt. Reyes Station Former U.S. Coast Guard Site; County of Marin Coastal Development Permit and Conditional Use Permit (Affordable Housing Project)

**State Clearinghouse #:** 2024040904

**Contact Person:** Michelle Levenson, Principal Planner

**Telephone Number:** (415) 473-6269

**Email Address:** michelle.levenson@marincounty.gov

**Assessor's Parcels:** 119-240-73 and 119-236-10

**Project ID:** P3710

**Project Sponsor:** Affordable Housing Organizations; Eden and CLAM

**Project Location:** 100 Commodore Webster Drive, Pt. Reyes Station

**Project Description:** The project entails the adaptive reuse and repurpose of the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. The proposed project will: 1) rehabilitate existing townhomes contained in 10 two-story buildings (Buildings 101, 102, 103, 104, 201, 202, 203, 204, 205, 206) to provide 36 affordable housing units; 2) rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units; 3) rehabilitate "Building 100A" to provide three housing units; 4) renovate and expand an existing kitchen/galley building (Building 1) to provide a resident services building including community education space; 5) construct a new on-site wastewater treatment system; 6) remove non-residential structures and provide bioretention facilities in environmentally sensitive habitat areas (ESHA); 7) remove trees from a riparian area; and 8) reconstruct an existing playground.

The Deputy Zoning Administrator approved the project on August 29, 2024, and has made the following determinations:

**N-25-01 Nce-25-03**

POSTED 8/30/24 TO 9/30/24

1. The project in its approved form will not have a significant effect on the environment.

2. A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.

3. Mitigation measures were made a condition of the approval of the project.

4. Findings were made pursuant to the provisions of CEQA.

I certify that a copy of the Mitigated Negative Declaration of Environmental Impact, and record of project approval is on file and may be examined at:

Agency: Marin County Community Development Agency

Address: 3501 Civic Center Drive, #308
San Rafael, CA 94903

By: _____ Date: August 29, 2024
Rachel Reid, Environmental Coordinator

*The filing of this Notice of Determination starts a 30 day statute of limitations on court challenges to the approval under CEQA.*

State of California - Department of Fish and Wildlife

# 2024 ENVIRONMENTAL DOCUMENT FILING FEE CASH RECEIPT

DFW 753.5a (REV. 01/01/24) Previously DFG 753.5a

Print | StartOver | Save

RECEIPT NUMBER: 21 08/30/2024 153

STATE CLEARINGHOUSE NUMBER *(If applicable)*

**SEE INSTRUCTIONS ON REVERSE. TYPE OR PRINT CLEARLY.**

| LEAD AGENCY | LEAD AGENCY EMAIL | DATE |
|---|---|---|
| MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY | | 08/30/2024 |

| COUNTY/STATE AGENCY OF FILING | DOCUMENT NUMBER |
|---|---|
| Marin | N-20-01 NCE-25-03 |

PROJECT TITLE

Pt Reyes Station Former US Coast Guard Site; County of Marin Coastal Development Permit and Conditional Use Permit (affordable housing)

| PROJECT APPLICANT NAME | PROJECT APPLICANT EMAIL | PHONE NUMBER |
|---|---|---|
| MARIN COUNTY COMMUNITY DEVELOPMENT AGENCY | | (415) 473-6269 |

| PROJECT APPLICANT ADDRESS | CITY | STATE | ZIP CODE |
|---|---|---|---|
| 3501 CIVIC CENTER DR, RM 308 | SAN RAFAEL | CA | 94903 |

**PROJECT APPLICANT** *(Check appropriate box)*

☑ Local Public Agency ☐ School District ☐ Other Special District ☐ State Agency ☐ Private Entity

**CHECK APPLICABLE FEES:**

| | | | |
|---|---|---|---|
| ☐ Environmental Impact Report (EIR) | $4,051.25 | $ | 0.00 |
| ☑ Mitigated/Negative Declaration (MND)(ND) | $2,916.75 | $ | 2,916.75 |
| ☐ Certified Regulatory Program (CRP) document - payment due directly to CDFW | $1,377.25 | $ | 0.00 |

☐ Exempt from fee

- ☐ Notice of Exemption (attach)
- ☐ CDFW No Effect Determination (attach)

☐ Fee previously paid (attach previously issued cash receipt copy)

| | | | |
|---|---|---|---|
| ☐ Water Right Application or Petition Fee (State Water Resources Control Board only) | $850.00 | $ | 0.00 |
| ☑ County documentary handling fee | | $ | 50.00 |
| ☐ Other | | $ | |

**PAYMENT METHOD:**

☐ Cash ☐ Credit ☐ Check ☐ Other **TOTAL RECEIVED** $ 2,966.75

| SIGNATURE | AGENCY OF FILING PRINTED NAME AND TITLE |
|---|---|
| X | MARIN COUNTY CLERK; O. LOBATO, ARCC SUPERVISOR |

**MARIN COUNTY DEPUTY ZONING ADMINISTRATOR**

**RESOLUTION NO. 24-105**
**A RESOLUTION APPROVING THE**
**MITIGATED NEGATIVE DECLARATION FOR THE**
**PT. REYES STATION FORMER US COAST GUARD SITE**
**COUNTY OF MARIN COASTAL DEVELOPMENT PERMIT AND CONDITIONAL USE PERMIT (PROJECT ID. P3710)**
**ASSESSOR'S PARCELS: 119-240-73 and 119-236-10**

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**SECTION I: FINDINGS**

1. **WHEREAS**, Affordable Housing Organizations; Eden and CLAM, submitted a proposal to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. The proposed project would: 1) rehabilitate existing townhomes contained in 10 two-story buildings (Buildings 101, 102, 103, 104, 201, 202, 203, 204, 205, 206) to provide 36 affordable housing units; 2) rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units; 3) rehabilitate "Building 100A" to provide three housing units; 4) renovate and expand an existing kitchen/galley building (Building 1) to provide a resident services building including community education space; 5) construct a new on-site wastewater treatment system; 6) remove non-residential structures and provide bioretention facilities in environmentally sensitive habitat areas (ESHA); 7) remove trees from a riparian area; and 8) reconstruct an existing playground. The property is located at 100 Commodore Webster Drive, Pt. Reyes Station and is further identified as Assessor's Parcels 119-240-73 and 119-236-10.

2. **WHEREAS**, the Marin County Community Development Agency prepared an Initial Study for the project, which concluded that potential impacts relating to hydrology and water quality, run-off and drainage, utility and service systems, air quality, geology and soils, biological, cultural and tribal cultural resources would be avoided or mitigated to a point where no significant effects would occur because revisions to the project have been agreed to by the applicant and there is no evidence that the project as revised may have a significant effect on the environment.

3. **WHEREAS**, the Marin County Environmental Planning Manager has determined that, based on the Initial Study, a Mitigated Negative Declaration of Environmental Impact is required for the project pursuant to the California Environmental Quality Act (CEQA).

4. **WHEREAS**, the Mitigated Negative Declaration of Environmental Impact for the project consists of the Mitigated Negative Declaration, Initial Study, responses to comments, and all supporting information incorporated by reference therein.

5. **WHEREAS**, the Negative Declaration of Environmental Impact was completed in compliance with the intent and requirements of CEQA, the State CEQA Guidelines, and the County's CEQA process.

6. **WHEREAS**, on April 22, 2024, the Initial Study and proposed Mitigated Negative Declaration of Environmental Impact were completed and distributed to agencies and interested parties to commence a 30-day public review period for review and comment on the Mitigated

Negative Declaration, and a notice of the public review period and public hearing was published in a general circulation newspaper pursuant to CEQA.

7. **WHEREAS**, at the close of the comment period on May 22, 2024, 103 comment letters had been submitted to the Community Development Agency - Environmental Planning by organizations, members of the public, and state and local agencies on the adequacy of the Mitigated Negative Declaration. The vast majority of the comment letters were supportive of the project, and a response to comments document was prepared to address the comments on the environmental review document. The conclusion of the Initial Study/Mitigated Negative Declaration remains unchanged: the Project, with the incorporation of mitigation measures identified in the Initial Study/Mitigated Negative Declaration, would have only less-than-significant environmental impacts. Nothing in the record provides substantial evidence to support a fair argument that the Project would have a significant effect on the environment. Therefore, per State CEQA Guidelines § 15064(f)(1), an Environmental Impact Report is not required.

8. **WHEREAS**, on August 29, 2024, the Marin County Deputy Zoning Administrator held a duly noticed public hearing to take public testimony and consider the project.

**SECTION II: ACTION**

THEREFORE, BE IT RESOLVED that the Marin County Planning Commission adopt the Mitigated Negative Declaration for the Pt. Reyes Station U.S. Coast Guard site Affordable Housing project Coastal Permit as adequate and complete in compliance with CEQA, the State CEQA Guidelines and the County Environmental Review Procedures, and as adequate and complete for consideration in making a decision on the merits of the project.

**SECTION III: APPEAL RIGHTS**

NOW, THEREFORE, BE IT FURTHER RESOLVED that this decision is final unless appealed to the Marin County Board of Supervisors. A Petition for Appeal and the required fee must be submitted in the Community Development Agency, Planning Division, Room 308, Civic Center, San Rafael, no later than ten business days from the date of this decision (September 13, 2024).

**SECTION VI: ADOPTION**

ADOPTED at a regular meeting of the Deputy Zoning Administrator of the County of Marin, State of California, on the 29 day of August 2024.



IMMANUEL BEREKET
MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

Attest:

Michelle Reed

MICHELLE REED
DZA Recording Secretary

**MARIN COUNTY DEPUTY ZONING ADMINISTRATOR**

**RESOLUTION NO. 24-106**

**A RESOLUTION APPROVING THE COUNTY OF MARIN COASTAL DEVELOPMENT PERMIT AND CONDITIONAL USE PERMIT**

**100 Commodore Webster Drive, Pt. Reyes Station**
**ASSESSOR'S PARCEL: 119-240-73 and 119-236-10**

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**SECTION I: FINDINGS**

1. Eden Housing and the Community Land Trust of West Marin (CLAM), on behalf of the owner, the County of Marin, have submitted a Coastal Development Permit and Conditional Use Permit application to rehabilitate the former U.S. Coast Guard site to provide 54 affordable housing units and related improvements. The property is located at 100 Commodore Webster Drive in Pt. Reyes Station and is further identified as Assessor's Parcel 119-240-73 and 119-236-10. The project is further described below:

The proposed project would consist of the following: (1) rehabilitate existing townhomes contained in 10, two-story buildings (Buildings 101 through 104, and 201 through 206) to provide 36 affordable housing units; (2) rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units; (3) rehabilitate "Building 100A" to provide 3 housing units; (4) renovate and expand an existing kitchen/galley building (Building 1) by 1,706 square feet and renovate Building 100C to provide a resident services building and community space for residents; (5) construct a new, on-site wastewater treatment system; (6) remove trees from a riparian area; (7) install stormwater pollution and prevention improvements including bioretention systems and retention areas; and (8) re-parcelize the one-lot site resulting in three lots consisting of the following: Parcel 2: 1.83 acres (79,713 square feet); Parcel A: 7.18 acres (312,602 square feet); Parcel B: 4.57 acres (199,221 square feet); and Parcel C: 20.04 acres (872,964 square feet).

The proposed residential units would be 100-percent affordable to low-income households. A total of seven, four-bedroom, 27, three-bedroom, five, two-bedroom and 15, one-bedroom units are proposed with the project (a total of 54 units would be provided).

The residential property management office would be staffed by an average of 3 employees. Typical days and hours of operation of the residential property management office would be 5 days a week, from 8:00am to 4:00pm. Four special events are proposed annually, likely between the hours of 12pm and 6pm on Saturdays and/or Sundays.

Other project activities include reconstruction of an existing playground, demolition of existing structures and impervious surfaces (Building 100A, pool, spa, tennis courts), and parking lot improvements.

2. On August 29, 2024, the Marin County Deputy Zoning Administrator held a duly noticed public hearing to take public testimony and consider the project.

3. The Marin County Community Development Agency prepared an Initial Study for the project, which concluded that potential impacts relating to hydrology and water quality, run-off and drainage, utility and service systems, air quality, geology and soils, biological, cultural and tribal cultural resources would be avoided or mitigated to a point where no significant effects would occur because revisions to the project have been agreed to by the applicant and there is no evidence that the project as revised may have a significant effect on the environment.

4. The application is submitted under the State Density Bonus Law (Government Code Section 65915). Pursuant to Government Code Section 65589.5(h)(2)(B), the proposed project meets the definition of a housing development project as it consists entirely of residential uses. The applicant is proposing to build 54 residential units and has submitted an affordable housing plan indicating that 100-percent of the residential units would be reserved for low-income households in perpetuity. Therefore, the project is considered a qualifying project under the State Density Bonus Law (Government Code Section 65915) because it would contain five or more residential units and qualifies for concessions, as well as incentives and waivers to development standards. Under the Density Bonus Law, the maximum allowable residential density is established by either the Countywide Plan Land Use Designation or the governing zoning, whichever is greater.

5. The proposed project is consistent with the Marin Countywide Plan (CWP) for the following reasons:

A. The project would result in the removal of a total of 36 trees consisting of non-native ornamental species many of which are in poor health, diseased and pose fire hazards. The project contains an extensive riparian swath along Lagunitas Creek with various riparian tree species; native trees in this area would not be removed with the project and installation of landscaping is proposed that is comprised of 47 native tree species such as coast redwood, California bay and bishop pine. Therefore, the project is consistent with the CWP woodland preservation policy (BIO-1.3) because the project would not entail the irreplaceable removal of a substantial number of mature, native trees.

B. As detailed in the Initial Study/Mitigated Negative Declaration for the project, focused on-site surveys determined that no special-status plants occur on the project site.

With regard to special-status fish species, CCC steelhead, CCC coho salmon, Tomales roach and the California freshwater shrimp are known to occur within reaches of Lagunitas Creek that traverse the project site. However, because no project activities are proposed within the creek and riparian vegetation would not be affected with the project, no direct impacts to special-status fish species would result with the project. Indirect impacts to special-status fish species would be avoided with the implementation of a project specific

Stormwater Pollution and Prevention Plan (SWPPP) and a Construction Stormwater General Permit, both of which would be required for the project.

The site contains habitat for several special-status animal species including the monarch butterfly, California red-legged frog, western pond turtle, as well as several special-status bird and mammal species. The Initial Study/Mitigated Negative Declaration prescribes several mitigation measures that would reduce potential effects to special status animal species. These mitigation measures have been included as Conditions of Approval as detailed below and would ensure that the project would not adversely affect special-status animal species. Such measures include timing tree removal activities outside of the roosting season for monarch butterfly, engaging in the services of a qualified biologist who would be on site during project activities that may affect the California red-legged frog, installing exclusion fencing around work areas prior to commencement of construction activities, etc.

Therefore, the project is consistent with the CWP special-status species protection policy (BIO-2.2) with implementation of the conditions of approval required below.

C. While project activities include the removal of existing structures and impervious surfaces, as well as installation of biofiltration systems in portions of the riparian corridor, these activities would result in improvements to transitions and connections between habitat areas by slowing, containing and filtering stormwater runoff. Therefore, the project is consistent with the CWP natural transition and connection policies (BIO 2.3 and BIO 2.4) because the project would not substantially alter the margins along riparian corridors, wetlands, baylands, or woodlands.

D. The project site contains both Wetland Conservation Areas (WCAs) and Stream Conservation Areas (SCAs). The WCAs are present along the northwestern portion of the site, directly west of Buildings 104 and 103. Project activities in proximity to the WCA include rehabilitation of existing structures (Building 104 and 103) and repair and replacement of existing hardscape surfaces with no new incursion into the WCA.

The onsite SCAs exist along the eastern portion of the site and are associated with Lagunitas Creek. Project activities in the SCA consist of the demolition of existing structures, removal of impervious surfaces and the installation of biofiltration improvements that would improve drainage and filtration on the site, resulting in improvements to the SCA and improving the health of the creek.

Therefore the project would be consistent with the CWP WCA and SCA policies (BIO-1.1, BIO-3.1 and BIO-4.1) particularly the SCA policies as project storm water pollution and prevention activities would improve the health of riparian areas.

E. As sewer service is not available in the project area, the project would include the installation of an onsite wastewater treatment system that would be located on the southwest edge of the project site, near the entrance on Commodore Webster Drive. The 10,000-gallon per day system would consist of under- and above-ground tanks that would be used to store and treat project generated wastewater. The primary mode of wastewater dispersal during the dry season would be through subsurface drip irrigation lines located

throughout the project site. In addition, a 0.22-acre leach field and 10,000-gallon above-ground storage tank would be located adjacent to the treatment system, south of Commodore Webster Drive.

North Marin Water District has two active water supply wells located on the project site that provide the primary source of water supply for a service area of more than 20 square miles in the Point Reyes area. The wells are approximately 60 feet deep. Drinking water source "Protection Zones" are applied to groundwater sources to manage potential risks of contamination.

Due to the capacity and nature of the system and the presence of NMWD water wells, the wastewater treatment system will require permitting through the California Regional Water Quality Control Board (RWQCB). As such, the system is required to meet the State's Recycled Water Standards, established in California Code of Regulations Title 22 for disinfected tertiary treatment. The proposed treatment protocol is designed to provide a high level of treatment to protect groundwater resources at the site, to allow for reuse of the water, and ensure reliable effluent quality.

The tertiary treated recycled water would be applied to either the leach field or to landscape areas within the project site, depending on the season and weather conditions. The recycled water would be applied to the leach field during the rainy season when vegetation water demand is less than the recycled water volume. During the summer months, it is anticipated that up to 100-percent of the recycled water would be applied to project landscaping. Because of the low rate of application of the recycled water and its application at the subsurface, the wastewater would not migrate to the creek and would not result in degradation to creek water quality. In addition, because of the treatment protocol that would be used to recycle the water, the project would not substantially degrade groundwater quality in the project area.

The landscaped area that would be irrigated with the recycled water is within the drinking water source "Protection Zone", and a small portion of the leach field is also proposed in the "Zone". To ensure that potential effects to groundwater are minimized with the project, several mitigation measures were identified in the project Initial Study/Mitigated Negative Declaration and are included as Conditions of Approval below. These include the following: requiring that the septic leach field be redesigned such that none of the septic field is within the "Protection Zone"; requiring a program and procedures to identify when recycled water can be applied to landscaping that is based on the depth to groundwater and forecasted rain events; monitoring groundwater between the irrigation areas and the NMWD wells and defining corrective action should monitoring reveal groundwater concerns that could affect the wells; prohibiting the application of recycled water within 24-hours of a precipitation event; and monitoring the wastewater system effluent and groundwater in accordance with RWQCB permitting requirements.

Construction of the project would be required to comply with a project Stormwater Pollution and Prevention Plan (SWPPP) prepared in accordance with County and State requirements, and subject to the approval by the Department of Public Works. The SWPPP would require the implementation of best management practices (BMPs) such as the installation of silt fences and straw wattles to control and contain project-related erosion. In addition, the

BMPs would address potential leaks or spills of hazardous materials and avoid transport of such materials to Lagunitas Creek.

The project includes the installation of bioretention areas that would increase infiltration and groundwater recharge, as well as the removal of impervious surfaces which prohibit infiltration of run off and result in discharges into the creek. By installing biofiltration areas, site run off would be redirected to the biofiltration areas where it would be contained and filtered prior to discharge into the creek.

Due to the design of the project and implementation of the conditions of approval required below, the project is consistent with the CWP water quality policies and would not result in substantial soil erosion or discharge of sediments or pollutants into surface runoff (WR-1.3, WR-2.2, WR-2.3).

F. The project site is located within a seismically active region. The San Andreas Fault is located approximately 0.8 mile southwest of the project site. The project would be constructed in conformance with County earthquake standards, as verified during review of the Building Permit application. In addition, site specific recommendations for site preparation and grading, foundation design and seismic design would be integrated into the project to ensure that it is consistent with CWP seismic hazard policies (CWP Policies EH-2.1, EH-2.3, and CD-2.8).

G. The project is consistent with CWP fire hazard management policies (EH-4.1, EH-4.2, EH-4.5) because it would meet all fire safety requirements, as verified by the local fire protection district during review of the Building Permit application.

H. The project is located in a low-lying area adjacent to Lagunitas Creek and is not located on a ridgeline. The project site is visible from Commodore Webster Drive as you enter the project area but has very limited visibility from neighboring properties due to the presence of mature vegetation and topography. As the project is primarily comprised of the rehabilitation of existing structures and is not visible from adjacent properties, the project is consistent with CWP aesthetic policies and programs (DES-4.1 and DES-4.e) because it would protect scenic quality and views of ridgelines and the natural environment from adverse impacts related to development.

6. The proposed project is consistent with the Point Reyes Station Community Plan for the following reasons:

A. The project is consistent with the rural character and natural resource protection policies (PA-3.8, NR-2.1, NR-3.2, NR-3.3, NR-4.3, NR-5.2, NR-6.1, NR-6.2, and NR-6.5) because the project has been designed to be in keeping with the rural residential area by minimizing the construction of roads and also maintains adequate setbacks from bluffs, riparian and stream protection areas, and wildlife habitat protection areas.

B. The project is consistent with the natural resource protection and rural character policies (PA-3.9, NR-6.1, and NR-6.2) because the landscaping conforms to the Point Reyes Station Landscaping Guide and preserves wildlife habitats and native vegetation.

C. The project is consistent with the natural resource protection policies (NR-7.1 and NR-7.2) because it would not affect public views of visual resources, and all development has been sited on the least visible portion of the site, away from ridgelines, and minimizes grading and filling.

D. The Initial Study/Mitigated Negative Declaration for the project includes an analysis of cultural resources, including the potential to effect historic-era resources. The site structures were constructed in the early 1970's and the site is not located in a historic district nor is it within the viewshed of a historic district. The project is consistent with the Historic Resource Protection policies (HR-1.2 through 1.6) because the project is not located within the Historic and Architectural Inventory Key of the 1976 Historic Resource Survey, is not located within the Historic Area, and does not involve alteration, additions or demolition of a pre-1930's structure.

7. The project is consistent with the Mandatory Findings for Coastal Development Permit approval (Marin County Coastal Code Section 20.70.070) for the following reasons:

**A. Coastal Access. The proposed project, as conditioned, is consistent with the applicable policies contained in the Public Coastal Access section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.180 (Public Coastal Access). Where the project is located between the nearest public road and the sea, a specific finding must be made that the proposed project, as conditioned, is in conformity with the public access and recreation policies of Chapter 3 of the California Coastal Act (commencing with Section 30200 of the Public Resources Code)**

The project site is not located between the sea and the nearest public road. While the project would provide additional affordable housing units thereby housing residents at the site, it is not anticipated that the project would negatively affect coastal access due to the distance of the site from existing coastal public access areas, and the numerous public access opportunities available to future residents that are located in proximity to the site.

**B. Biological Resources. The proposed project, as conditioned, is consistent with the applicable policies contained in the Biological Resources section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.050 (Biological Resources).**

As discussed above, the site contains habitat for several special status animal species, as well as seasonal and riparian wetlands. The Biological Assessment(s) prepared for the project identify three different Environmentally Sensitive Habitat Areas (ESHAs) that occur on the site and are described in more detail below:

*Terrestrial ESHA:* Purple needlegrass grassland is considered a terrestrial ESHA and is present along the uppermost northern slopes of the project site, as well as in a smaller area in the southern portion of the site. Project activities would avoid all terrestrial ESHA areas by more than 50 feet, thus the project is consistent with Policy C-BIO-3, 3 of the LCP which requires a minimum buffer of 50 feet from these areas.

*Wetland ESHA:* Wetland ESHA are located in low-lying concave areas of the site in the Lagunitas Creek flood plain, as well as an additional location on the hillslope along the northwestern portion of the site. LCP Policies C-BIO-18 and -19 state that a minimum buffer area of 100 feet in width from the edge of wetland vegetation shall be maintained in a natural condition along the periphery of all wetlands. Development can only be permitted in the 100-foot buffer area if supported by the findings of a site assessment; the buffer cannot be reduced to less than 50 feet from the edge of wetland vegetation.

While the project has been designed to avoid direct impacts to wetland ESHAs and to avoid project activities within ESHA buffers to the maximum extent feasible, due to the previously developed nature of the site, the proposed removal of existing structures and the installation of bioretention areas would occur within the 100-foot wetland ESHA buffer thus a buffer adjustment is required for the project.

Consistent with Policy C-BIO-19, the wetland buffer would not be reduced to less than 50 feet from the edge of wetland vegetation. In addition, the project activities proposed in the wetland buffer can only be conducted in this area due to the nature of activities (e.g., removal of existing structures) and would result in partial restoration of the wetland and associated ESHA by removing impervious materials and installing bioretention areas that will aid in directing, holding and filtering storm water run off on the site (a total of 4,849 square feet of stormwater management improvements are proposed in the wetland ESHA buffer). As stated in the project Biological Assessment, the installation of stormwater management improvements will improve water quality within the aquatic EHSA area, consistent with LCP policies regarding buffer adjustments that state, "A Coastal Development Permit authorizing a buffer adjustment shall require measures that create a net environmental improvement over existing conditions...appropriate measures may include...implementing new measures to reduce the rate or volume of stormwater run-off and improve the quality of stormwater run-off (e.g....site features designed to capture, absorb and filter stormwater...". Additional measures supporting a buffer adjustment include: the removal of non-native vegetation such as the eucalyptus trees that would be removed with the project; increasing native vegetation cover (2,244 square feet of irrigated wildflower and native grass seed is proposed in the wetland buffer); and reducing water consumption for irrigation by using high efficiency irrigation systems and drought tolerant landscape species such as the landscaping pallet proposed with the project.

*Coastal Stream and Riparian Vegetation ESHA:* As Lagunitas Creek borders the site to the west, a riparian vegetation ESHA buffer extends over the western portion of the site. While no project activities are proposed within the creek or directly on the creek banks, work consisting of the installation of bioretention areas and the removal of existing structures is proposed within the riparian ESHA buffer. A total of 8,823 square feet of impervious paving would be removed from and 1,707 square feet of stormwater management features would be installed in the riparian ESHA.

LCP Policies C-BIO-24 and -25 contain requirements for riparian vegetation EHSA buffers. The policies state that riparian buffers shall be wider than 50 feet from the edge of riparian vegetation and that a buffer adjustment may be considered if certain findings can be made. For the proposed project, because the activities proposed in the buffer consist of removing existing structures and installing bioretention improvements to capture and treat runoff before it enters the creek, the "development" cannot be located elsewhere. Similar to wetland ESHA

buffer adjustments, riparian vegetation ESHA buffer adjustments may be authorized in a Coastal Development Permit if appropriate measures are included such as improving the quality of stormwater run-off, such as those improvements proposed with the project. As described above, additional measures such as the removal of non-native invasive vegetation, planting of native vegetation and the use of drought tolerant landscape plants are also proposed and support the buffer adjustment.

**C. Environmental Hazards. The proposed project, as conditioned, is consistent with the applicable policies contained in the Environmental Hazards section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.060 (Environmental Hazards).**

1. Dune Protection (Marin County Interim Code Section 20.64.060.A)

There are no dunes on the project site therefore this finding does not apply to the proposed project.

2. Shoreline Protection (Marin County Interim Code Section 20.64.060.B)

The project site is not located on a bluff and does not involve the installation of shoreline protective works therefore this finding is not applicable to the proposed project.

3. Geologic Hazardous Area (Marin County Interim Code Section 20.64.060.C)

The site is not located on the Unit I LCP geologic hazards map.

**D. Agriculture and Mariculture. The proposed project, as conditioned, is consistent with the applicable policies contained in the Agriculture and Mariculture sections of the Marin County Land Use Plan and the applicable agricultural and maricultural standards contained in Chapter 20.32 (Standards for Specific Land Uses).**

The site is not currently used for agriculture or mariculture and has two zoning designations, C-OA (Coastal-open area) and C-RA-B2 (Coastal, residential agriculture). The LCP policies regarding agriculture and mariculture are not applicable to the project.

**E. Water Resources. The proposed project, as conditioned, is consistent with the applicable policies contained in the Water Resources section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.080 (Water Resources).**

As discussed in detail above, the project would involve the installation of an on-site wastewater system. The dual system would be comprised of two modes for wastewater dispersal; during the dry months the treated wastewater would be applied to landscaped areas and during the wet months the wastewater would be applied to the septic leach field. The site contains sensitive water resources including two North Marin Water District domestic water wells, Lagunitas Creek, and aquatic wetlands.

Due to the nature and size of the septic system, the RWQCB is the permitting agency for the system and State required permits for the system would contain several long-term monitoring

and maintenance requirements. These requirements, imposed as conditions of approval below, state that the applicants must adhere to a weather-dependent schedule with regard to application of the wastewater on landscaping, submit rigorous monitoring data for the wastewater system effluent, and monitor and submit the result of groundwater quality quarterly. Should monitoring indicate non-compliance with RWQCB requirements, corrective action shall be required. In addition, the project has been conditioned to modify the septic leach field such that none of the field is located within NMWD's protection zone for the on-site wells.

The project would involve the removal of 8,823 square feet of impervious material from ESHA buffer areas, including pavement, structures and other existing improvements, and the installation of bioretention features and landscaping. The bioretention improvements would improve the water quality of runoff entering Lagunitas Creek over existing conditions.

Construction of the project would require grading to construct the bioretention areas and the operation and storage of construction equipment. Prior to approval of a building permit for the project, the applicants must receive approval of a SWPPP (to be reviewed by the County's DPW). The SWPPP will contain best management practices to ensure that construction activities are conducted in a manner that will minimize effects to water quality.

**F. Community Design. The proposed project, as conditioned, is consistent with the applicable policies contained in the Community Design section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.100 (Community Design).**

The project area is located in a low-lying portion of the site, that is not readily visible from adjacent properties. With the exception of a(n) 1,706-square-foot addition to Building 1 that would comply with zoning standards for the respective zoning district, the project involves the rehabilitation of existing structures with no expansion of building footprints or increases in building height. While tree removal is proposed with the project, it would consist of the removal of nonnative tree species and replanting of native tree species is proposed. The project would be required to comply with County lighting requirements that ensure that exterior lighting is designed and installed to limit nighttime emissions and glare.

**G. Community Development. The proposed project, as conditioned, is consistent with the applicable policies contained in the Community Development section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.110 (Community Development).**

The proposed project site is located within 0.5 mile of downtown Pt. Reyes Station, in close proximity to an existing developed area and within the Pt. Reyes Station Village limit boundaries. North Marin Water District has stated that the site is currently served and will continue to be served with the project. The project would be served by existing roadways and driveways with minimal improvements proposed to conform to the requirements of the local fire agency and DPW, while still maintaining the rural character of the access ways.

Table 5-4b of the County's Coastal Code contains development standards for the C-OS zoning district. While the table does not contain a maximum floor area ratio for sites zoned C-

OS, LCP Policy C-CD-22 states that lands with a LCP Land Use Designation of "Open Space" are subject to a maximum floor area ratio (FAR) of 0.01 to 0.09. Prior to parcelization, the FAR of the site in its entirety would be 0.04. After parcelization, the floor area ratio on the parcel that would contain the residential development would be 0.196. However, Note 5 of Table 5-4-b of the Coastal Code states that, "Maximum floor area is determined through the Coastal Development Permit" process. The floor area of the development has been deemed the minimum needed to provide much needed affordable housing in coastal Marin County, consistent with LCP Housing Policy C-HS-2. The project has been designed and conditioned to ensure consistency with LCP policies, particularly those related to ESHAs and water quality.

Table 5-4-b of the County's Coastal Zoning Code contains notes regarding maximum residential density in C-OA zoning districts which state the density is determined through the Coastal Development Permit process, and that the, "maximum residential density for proposed divisions of land for that portion or portions of properties with Environmentally Sensitive Habitat Areas and buffers, and properties that lack public water or sewer systems, shall be calculated at the lowest end of the density range as established by the governing Land Use Category, except for ...lots proposed for affordable housing, and if it can be demonstrated that the development is consistent with applicable Environmentally Sensitive Habitat Area and hazards policies and will be served by on-site water and sewage disposal systems...".

As a qualifying density bonus project under State law, the maximum density is determined by either the site zoning designation or the CWP land use designation, whichever allows a greater density. There is no density range, or maximum density, prescribed for the site under either the CWP land use designation or under the zoning designation, and no FAR established by the C-OA zoning district. As a result, the proposed density does not exceed maximum limits pursuant to State requirements. Further the project would be developed consistent with the LCP policies for ESHAs and ESHA buffers and would be served by on-site water and a new sewage disposal system.

Section 20.70.090 of the County's Coastal Code contains standards for land divisions. As described above the site contains one legal lot of record; a parcelization is proposed that would divide the site into four lots. Proposed "Parcel A" and "Parcel 2" would contain the residential development and onsite wastewater system, respectively. Proposed "Parcel C" would contain Lagunitas Creek and the associated riparian ESHA buffer; proposed "Parcel B" would contain terrestrial and wetland ESHAs and associated ESHA buffers. The proposed land division is consistent with the Coastal Code land division standards as the existing and proposed development has been identified on the future parcels and designed and conditioned below to ensure consistency with the LCP policies. In addition, the undeveloped parcels, Parcels C and B, would remain undeveloped as conditioned below ensuring continued preservation of coastal resources.

*Pt. Reyes Station Community Specific Policies*-The LCP contains several policies specific to development within Pt. Reyes Station. The project would be consistent with these policies as new building area proposed with the project would not exceed 25 feet in height and landscaping is proposed that would contain native species; natural habitats would also be preserved. Light fixtures proposed with the project would be fully shielded to direct light

downwards and would complement the architectural style of structures and would be the minimum necessary for public safety.

**H. Energy. The proposed project, as conditioned, is consistent with the applicable policies contained in the Energy section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.120 (Energy).**

The residential units would use all electric appliances. Roof top solar is also proposed on all buildings as well as two ground mounted solar arrays. The project would be required to comply with the County's Title 24 requirements as determined through the building permit process.

**I. Housing. The proposed project, as conditioned, is consistent with the applicable policies contained in the Housing section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.130 (Housing).**

Consistent with the LCP policies, the proposed residential units would be affordable to low-income households. As discussed above, State Density Bonus law states that qualifying projects be afforded the maximum density allowable by either the zoning designation or the CWP land use designation, whichever is greater. Neither the zoning designation, C-OS or CWP Land Use Designation, C-OA contain a range or maximum density limit for the site.

**J. Public Facilities and Services. The proposed project, as conditioned, is consistent with the applicable policies contained in the Public Facilities and Services section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.140 (Public Facilities and Services).**

The site is currently served by utility providers including Pacific Gas and Electric and NMWD, and would continue to be served with the project. An on-site wastewater system would be constructed with the project and has been designed with adequate capacity to accommodate wastewater generated by the project. The development does not entail the development of new roads or driveways. Consistent with LCP Policy LPFS-6, the on-site wastewater disposal system will require permitting for the construction and maintenance of the system thereby ensuring that on-site coastal streams and wetlands would be protected.

With the proposed parcelization, the septic system would be located on a separate parcel than the residential development. LCP Policy C-PFS-9 states that an individual sewage disposal system serving buildings should be located on the same lot as the buildings. However LCP Policy C-PFS-12 allows the construction of off-site septic systems for affordable housing located within village limit boundaries such as the proposed project as long as the project complies with the LCP policies and would not interfere with existing or continued agricultural operations. As detailed in the Coastal Development Permit findings, the project would comply with the County's LCP. In addition, as there are no existing agricultural activities on the existing and future parcel(s), the septic system would not interfere with agricultural activities. As stipulated in the RWQCB permit for the project, legal and monetary assurances will be required of the applicants to ensure monitoring of the septic system. Lastly, as conditioned below, the proposed project would avoid and minimize potential impacts to coastal resources.

**K. Transportation. The proposed project, as conditioned, is consistent with the applicable policies contained in the Transportation section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.150 (Transportation).**

The proposed project site would provide 119 parking spaces, including eight ADA compliant spaces and 24 electrical vehicle spaces. A total of 106 bicycle parking spots (consisting of long-term and short-term spaces) would also be provided. The project also entails the installation of internal pathways that would connect the proposed development internally as well as enhance connection with Commodore Webster Drive and downtown Pt. Reyes Station which is located 0.5 mile from the project site.

**L. Historical and Archaeological Resources. The proposed project, as conditioned, is consistent with the applicable policies contained in the Historical and Archaeological Resources section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.160 (Historical and Archaeological Resources).**

The Initial Study/Mitigated Negative Declaration prepared for the project contains an analysis of the potential effects to historical and archaeological resources resulting from the project. In October of 2023, an archeological study was completed for the project site. The study found one previously recorded cultural resource with the project area. Results of a pedestrian field study (conducted in September 2023) confirmed the presence of a previously recorded historic-period resource and a previously unrecorded historic-period resource. No pre-contact archaeological resources were observed within the project area during the field survey. While there are no known, intact precontact archeological resources in the project area, there is a potential for unidentified buried archeological resources to occur on site. In the event that archaeological resources are inadvertently uncovered during ground disturbing activities, the applicants will be required to comply with Marin County Code Section 22.20.040.E which imposes requirements including preservation and notification measures should archaeological resources be found. In addition, a condition of approval has been included below that requires the preparation of an Archaeological Monitoring Plan by an archaeologist and requires that an archaeologist be on site during ground disturbing activities that take place in native soils.

As discussed above, the on-site buildings were constructed in the 1970's and do not consist of pre-1930's era structures.

**M. Parks, Recreation, and Visitor-Serving Uses. The proposed project, as conditioned, is consistent with the applicable policies contained in the Parks, Recreation, and Visitor-Serving Uses section of the Marin County Land Use Plan and the applicable standards contained in Section 20.64.170 (Parks, Recreation, and Visitor-Serving Uses).**

The proposed project is purely residential and would not contain commercial components. Recreational opportunities would continue to be available on the site with the proposed project.

**11.** The project is consistent with the mandatory findings for Conditional Use Permit approval (Marin County Code Section 22.48.040).

A. **The proposed use is allowed, as a conditional use, within the subject zoning district and complies with all of the applicable provisions of this Chapter.**

The proposed use, affordable housing, is an allowable use pursuant to conditional use permit approval, as provided in Table 5-1-c of the County Coastal Zoning Code. The 54 proposed units would aid in providing much needed affordable housing opportunities in the County, particularly in coastal Marin.

B. **The design, location, size, and operating characteristics of the proposed use are compatible with the existing and future land uses in the vicinity.**

The project would entail the rehabilitation and renovation of existing structures for affordable housing on a site that historically housed members of the U.S. Coast Guard. As part of the rehabilitation effort, buildings would be renovated to meet current requirements, an on-site wastewater disposal system would be constructed, and extensive stormwater pollution and prevention improvements would be installed. The project would be accessed via existing roadways and driveways and would contain ample parking to service the project. Management of the residential uses would occur on site and three personnel would be associated with management activities. Typical days and hours of operation of the residential property management office would be 5 days a week, from 8:00am to 4:00pm. Four special events are proposed annually, likely between the hours of 12 pm and 6 pm on Saturdays and/or Sundays.

The affordable housing use would be compatible with neighboring residential uses directly west of the site and the project has been designed to comply with applicable requirements including those that protect sensitive resources.

C. **That granting the Conditional Use Permit will not be detrimental to the public interest, health, safety, convenience, or welfare of the County, or injurious to the property or improvements in the vicinity and zoning district in which the real property is located.**

As detailed above, the proposed project would comply with CWP and LCP requirements and has been designed to ensure that the use would not result in detrimental effects. Such design features include the installation of extensive bioretention improvements to capture and treat run off; an on-site wastewater treatment system that would replace the existing above ground sewage storage tank; and upgrades to existing structures to meet energy and building requirements. The use--affordable housing--would provide much needed housing opportunities in coastal Marin and would provide a public benefit to the County and its residents.

**SECTION II: ACTION**

NOW THEREFORE, BE IT RESOLVED that the project described in condition of approval 1 is authorized by the Marin County Deputy Zoning Administrator and is subject to the conditions of project approval.

This planning permit is an entitlement to apply for construction permits, not a guarantee that they can be obtained, and it does not establish any vested rights. This decision certifies the proposed project's conformance with the requirements of the Marin County Development Code and in no way affects the requirements of any other County, State, Federal, or local agency that regulates development. In addition to a Building Permit, additional permits and/or approvals may be required from the Department of Public Works, the appropriate Fire Protection Agency, the Environmental Health Services Division, water and sewer providers, Federal and State agencies.

**SECTION III: CONDITIONS OF PROJECT APPROVAL**

NOW, THEREFORE, BE IT RESOLVED that the Marin County Deputy Zoning Administrator hereby approves the County of Marin Coastal Development Permit and Conditional Use Permit subject to the conditions as specified below:

**CDA-Planning Division**

1. The applicants are granted Coastal Development Permit and Conditional Use Permit approval to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide 54 affordable housing units in Point Reyes Station.

   The authorized project shall consist of the following: (1) rehabilitate existing townhomes contained in 10, two-story buildings (Buildings 101 through 104, and 201 through 206) to provide 36 affordable housing units; (2) rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units; (3) rehabilitate "Building 100A" to provide 3 housing units; (4) renovate and expand an existing kitchen/galley building (Building 1) by 1,706 square feet and renovate Building 100C to provide a resident services building and community space for residents; (5) construct a new, on-site wastewater treatment system; (6) remove trees from a riparian area; (7) install stormwater pollution and prevention improvements including bioretention systems and retention areas; and (8) re-parcelize the one-lot site resulting in three lots consisting of the following: Parcel 2: 1.83 acres (79,713 square feet); Parcel A: 7.18 acres (312,602 square feet); Parcel B: 4.57 acres (199,221 square feet); and Parcel C: 20.04 acres (872,964 square feet).

   The residential property management office shall be staffed by an average of 3 employees. Typical days and hours of operation of the residential property management office shall be 5 days a week, from 8:00am to 4:00pm. Four annual special events are authorized, that shall occur between the hours of 12pm and 6pm on Saturdays and/or Sundays.

2. Plans submitted for a Building Permit shall substantially conform to plans identified as Exhibit A, entitled "Community Land Trust of West Marin & Eden Housing, Inc., Point Reyes Housing Renewal," consisting of 157 sheets prepared by Siegel and Strain Architects, Inc., received in final form on April 3, 2023, and on file with the Marin County Community Development Agency, except as modified by the conditions listed herein.

BEFORE ISSUANCE OF A BUILDING PERMIT, the applicants shall do the following:

a. Submit plans perfecting the lot parcelization in conformance with all details and specifications as required by the County Surveyor along with any required fees. Such plans shall indicate that proposed Parcels B and C shall contain no development and be preserved for conservation purposes.

b. Modify Leach Field to Avoid Protection Zone. Building permit plans submitted for the project shall show a modified leach field design to avoid application of treated wastewater within the Zone A Protection Zone of NMWD groundwater supply wells (Mitigation Measure HYDRO-1).

c. Avoid Equipment Staging and Storage in 100-Year Floodplain. Building plans submitted for the project shall not locate construction staging and storage areas in the 100-year floodplain (Mitigation Measure HYDRO-2).

d. Design of Wastewater System. The wastewater treatment system, including enclosures, shall be designed so that noise levels generated by the wastewater treatment system do not exceed 45 dB at the nearest residential property line adjacent the wastewater treatment system. A Noise Mitigation Plan, including the final wastewater treatment plan operational equipment noise levels, proposed enclosures, and any noise attenuation devices shall be submitted to the County at least 60 days prior to construction of the wastewater treatment system. The County may specify additional measures to reduce noise levels from the wastewater treatment system during the design review process (Mitigation Measure NOI-1).

e. Traffic Management Plan. Prior to initiation of construction, the Project contractor(s) shall use a qualified traffic engineer to prepare a Traffic Management Plan (TMP) in compliance with the California Manual on Uniform Traffic Control Devices. The TMP shall be incorporated into the contract documents and specifications. The TMP shall include, but not necessarily be limited to, the elements listed below:

The applicant shall incorporate the following recommendations of the geotechnical investigation into the final design:

- The construction contractor shall confirm with the West Marin Elementary School the typical start and dismissal times, school events, and irregular start and dismissal times prior to the start of construction.
- The construction contractor shall avoid hauling/truck traffic on Highway 1 in front of West Marin Elementary School within 1 hour prior to the start of school and 1 hour following dismissal or special event times or equivalent method to avoid traffic hazards at the elementary school as defined in the TMP.
- Installation of traffic-control devices where traffic conditions warrant, as specified in the applicable jurisdiction's standards (e.g., the California Manual on Uniform Traffic Control Devices Part 6: Temporary Traffic Control); use of flaggers, when warranted, to control vehicle movements.
- Implementation of a public information program to notify interested parties of the impending construction activities using means such as signs posted around the project site.
- Compliance with roadside safety protocols to reduce the risk of accidents.
- Maintenance of access for emergency vehicles at all times.

- Storage of all equipment and materials in designated contractor staging areas on or adjacent to the worksite in such a manner as to avoid obstruction to traffic including emergency vehicles (Mitigation Measure TRA-1).

f. The applicant shall incorporate the following recommendations of the geotechnical investigation into the final design:

- Site preparation and grading: In areas that will receive fill or improvements (i.e., pavement, foundations, or concrete flatwork), the soil subgrade would be scarified to a depth of at least 8 inches, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction. The upper eight inches of soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding.

- Utility trench backfill: All trenches would conform to the current CAL-OSHA requirements. Pipes and/or conduits would be bedded on a minimum of 4 inches of clean sand or fine gravel. After the pipes and/or conduits are tested, inspected (if required) and approved, all trenches would be covered to a depth of 6 inches with clean sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill and should be placed and compacted according to the recommendations previously presented.

- Exterior concrete flatwork: Exterior concrete flatwork that would not receive vehicular traffic (i.e. sidewalk) would be underlain by at least 4 inches of Class 2 aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.

- Spread footing: The existing buildings are assumed to be supported on spread footings bottomed in the existing fill; however, some footings may extend into the native soil. If new loads are imposed on the existing footings, test pits would be excavated to determine the depth and width of the footings.

- Proposed improvements may be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades. Continuous footings should be at least 16 inches wide, and isolated footings should be at least 18 inches wide.

- Concrete slab-on-grade floors: The subgrade for new slab-on-grade floors would be prepared in accordance with recommendations in Section 8.1 of the geotechnical investigation (Rockridge Geotechnical 2022). Where water vapor transmission through the new floor slab is not desirable, the project would install a capillary moisture break and water vapor retarder beneath the floor slab. A capillary moisture break consists of at least 4 inches of clean, freed raining gravel or crushed rock.

- Permanent retaining walls: Retaining walls would be designed to resist static lateral earth pressures, lateral pressures caused by earthquakes, and traffic loads (if vehicular traffic is expected within a horizontal distance equal to 1.5 times the wall height). All on-site walls, including low retaining walls in landscaped areas, would be designed in accordance with the recommendations presented in the geotechnical

investigation; however, checking the walls for seismic loading is not required for walls less than 6 feet high (Mitigation Measure GEO-1).

PRIOR TO SITE CLEARING OR GROUND DISTURBANCE ACTIVITIES:

a. Tree Removal Outside of Monarch Butterfly Roosting Season. Any removal of eucalyptus trees shall occur outside of the winter roosting season for monarch butterfly in Marin County (October through February). If the roosting season for monarch butterfly cannot be fully avoided, a pre-construction survey for active monarch butterfly roosts shall be conducted by a qualified biologist within three days prior to removal of eucalypt trees. If no active roosts are identified within the eucalyptus trees, the trees may be removed. If active roosts are identified within the eucalyptus trees, the trees cannot be removed until the roost has left the area as documented by a qualified biologist (Mitigation Measure BIO-1).

b. Worker Environmental Awareness Training. Submit written evidence that all contractor construction personnel have attended an environmental training program provided by a qualified biologist. The training shall discuss sensitive species and nesting bird habitat that may occur within the project area as well as identification of California red-legged frog and their burrows.

The training shall include the responsibilities of contractor's construction personnel, applicable mitigation measures, and notification requirements. The training shall also address other measures that protect biological resources.

The following information shall also be provided during the training:

- Specific information regarding the special-status species potentially present and their habitat needs;
- Any reports of occurrences in the project area;
- An explanation of the status of each listed species and their protection under state and federal laws; and
- A list of measures being taken to reduce effects to the species during construction and implementation.

Fact sheets conveying this information and an educational brochure containing color photographs of all special-status species potentially present shall be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. Construction personnel shall be instructed to halt construction activities and contact the designated biologist if a wildlife species is observed in an area where it could be harmed by construction activities. A list of employees who attend the training sessions shall be maintained on the site during construction and made available to USFWS upon request (Mitigation Measure BIO-2).

c. Install Exclusion Fencing: Provide evidence that temporary exclusion fencing has been installed around the limits of work areas to ensure special status animals (i.e., CRLF and western pond turtle) cannot enter the work area. Installation of exclusion fencing shall occur under the supervision of the designated biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance.

The exclusion fencing shall be installed in a manner that reduces the potential for trapping migrating wildlife and for wildlife climbing over the fence, such as having the top of the fencing curved over on the outside of the fence. Cover boards shall be installed along the perimeter of the fencing to provide protection from the sun and predators, where necessary and appropriate. Gates shall be installed in the exclusion fencing that allow project access and adequately exclude wildlife. Gates will be secured at the end of each workday using sandbags or other means to prevent wildlife from entering the exclusion zone. The exclusion fencing shall remain in place and be maintained for the duration of construction activities and shall be removed within 15 days of completion of construction activities.

Prior to construction personnel entering and beginning work in fenced areas each day, the fenced areas shall be inspected by a biological monitor for special status species or any trapped wildlife and to identify damage to the exclusion fencing. The biological monitor must be trained by the designated biologist (BIO-4) on California red-legged frog identification, the laws protecting the species, and procedures to implement if the species is observed. If California red-legged frogs or trapped wildlife are observed, the designated biologist shall be notified immediately to determine the appropriate procedures to implement. Any damage to the fencing shall be immediately reported and repaired until the last day that construction equipment is at the project site (Mitigation Measure BIO-3).

d. Designated Biologist. Provide evidence that USFWS approval for a designated biologist(s) for the project has been obtained. The designated biologist(s) shall be on site during all activities that may result in take of California red-legged frog. The qualifications of the designated biologist(s) shall be submitted to USFWS for review and written approval at least 30 calendar days prior to the date earthmoving is initiated at the project site. The designated biologist(s) shall keep a copy of any Biological Opinion issued for the project in their possession when on site.

The designated biologist(s) shall be given the authority to freely communicate verbally, by telephone, by electronic mail, or in writing at any time with construction personnel, any other person(s) at the project site or otherwise associated with the project, the USFWS, or their designated agents. The designated biologist shall have oversight over implementation of the avoidance and minimization measures and all permit conditions and shall have the authority and responsibility to stop project activities if they determine any of the associated permit requirements are not being fulfilled. If the designated

biologist(s) exercises this authority, the USFWS shall be notified by telephone and electronic mail within 24 hours (Mitigation Measures BIO-4 and BIO-5).

e. California Red-Legged Frog Preconstruction Survey. No more than 24 hours prior to the date of initial ground disturbance, a pre-construction survey for California red-legged frog shall be conducted by a designated biologist at the project site. The survey shall consist of walking the project limits and within the project site to ascertain the possible presence of California red-legged frog. The designated biologist shall investigate all potential areas that could be used by the species for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as for California ground squirrels or gophers (Mitigation Measure BIO-7).

f. Timing Construction Commencement to Avoid California Red-Legged Frog. Initial ground-disturbing activities shall be avoided between November 1 and March 31 to avoid the time period when California red-legged frogs are most likely to be moving through the project area (Mitigation Measure BIO-8).

g. Avoidance of Nesting Birds. All tree removal activities shall be avoided between February 1 and August 15 to avoid the time period when birds are most likely to be nesting, to the extent feasible. Prior to any construction activities during the bird nesting season (February 1 to August 15), a pre-activity nesting bird survey shall be conducted no more than 7 days prior to tree removal and start of construction activities. The survey shall include all areas within 500 feet of active construction. If active nests of special status or migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and is based on the nest location, topography, cover, and species' tolerance to disturbance. A standard buffer of 500 feet shall be used for raptors and special-status birds and 200 feet for migratory birds. If the standard avoidance buffer is not achievable, a reduced buffer may be allowed under the direction of a qualified biologist and the qualified biologist will monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in any nest disturbance, work should cease immediately in the vicinity of the nest and will not be allowed to recommence in the area until the young have fledged the nest.

If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by the qualified biologist, would be necessary (Mitigation Measure BIO014).

h. American Badger Protection. Prior to ground-disturbing activities, a qualified biologist shall conduct a pre-construction survey of the project area to determine if new badger burrows have been constructed and/or if older (remnant) burrows appear to be re-occupied. These surveys will be conducted no less than 14 days and no more than 30 days prior to the start of ground disturbing activities. If burrows are occupied, the biologist will establish a 100-foot avoidance buffer around occupied maternity dens throughout the pup-rearing season (February 15 through July 1) and a 50-foot avoidance buffer around occupied dens during other times of the year (Mitigation Measure BIO-15).

i. Archaeological Monitoring Plan (AMP) and Archaeological Monitoring. A Secretary of Interior-qualified archaeologist shall prepare an Archaeological Monitoring Plan (AMP) that includes a provision for worker Cultural Resources Awareness Training (CRAT) as well as details regarding the archaeological sensitivity of the project area, the types of archaeological resources that could be encountered, the methodology and protocols to be employed during monitoring, and specific procedures to identify, evaluate, and treat new archaeological discoveries and for addressing specific contingencies, such as the discovery of human remains, project personnel qualifications, data collection protocols, site safety considerations, and post-field actions. The archaeologist preparing the AMP shall contact the Federated Indians of Graton Rancheria (FIGR) and provide them an opportunity to review and comment on the AMP prior to its finalization.

A professional archeologist shall provide sensitivity training to supervisory staff prior to initiation of site preparation and/or construction to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of precontact or historic-period objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and procedures for protection and notification. An "alert sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic-period and/or precontact archaeological resources.

A qualified archaeologist shall monitor all ground-disturbing activities that take place within native (i.e., non-fill) soils. If an archaeological deposit is encountered during ground-disturbing activities, all work within 50 feet of the discovery shall be halted until a Secretary of Interior qualified archaeologist and FIGR (in the case of precontact-period resources) inspects the material, assesses its historical significance, and provides recommendations for the treatment of the discovery in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 68). Potentially significant historic-era resources may include all by-products of human land use greater than 50 years of age, including subsurface deposits of domestic type material (e.g., glass, ceramic, metal, wood, faunal remains, brick), buried alignments of stone, brick, or foundation elements, and possible features associated with the former railroad, open workspaces, or yard spaces. Potentially significant precontact period resources include midden soils, artifacts such as faunal bone, groundstone, fire-affected rock, baked clay, modified bone and/or shell, flake stone debitage, flake stone tools, etc., and features such as house floors, cooking pits, deliberately interred burials. If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and

can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA) or
- A unique archaeological resource as defined by CEQA.

If the resource meets the criteria for eligibility on the CHRH or is a unique archaeological resource, work shall remain halted, and the cultural resources specialist/archaeologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines section 15064.5(b).

Avoidance of the area, or avoidance of impacts to the resource, is the preferred method of mitigation for impacts to cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with the AMP. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System.

Work may commence within the vicinity of the discovery upon completion of evaluation, collection, recordation, and analysis as approved by the qualified archeologist (Mitigation Measure CUL-1).

DURING CLEARING AND SITE DITURBANCE ACTIVITIES

a. On-site Construction Monitoring. The designated biologist shall be present at the project site until all initial habitat disturbances have been completed. After habitat disturbance has been completed and all exclusion fencing has been installed, a biological monitor, who will be trained by the designated biologist, shall monitor daily on-site compliance with all avoidance and minimization measures (AMMs) defined in the U.S. Fish and Wildlife Service Biological Opinion. The biological monitor shall contact the designated biologist for instructions should any CRLF be observed on the site. The biological monitor and the designated biologist shall have the authority to halt any action that could adversely affect sensitive biological resources. The designated biologist shall continue to conduct compliance checks at least once per week until construction is completed to ensure that the fencing is intact and that all AMMs are being implemented(Mitigation Measure BIO-6).

b. Avoid Construction During Rain Events. No ground-disturbing construction activities shall occur during rain events or within 24 hours following a rain event. Prior to ground-disturbing construction activities resuming, a designated biologist shall inspect the project area and all equipment/materials for the presence of California red-legged frogs Mitigation Measure BIO-8).

DURING CONSTRUCTION ACTIVITIES

a. Cover Trenches. Trenches or pits 1 foot or deeper that are going to be left unfilled overnight shall be securely covered with boards or other material to prevent California

red-legged frog or other special-status species from falling into them. If covering of trenches or pits is not feasible, wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are to be placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter shall be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog or other special-status species. The biological monitor shall inspect the trenches, pits, or holes prior to their being filled to ensure there are no trapped wildlife in them. The trench, pit, or hole shall also be examined by the biological monitor each workday morning prior to initiation of work and in the late afternoon no more than 1 hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the biological monitor shall contact the designated biologist, who shall remove and transport the animal to a safe location or contact the USFWS for guidance (Mitigation Measure BIO-10).

b. Erosion Control Material. Plastic monofilament netting (i.e., erosion control matting), loosely woven netting, or similar material in any form shall not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site shall be immediately removed by the designated biologist or construction personnel. Materials utilizing fixed weaves (i.e., strands cannot move), polypropylene, polymer, or other synthetic materials shall not be used (Mitigation Measure BIO-11).

c. Waste Management. Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the California red-legged frog and other wildlife. A litter control program shall be instituted at the project site. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the project site at the end of each working day (Mitigation Measure BIO-12).

d. Procedures for Encounters with California Red-Legged Frog. Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below.

When a California red-legged frog is encountered in the project area, all activities that have the potential to result in the harassment, injury, or death of the individual shall be immediately halted. The designated biologist will then assess the situation in order to select a course of action that shall avoid or minimize adverse effects to the animal. Contact with the animal shall be avoided and the applicant shall allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location and is actively dispersing. It does not apply to animals that are uncovered or otherwise exposed or in areas where the individual is not expected to move on its own and may be in danger (e.g., within the fenced construction perimeter).

California red-legged frogs that are in danger (e.g., animals that are uncovered or otherwise exposed or in areas within the fences construction perimeter where the individual is not expected to move on its own) shall be relocated and released by the designated biologist outside the construction area within the same habitat. Prior to the initial ground disturbance, the designated biologist shall obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is encountered and needs to be moved away from the project site. California red-legged frog shall be released in appropriate habitat nearby on the watershed. The designated biologist shall limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. The applicant shall immediately notify the USFWS once the California red-legged frog is relocated and the site is secure (Mitigation Measure BIO-13).

e. Demolition activities shall comply with the OSHA Standard 1926.6 related to lead abatement, and all other applicable State and federal requirements for the safe handling and disposal of lead-based paint, ACM, and universal wastes. The project contractor shall implement the following measures.

***Lead-based Paint***

As lead was identified in the paints and a detailed inventory of paints was not performed for the entire project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of any detected levels of lead.

None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the Contractor on the entire waste stream for verification.

Conventional demolition techniques shall be employed for all painted surfaces, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:

- Worker awareness training
- Exposure monitoring, as needed
- Medical examinations, which may include blood lead level testing
- Establishing a written respiratory protection program

***Asbestos-containing Materials (ACM)***

Any suspect material not sampled or not visually identified as negative by the Environmental Compliance Due Diligence Activities Report prepared by Tetra Tech in 2016 shall be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified

Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials shall be assumed to contain asbestos and disposed of in accordance with OSHA Standard 1926.6 (Mitigation Measure HAZ-1).

ONGOING MONITORING RESPONSIBILITIES

a. Groundwater Monitoring. A Groundwater Monitoring and Mitigation Plan (GMMP) shall be prepared for the project by a qualified hydrologist or hydrogeologist. The groundwater quality monitoring program must comply with monitoring and reporting requirements issued by the Regional Water Quality Control Board. The GMMP shall include specifics on the procedures and timing for groundwater monitoring and reporting as well as action criteria and responses to action criteria. At a minimum, the GMMP shall include:

- Quarterly groundwater sampling and water quality monitoring between the irrigated areas and NMWD wells using the existing wells CG-2 and CG-3 and two additional monitoring wells
- Quarterly reporting to RWQCB, NMWD, and the County with the results of the monitoring program
- Performance criteria:

  i. The water quality within the groundwater monitoring wells between the area of application and NMWD drinking water wells shall not exceed 10 mg/L of nitrate (NO3) . Nitrate is used as an indicator of the treated wastewater given that the background levels of nitrate are less than the treatment standard for the wastewater system.

Corrective actions: If the intervening groundwater well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected. Additional corrective actions including but not limited to, repairs or replacement of equipment, additional monitoring, or other actions, will be defined as appropriate depending on the exceedance detected and potential causes of the exceedance.

Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days documenting the violation and corrective actions taken to address the violation (Mitigation Measure HYDRO-1).

b. Effluent Monitoring. Monitoring of the effluent from the wastewater treatment system shall be completed per the Regional Water Quality Control Board issued Monitoring and Reporting Program included in the Notice of Applicability for enrollment in the 2014 WDR General Order. The Notice of Applicability must be issued prior to recycled water production and use. Constituents that would be monitored and reported on are listed in the table below.

Should the effluent exceed the UV transmittance threshold specified in the National Water Research Institute Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, turbidity threshold of 10 NTU at any time,, or other standard specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the treated wastewater shall not be applied within any area within the NMWD Zone A Protection Zone, including any

portion of the leach field located in the Zone A Protection Zone. No application of effluent shall be allowed within the Zone A Protection Zone until the treatment system is repaired and the effluent quality is demonstrated to meet the water quality objectives. During periods when the effluent is not meeting water quality standards specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the effluent shall be stored in a tank and transferred to a wastewater treatment facility, if needed while maintenance is conducted on the wastewater treatment system. Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days documenting the violation and corrective actions taken to address the violation (Mitigation Measure HYDRO-1).

**3.** The project shall conform to the Planning Division's "Uniformly Applied Conditions 2024" with respect to all of the standard conditions of approval and the following special conditions: Special Condition 3 (exterior lighting); and Special Condition 10 (other regulatory approvals).

**SECTION IV: VESTING**

NOW THEREFORE, BE IT RESOLVED that unless conditions of approval establish a different time limit or an extension to vest has been granted, any permit or entitlement not vested within two years of the date of the approval shall expire and become void. The permit shall not be deemed vested until the permit holder has actually obtained any required Building Permit or other construction permit and has substantially completed improvements in accordance with the approved permits, or has actually commenced the allowed use on the subject property, in compliance with the conditions of approval.

**SECTION V: APPEAL RIGHTS**

NOW, THEREFORE, BE IT RESOLVED that this decision is final unless appealed to the Marin County Planning Commission. A Petition for Appeal and the required fee must be submitted in the Community Development Agency, Planning Division, Room 308, Civic Center, San Rafael, no later than 10 business days from the date of this decision. This Coastal Development Permit is appealable to the California Coastal Commission pursuant to Marin County Coastal Zoning Code Section 20.70.080(B)(1).

**SECTION VI: ADOPTION**

ADOPTED at a regular meeting of the Deputy Zoning Administrator of the County of Marin, State of California, on the 29th day of August 2024.

Immanuel B Ereket

IMMANUEL BEREKET
MARIN COUNTY DEPUTY ZONING ADMINISTRATOR

Attest:

Michelle Reed

MICHELLE REED
DZA Recording Secretary



County of Marin Community Development Agency

# Point Reyes Station USCG Coastal Permit and Conditional Use Permit

# Draft Initial Study/Mitigated Negative Declaration

April 2024

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San Francisco, CA 94103
650-373-1200
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PANORAMA ENVIRONMENTAL, INC.

County of Marin Community Development Agency

# Point Reyes Station USCG Coastal Permit and Conditional Use Permit

# Draft Initial Study/Mitigated Negative Declaration

**April 2024**


**Prepared for:**

County of Marin

3501 Civic Center Drive, Suite 308

San Rafael, CA 949093

**Prepared by:**

Panorama Environmental, Inc.

717 Market Street, Suite 400

San Francisco, CA 94103



www.panoramaenv.com


PANORAMA ENVIRONMENTAL, INC.

# MITIGATED NEGATIVE DECLARATION

Marin County

Environmental Coordination and Review

Pursuant to Section 21000 et. seq. of the Public Resources Code and Marin County Environmental Impact Review Guidelines and Procedures, a Negative Declaration is hereby granted for the following project.

1. Project Name: Pt. Reyes Station U.S. Coast Guard Site Coastal Permit and Conditional Use Permit Affordable Housing Project

2. Location and Description: 100 Commodore Webster Dr., Point Reyes Station

   The project entails adaptively reusing and repurposing the former United States Coast Guard (USCG) developed housing and operations site to provide affordable housing units in Point Reyes Station. The proposed project would rehabilitate existing buildings onsite and provide 54 affordable housing units along with associated residential structures and facilities.

3. Project Sponsor: Community Land Trust Association of West Marin and Eden Housing, Inc.

4. Finding:

   Based on the attached Initial Study and without a public hearing, it is my judgment that:

   ☐ The project will not have a significant effect on the environment.

   ☒ The significant effects of the project noted in the Initial Study attached have been mitigated by modifications to the project so that the potential adverse effects are reduced to a point where no significant effects would occur.

Rachel Reid _____ Date: April 18, 2024

Environmental Planning Manager

Based on the attached Initial Study, a Mitigated Negative Declaration is granted.

[X] Board of Supervisors or other County decision maker(s)

See approval resolution following project approval on August 29, 2024

1. Mitigation Measures:

   ☐ No potential adverse impacts were identified, therefore, no mitigation measures are required.

   ☒ Please refer to mitigation measures in the attached Initial Study.

   All of the mitigation measures for the above effects have been incorporated into the project and are embodied in conditions of approval recommended by the Marin County Community Development Agency- Planning Division.

Other conditions of approval in support of these measures may also be advanced.

2. Preparation:

   This Negative Declaration was prepared by Panorama Environmental, Inc. on behalf of the Marin County Community Development Agency - Planning Division. Copies may be obtained at the address listed below.

   Marin County Community Development Agency
   Planning Division
   3501 Civic Center Drive, Suite 308
   San Rafael, CA 94903
   (415) 473-6269
   Check with the Planning Department for information about business hours and/or reviewing copies of the document at the front counter.

   An electronic version is also available for review on the County of Marin Environmental Planning website.

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**Appendix H Basis of Design Report**
**Appendix I Mitigation Monitoring and Reporting Plan**

# Acronyms and Abbreviations

| | |
|---|---|
| ACM | asbestos-containing material |
| Air District | Bay Area Air Quality Management District |
| AMP | Archaeological Monitoring Plan |
| APE | area of potential effect |
| AST | aboveground storage tank |
| BASMAA | Bay Area Stormwater Management Agencies Association |
| BERD | Built Environment Resource Directory |
| BESS | battery energy storage system |
| bgs | below ground surface |
| BMPs | best management practices |
| BOD | basis of design |
| CAA | Clean Air Act |
| CAAQS | California Ambient Air Quality Standards |
| CAC | Certified Asbestos Consultant |
| CalEEMod | California Emissions Estimator Model |
| California Register | California Register of Historical Resources |
| CARB | California Air Resources Board |
| CBC | California Building Code |
| CBC | California Building Code |
| CCAA | California Clean Air Act |
| CEQA | California Environmental Quality Act |

## ACRONMYS AND ABBREVIATIONS

| | |
|---|---|
| CERCLA Act | Comprehensive Environmental Response, Compensation, and Liability |
| CFC | California Fire Code |
| CFR | Code of Federal Regulations |
| CLAM | Community Land Trust Association of West Marin |
| CRAT | Cultural Resources Awareness Training |
| CRLF | California red-legged frog |
| CSST | Certified Site Surveillance Technician |
| CUPA | Certified Unified Program Agency |
| DTSC | California Department of Toxic Substances Control |
| EOC | Emergency Operations Center |
| EOP | Emergency Operations Plan |
| ESA | Environmental Site Assessment |
| ESHA | environmentally sensitive habitat area |
| EV | electric vehicle |
| FIGR | Federated Indians of Graton Rancheria |
| GHGs | greenhouse gases |
| GMMP | Groundwater Monitoring and Mitigation Plan |
| gpd | gallons per day |
| HCP | Habitat Conservation Plan |
| IS/MND | initial study/mitigated negative declaration |
| LBP | lead-based paint |
| LCP | Local Coastal Program |
| LOS | level of service |
| MCM LHM | Marin County Multi-jurisdictional Local Hazard Mitigation Plan |
| MCOSD | Marin County Open Space District |

## ACRONMYS AND ABBREVIATIONS

| | |
|---|---|
| MM | mitigation measure |
| NAHC | Native American Heritage Commission |
| NCCP | Natural Community Conservation Plans |
| NFIP | National Flood Insurance Program |
| NMWD | North Marin Water District |
| NPDES | National Pollutant Discharge Elimination System |
| OA | Operational Area |
| OHP | Office of Historic Preservation |
| OSHA | Occupational Safety and Health Administration |
| PG&E | Pacific Gas and Electric |
| PPV | peak particle velocity |
| PRC | Public Resources Code |
| PV | photovoltaic |
| Qpa | Pleistocene age alluvium |
| Qt | marine terrace |
| R-value | resistance value |
| RCRA | Resource Conservation and Recovery Act |
| REC | recognized environmental condition |
| SAR | soil application rate |
| SDE | Sherwood Design Engineers |
| SRA | State Responsibility Area |
| SWPPP | Stormwater Pollution Prevention Plan |
| TCRs | tribal cultural resources |
| TMDL | total maximum daily load |
| TMP | Traffic Management Plan |
| USCG | United States Coast Guard |

| | |
|---|---|
| USEPA | U.S. Environmental Protection Agency |
| UST | underground storage tanks |
| VMT | vehicle miles traveled |

# 1 Introduction

## 1.1 Purpose and Use of Initial Study

The Marin County (County) Planning Division of the Community Development Agency has prepared this initial study/mitigated negative declaration (IS/MND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Coastal Permit and Conditional Use Permit to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. This document was prepared pursuant to the requirements of the California Environmental Quality Act (CEQA) of 1970 (as amended), the CEQA Guidelines (14 California Code of Regulations [CCR] §§ 15000 et seq.), and the Marin County Environmental Impact Review Guidelines (County of Marin 1994).

This IS/MND has been prepared in accordance with CEQA. The County of Marin is the lead agency under CEQA and will consider the project's environmental impacts when considering whether to approve the project. This IS/MND is an informational document to be used in the planning and decision-making process for the project and does not recommend approval or denial of the project.

## 1.2 Public Review Process

Public disclosure and dialogue are priorities under CEQA. State CEQA Guidelines sections 15073 and 15105(b) require that the lead agency designate a period during the CEQA process when the public and other agencies can provide comments on the potential impacts of the project. Accordingly, the County is circulating this document for a 30-day public and agency review period.

The Draft IS/MND is available for review at the following locations:

- Marin County Community Development Agency Office (3501 Civic Center Drive, Room 308, San Rafael, California 94903)
- Point Reyes Station Library (11435 CA-1, Point Reyes Station, California 94956)

The Draft IS/MND is also available for review on the County's website under "Current CEQA Projects":

https://www.marincounty.org/depts/cd/divisions/environmental-planning/current-ceqa

All comments submitted in writing and/or by email should be received and postmarked before the date identified for closure of the public comment period in the Notice of Availability.

Comments on the Draft IS/MND should be submitted to the following contact:

Rachel Reid
Environmental Coordinator
Marin County Planning Division
3501 Civic Center Drive
San Rafael, CA 94903
Email: EnvPlanning@marincounty.org

## 1.3 Organization of the Document

This IS/MND contains the following components:

- Chapter 1, Introduction, provides a brief description of the intent and scope of the IS/MND, the public involvement process under CEQA, and the organization the IS/MND.
- Chapter 2, Project Description, describes the project, its location and site conditions, proposed facilities including housing and non-housing elements, project construction methods, operational requirements, and required permits and approvals.
- Chapter 3, Environmental Checklist, presents the checklist used to assess the project's potential environmental effects consistent with Appendix G of CEQA Guidelines. Chapter 3 also includes a brief description of the environmental setting for most resource topics and describes the project's anticipated environmental impacts as well as any mitigation measures (MMs) that would be required to reduce significant impacts to a less-than-significant level.
- Chapter 4, Report Preparers, provides a list of individuals who were involved in preparing the IS/MND.
- Chapter 5, References, provides a bibliography of printed references, websites, and personal communications used in preparing this IS/MND.

# 2 Project Description

## 2.1 Overview

The Community Land Trust Association of West Marin (CLAM) and Eden Housing, Inc. (Eden), referred to jointly as Applicant, have filed an application with Marin County for a Coastal Permit and Conditional Use Permit to adaptively reuse and repurpose the former USCG site to provide affordable housing units in Point Reyes Station. The proposed project would:

1. Rehabilitate existing townhomes contained in 10 two-story buildings (Buildings 101, 102, 103, 104, 201, 202, 203, 204, 205, 206) to provide 36 affordable housing units;
2. Rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units;
3. Rehabilitate "Building 100A" to provide three affordable housing units;
4. Demolish existing storage building (Building 100B) and replace with landscaping and a patio area;
5. Repurpose existing mechanical shop and maintenance area (Building 100C) as a workshop and storage area;
6. Renovate and expand an existing kitchen/galley building (Building 1) to provide a resident services building including community space for the development;
7. Construct a new on-site wastewater treatment system;
8. Remove non-residential structures and provide bioretention facilities in environmentally sensitive habitat areas (ESHA)
9. Remove trees from a riparian area; and
10. Reconstruct an existing playground.

The project would result in re-parcelization of the existing lot to create additional lots within the project site to enable long-term management of the property. Marin County is the lead agency responsible for compliance with CEQA.

## 2.2 Project Location and Site Conditions

### 2.2.1 Project Location

The project site is located at 100 Commodore Webster Drive in the Point Reyes Station community within unincorporated Marin County (as shown in Figure 2.2-1). The project site consists of 33.59 acres and comprises one legal lot containing two assessor parcels (APNs: 119-240-73 and 119-236-10) at the eastern limits of Point Reyes Station. The project site is bounded by the Point Reyes Affordable Homes complex to the west, an undeveloped lot to

**Figure 2.2-1 Project Location**




*Source: (Bay Area Open Space Council 2011a; 2011b; 2011c; USGS 2012; ESRI 2011; California Protected Areas Database 2023; ESRI 2011)*

the north, and Lagunitas Creek to the east and south. The property is currently owned by the County of Marin.

### 2.2.2 Existing Site Facilities

The project site was developed by the USCG in 1974 for use as USCG housing and support services. The project site is currently developed with 11 residential buildings, containing 36 townhome units and 21 congregate residential rooms and 6 non-residential structures. The existing residential buildings have not been occupied since the County of Marin purchased the property in 2019. The project site also contains recreational facilities including a playground area, tennis court, basketball court, and aboveground pool and spa. The North Marin Water District (NMWD) maintains two existing potable water wells and an associated treatment facility on the project site. The project site contains belowground tanks for limited onsite sewage collection and storage. Since the site transferred ownership from the USCG to Marin County, the site has been used by local fire departments for training and wildfire emergency staging and some of the office space is being temporarily used by the County Parks Department.

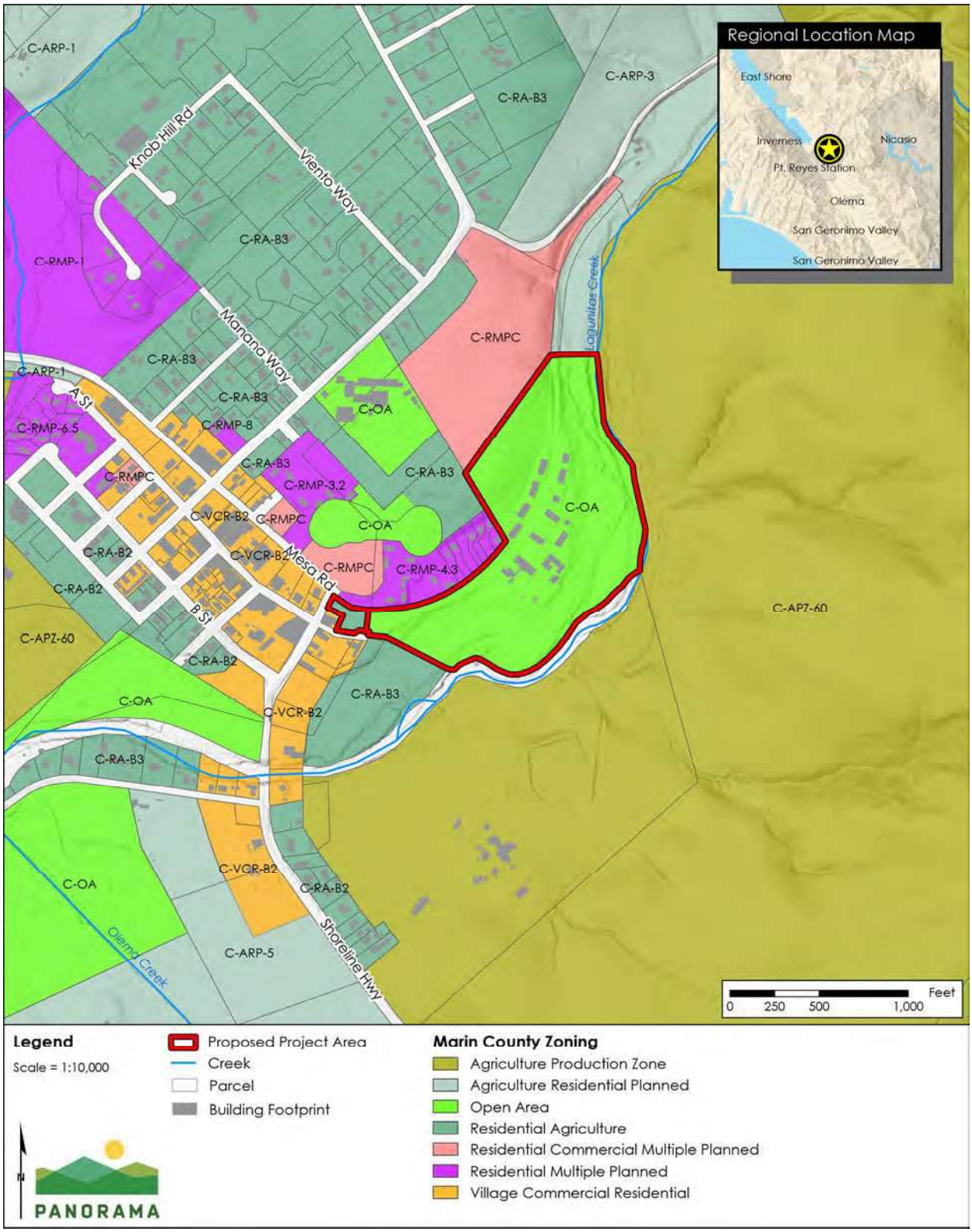
### 2.2.3 Land Use Designations

The project site is located within the Coastal Zone and subject to the Marin County Local Coastal Program (LCP). The purpose of the LCP is to carry out the coastal resource protection policies of the California Coastal Act of 1976. The LCP is the primary document that governs land development in the Marin County Coastal Zone. A majority of the project site is designated as C-OA-Coastal, Open Area, in the Marin Countywide Plan with a corresponding zoning designation of C-OS-Coastal, Open Space. A small portion at the western edge of the project site is designated Coastal Single Family with a corresponding zoning designation of C-RA-B3-Coastal, Residential, Agriculture. Site zoning designations are shown in Figure 2.2-2.

### 2.2.4 Environmentally Sensitive Habitat Areas and Buffers

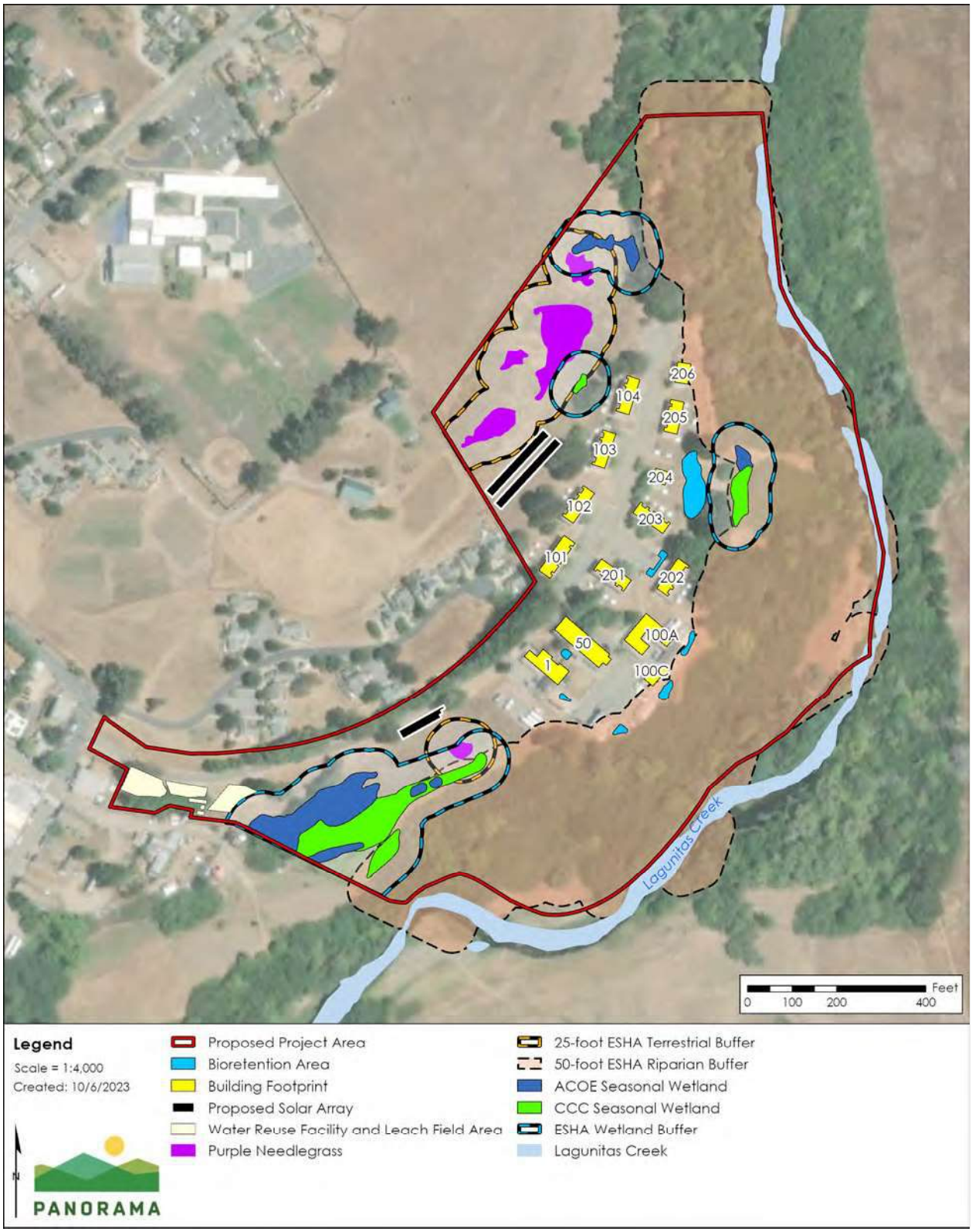
Environmentally Sensitive Habitat Areas (ESHA) are designated in the LCP as areas that contain habitats that are either rare or especially valuable because of their special nature or role in an ecosystem and that could be easily disturbed or degraded by human activities and developments (Marin County Community Development Agency 2019). The project site contains purple needlegrass grassland, which is considered terrestrial ESHA. The LCP requires a 50-foot buffer for terrestrial ESHA to prevent impacts that would significantly degrade those areas. The project site also contains two aquatic ESHAs including coastal stream and riparian vegetation ESHA and seasonal wetland ESHA. The LCP requires a 50-foot buffer from the edge of riparian vegetation associated with a coastal stream (Lagunitas Creek) and a 100-foot buffer from the periphery of seasonal wetlands. A reduced 50-foot ESHA buffer is applied to the project to protect the CCC seasonal wetland because the project area contains existing structures and uses within the 100-foot CCC seasonal wetland ESHA buffer, therefore work cannot be avoided in the 100-foot buffer area. Activities within the 100-foot CCC seasonal wetland buffer include removal of nonconforming structures and would provide a net environmental benefit. ESHA areas and buffers within the project site as well as three existing structures within the ESHA buffer are shown in Figure 2.2-3.

**Figure 2.2-2 Project Site Zoning Designations**




*Source: (USGS 2012; Marin Map and VarGIS 2023; Marin County Community Development Agency 2023)*

**Figure 2.2-3 ESHA and ESHA Buffer Areas**




*Source: (Maxar 2021; Siegal & Strain Architects 2023)*

### 2.2.5 FEMA Floodway

A portion of the project site west of Lagunitas Creek is located within the floodway, as detailed in maps created under the National Flood Insurance Program (NFIP). The existing and proposed habitable structures are located outside of the mapped floodway as amended by FEMA on May 5, 2023, in the Letter of Map Amendment (Appendix A). The current floodway boundary (as amended by FEMA) is shown in Figure 2.3-1.

## 2.3 Project Facilities

### 2.3.1 Buildings/Structures

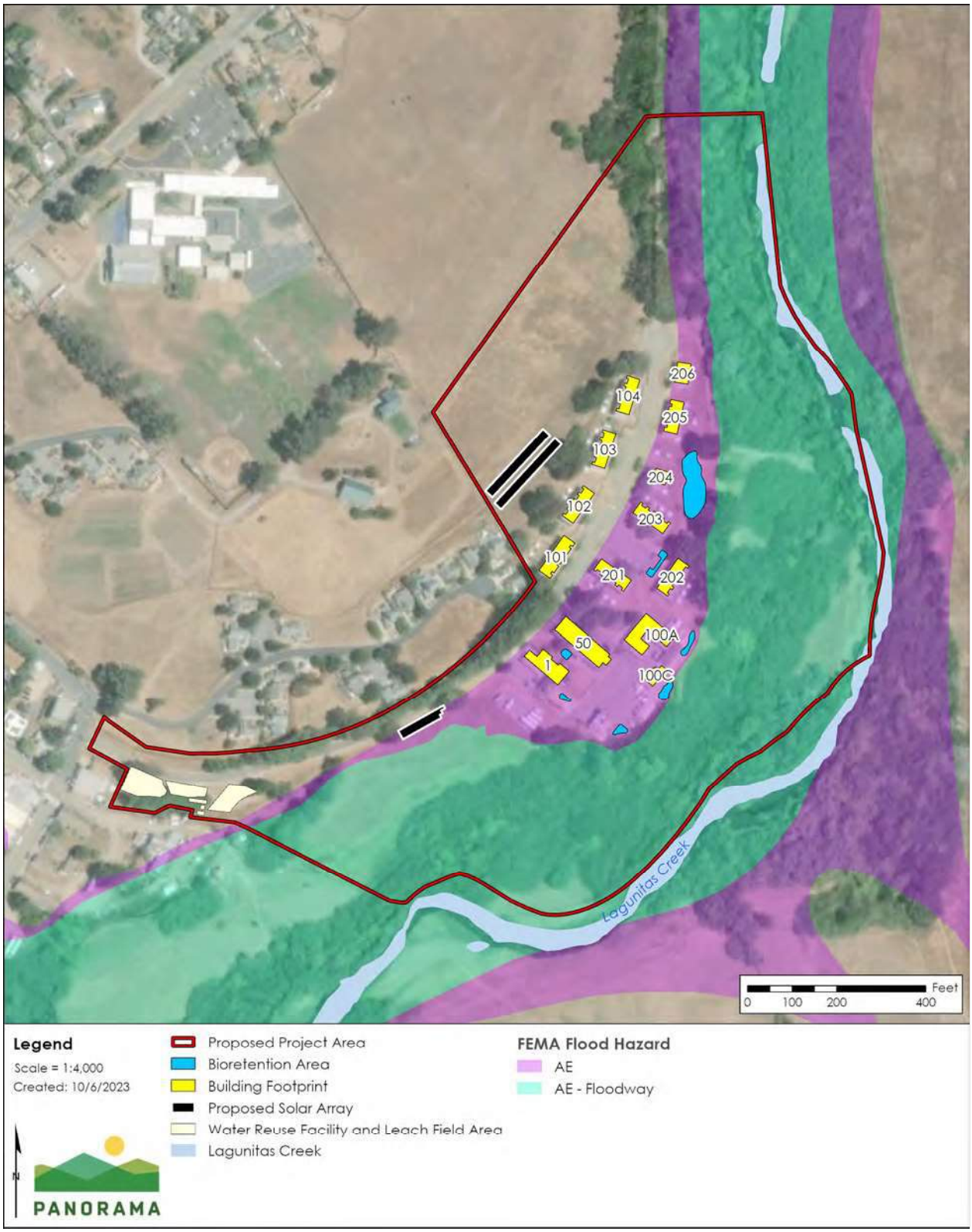
#### Residential Units

The Applicant proposes to rehabilitate the existing townhomes (Buildings 101, 102, 103, 104, 201, 202, 203, 204, 205, 206), dormitory building (Building 50), and administrative building (Building 100A) for affordable housing. The Project would consist of 54 housing units within the 12 existing buildings. No new housing buildings/structures would be constructed. The residential units that would be housed within each building are summarized in Table 2.3-1, below, and the location of each building is shown in Figure 2.3-1.

**Table 2.3-1 Existing and Proposed Residential Buildings and Units**

| Existing building | Unit type | Proposed number of units | Bldg. sq. ft (existing) | Bldg. sq. ft. (proposed) | Each unit sq. ft. (proposed) |
|---|---|---|---|---|---|
| Building 101 | 4-bedroom | 4 | 5,689 | 5,775 | 1,444 |
| Building 102 | 3-bedroom | 4 | 4,756 | 4,836 | 1,209 |
| Building 103 | 3-bedroom | 4 | 4,756 | 4,836 | 1,209 |
| Building 104 | 3-bedroom | 4 | 4,756 | 4,836 | 1,209 |
| Building 201 | 3-bedroom | 4 | 4,756 | 4,836 | 1,209 |
| Building 202 | 3-bedroom | 4 | 4,756 | 5,072 | 1,268 |
| Building 203 | 3-bedroom | 4 | 4,756 | 4,836 | 1,209 |
| Building 204 | 2-bedroom | 2 | 1,808 | 1,854 | 927 |
| Building 205 | 4-bedroom | 3 | 4,284 | 4,354 | 1,451 |
| Building 206 | 2-bedroom | 3 | 2,750 | 2,808 | 936 |
| Building 100A | 3-bedroom | 3 | 4,139 | 3,512 | 1137 to 1242 |
| Building 50 | 1-bedroom | 15 | 9,386 | 10,246 | 675 |
| **Total** | **All** | **54** | **56,592** | **57,801** | |

**Figure 2.3-1 FEMA Floodway**




*Source: (Maxar 2021; Siegal & Strain Architects 2023; FEMA, n.d.)*

### Non-Residential Units

Three non-residential buildings currently occur on the site. One of the non-residential buildings would be demolished (Building 100B), and two non-residential buildings (Building 1 and Building 100C) would be repurposed to provide a property management and resident services office and community space for residents of the project. Details for demolition or reuse of each non-residential building are summarized in Table 2.3-2. Building 1 would include offices for property management, resident services, and property maintenance facilities. The building will also include an approximately 1,000-square-foot community room to accommodate resident parties, meetings, classes, workshops, and occasional community events.

**Table 2.3-2 Existing and Proposed Non-residential Buildings**

| Building | Bldg. sq. ft. (existing) | Bldg. sq. ft. (proposed) | Description |
|---|---|---|---|
| Building 100B | 1,126 | 0 | Demolish existing storage building and replace with landscaping and patio area. |
| Building 100C | 1,158 | 1,123 | Repurpose existing mechanical shop and maintenance area as a workshop and storage area. |
| Building 1 | 1,822 | 3,528 | Convert existing kitchen and dining hall to community room, property management and resident services office. |
| **Total** | **4,106** | **4,651** | |

A small kitchenette, storage room, and restrooms would be located adjacent the community room. In addition, a 300-square-foot library/computer room would be available to residents. Building 1 could serve as a neighborhood-level resilience center to provide shelter and resources during extreme weather events and other emergencies.

### Accessory Structures

A shed, covered patio, pergola, pool, spa, and tennis court, currently occur on the site. The shed, covered patio, pool, spa, and tennis court would be demolished, and the pergola would remain. The project would result in a net removal of impervious surfaces due to removal of accessory structures in proximity to the riparian corridor.

## 2.3.2 Site Circulation and Parking

Access to the project site would be provided by Mesa Road, immediately east of the intersection of Mesa Road and State Highway 1. Internal vehicular circulation is provided by Commodore Webster Drive, an asphalt-paved, two-lane private road that terminates at the southeastern end of the project site.

The project would provide 119 parking spaces, including eight ADA-compliance spaces and 24 electric vehicle spaces. Parking for the townhomes would be provided in front of each townhome (Buildings 101 to 206) along Commodore Webster Drive. Parking for Building 50

and 100A would be provided in a common parking lot adjacent the buildings. Parking for property management and resident services in Building 1 and for the workshop in 100C would also be provided in a common parking lot adjacent to those buildings. The number of parking spaces and parking stall dimensions have been designed to meet parking requirements provided in Marin County Municipal Code Section 24.04.340-A. Driveways and access points would comply with all County fire safety standards to maximize entry and egress space for emergency vehicles. Parking for the project would be provided on existing impervious areas.

Both long-term and short-term bicycle parking would be provided on-site. A total of 62 long-term and 44 short-term bicycle parking spots will be provided. Most of the long-term bike parking would be provided by storage sheds available to each unit while short-term parking would be provided by bike racks throughout the project site.

### 2.3.3 Utilities and Public Service

#### Wastewater Treatment Facility

Sewer service is not available in the project area. The project site currently contains belowground tanks for limited on-site sewage collection and storage only. When the property was used for USCG housing, wastewater was collected and transported to an offsite facility for disposal on a daily basis.

The project would be served by a newly constructed wastewater treatment facility, subsurface drip irrigation system, and leach field. The wastewater treatment system would be located on the southwest edge of the project site, near the entrance on Commodore Webster Drive. The wastewater treatment system would consist of a Membrane Aerated Biofilm Reactor, which would be housed in a combination of underground tanks, aboveground container, treatment building, and storage tank. The wastewater system would accommodate up to 10,000 gallons of wastewater per day and serve the entire project.[1] The primary mode of wastewater dispersal during the dry season would be through subsurface drip irrigation lines located throughout much of the project site. A leach field of 0.22 acre and a 10,000-gallon aboveground storage tank would be located adjacent the treatment system, south of Commodore Webster Drive (as shown

[1] The estimated average daily wastewater flow is 9,500 gallons per day (gpd). The equalization tank, which stores wastewater, is sized for 5,000 gpd, or approximately half a day of flow. The recycled water storage tank would store treated effluents and is sized to provide slightly more than 1 day of recycled water storage, or 10,000 gallons. Recycled water could be used for toilet flushing in community area restrooms, which would need to be dual-plumbed. This would represent a demand of approximately 300 to 400 gpd. The reuse opportunity that is part of the current design is irrigation via a subsurface drip system, which is sized for 100 percent of wastewater flows and also provides another method of disposal during dry weather. The leach field has capacity to dispose of 200 percent of effluent, and the design does not assume a portion is used for irrigation.

in Figure 2.2-3). The water treatment system would be connected to the proposed micro-grid and back up emergency generator to ensure consistent power supply.

### 2.3.4 Electricity and Community Solar System

Electricity to the project site is provided by Pacific Gas and Electric (PG&E). The proposed residential units would be all electric; no gas appliances are proposed. The conversion of the project to all-electric use would require upgrades to the electrical infrastructure. Existing underground PG&E powerlines connecting to each building would remain. However, existing electrical metering panels would be replaced with a new exterior residential multi-meter panel. In addition, the three existing PG&E in-ground transformer vaults within the project site would be upgraded to accommodate the all-electric load.

Rooftop solar is proposed on all buildings, and two ground-mounted solar arrays are proposed along the east side of Commodore Webster Drive and on the hillside west of Buildings 101, 102, and 103 (as shown in Figure 2.2-3). The proposed 558,000 kilowatt-hour (kWh) solar photovoltaic (PV) system has been sized to offset 100 percent of the projected energy consumption of the project, including all-electric residences, the resident services building, a wastewater treatment plant, and electric vehicle (EV) charging loads. The ground-mounted PV panels would be approximately seven feet in height. An 80-kilowatt (-kW) battery energy storage system (BESS) and backup diesel generator are proposed between Buildings 1 and 50. A microgrid consisting of a portion of the PV system, a BESS, a generator, and the related electrical infrastructure would provide power to Building 1 and the wastewater treatment plant. The microgrid would allow Building 1 to serve as a neighborhood-level resilience center to provide shelter and resources during extreme weather events and other emergencies.

#### Telecommunication

The existing telecommunication facilities at the site would remain; no improvements are proposed.

#### Water

Potable water is provided to the site by the NMWD. The project has an anticipated water demand of 9,500 gallons per day (gpd). NMWD obtains its water supply for the West Marin service area from two wells located on the nearby Gallagher Ranch and from two wells located on the project site.

Fire sprinklers would be added to the ADA-compliance mobility units in Buildings 202 and 204, Building 50, and Building 1. New fire-water lines would be installed to service the sprinkler system.

#### Stormwater

The project is considered a regulated project according to the Bay Area Stormwater Management Agencies Association (BASMAA) Post-Construction Manual because it creates or replaces more than 5,000 square feet of impervious surface. Therefore, it must comply with the statewide Phase II municipal stormwater National Pollutant Discharge Elimination System (NPDES) permit. The project would implement runoff reduction measures including limiting

clearing, grading, and soil compaction, minimizing impervious surfaces, conserving natural areas, complying with ESHA buffer requirements, and using a combination of LID and BMPs to improve the water quality of runoff from the site compared to existing conditions. The project would utilize existing underground infrastructure where possible, and storm drain outlet pipes would be intercepted and routed to six new bioretention facilities throughout the project site to provide treatment of existing and proposed impervious surfaces. In addition, the existing mulched playground would be converted into a self-retaining area that would accept runoff from the uphill site to allow for infiltration into the ground. The proposed bioretention facilities and self-retaining area are shown in Figure 2.2-3.

### 2.3.5 Landscaping and Recreation

#### Landscaping

The project would require removal of 38 mature trees, all of which are non-native ornamental species and are not subject to the Marin County LCP list of Heritage Trees (see Table 2.3-3). The trees that would be removed are predominantly eucalyptus, dead trees, and other ornamental trees. The locations of trees to be removed are shown in Figure 2.3-2.

The proposed landscaping would use Marin-native and water-wise plants in landscape zones and raised garden beds. The total number of trees proposed for planting and removal by type are summarized in Table 2.3-3. Irrigation would be provided by recycled water from the on-site wastewater treatment system; no potable water from NMWD would be used. All landscaping would comply with required defensible space by Marin County Fire Department. All areas temporarily affected by grading would be revegetated with native plants. The plant palette is provided in Appendix B.

#### Recreation

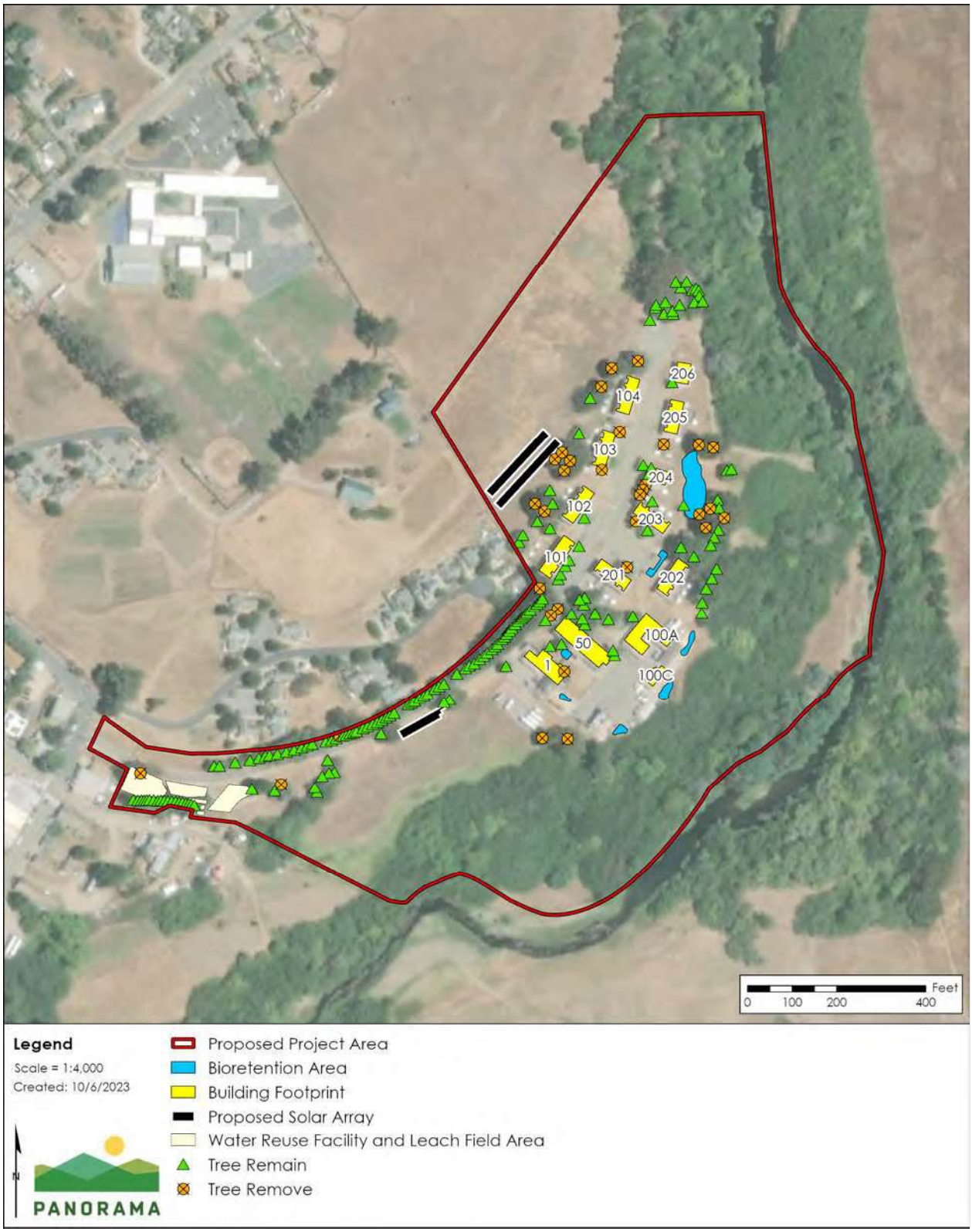
The existing aboveground pool and spa at the project site would be demolished and replaced with a new playground, multi-sport court, pathways, and resident gathering areas. The existing tennis court would be removed and regraded to natural conditions and planted with native species to improve ecological functions, permeability, and drainage. The half-basketball court would be replaced with pathways, parking, and improved drainage features.

**Table 2.3-3 Trees Proposed for Removal and Planting**

| Common name | Species name | Number of trees |
|---|---|---|
| **Removed** | | |
| Green wattle | *Acacia decurrens* | 1 |
| Silver maple | *Acer saccharinum* | 1 |
| Alder | *Alnus Sp.* | 1 |
| Leyland cypress | *Cupressus x leylandii* | 4 |
| Dwarf blue gum | *Eucalyptus globlulus 'Compacta'* | 13 |
| Blue gum eucalyptus | *Eucalyptus globulus* | 2 |
| Flooded gum | *Eucalyptus grandis* | 1 |
| Narrow-leaved black peppermint | *Eucalyptus nicholii* | 1 |
| Red box | *Eucalyptus polyanthemos* | 1 |
| Manna gum | *Eucalyptus viminalis* | 3 |
| Mayten | *Maytenus boaria* | 3 |
| Lemonwood | *Pittosporum eugenioides* | 4 |
| Dead pine | | 3 |
| **Total removed** | | **38** |
| **Planted** | | |
| Big leaf maple | *Acer macrophyllum* | 2 |
| Box elder | *Acer negundo* | 5 |
| Red alder | *Alnus ruba* | 9 |
| Service berry | *Amelanchier spp.* | 11 |
| Mountain mahogany | *Cercocarpus* | 8 |
| Oregon ash | *Fraxinus latifolia* | 8 |
| Bishop pine | *Pinus muricata* | 1 |
| Coast redwood | *Sequoia sempervirens* | 2 |
| California bay | *Umbellularia californica* | 1 |
| **Total planted** | | **47** |
| **Net change** | | **+9** |

*Source: ("L2.00_TREE PLANTING PLAN-Annotated Set (2).Pdf," n.d.)*

**Figure 2.3-2 Existing Trees and Trees for Removal**




*Source: (Maxar 2021; Siegal & Strain Architects 2023)*

## 2.4 Project Construction

### 2.4.1 Construction Schedule

Project construction is anticipated to last 1 to 2 years. Construction would occur between the hours of 7 a.m. and 6 p.m. on Monday through Friday and between the hours of 9 a.m. and 5 p.m. on Saturday. No work would occur on Sundays and Holidays (New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day)..

Construction would include demolition and excavation of areas of the project site for utility and infrastructure improvements, construction of wastewater infrastructure, removal of hardscape, and demolition of existing structures.

### 2.4.2 Access and Staging

Work crew would be expected to travel to the project site from areas east of the project area. The project site would be accessed via surrounding existing roads, including State Route 1 and Point Reyes Petaluma Road. Project staging and storage areas would be located within the project site.

### 2.4.3 Equipment and Personnel

Construction of the project would include typical heavy construction equipment including, but not limited to excavators, backhoes, bobcats, manlifts, and extension forklifts. A detailed list of proposed construction equipment is provided in Table 2.4-1, below. A maximum of 30 workers would be required for the project construction at any given time. Approximately 160 truck trips would be required for importing and exporting of material during construction.

**Table 2.4-1 Estimated Construction Equipment**

| Construction phase | Equipment | Quantity | Usage |
|---|---|---|---|
| Demolition | Excavators | 2 | 8 hours for 1 month |
| | Bobcat tracked | 1 | 8 hours for 1 month |
| Grading | Excavators | 2 | 8 hours for 3 months |
| | Bobcat tracked | 1 | 8 hours for 3 months |
| | Loaders | 3 | 8 hours for 2 months |
| Building construction | Forklifts (boom) | 1 | 8 hours for 12 months |
| | Manlifts | 2 | 8 hours for 12 months |
| Paving | Pavers | 1 | 8 hours for 1 month |
| | Paving equipment | 1 | 8 hours for 1 month |
| Architectural coating | Air compressors | 1 | 8 hours for 6 months |

## 2.5 Operation and Maintenance

The project includes resident services and property management, which would be located in Building 1, to support the project residents. It is anticipated that an average of three employees, with a maximum of seven employees, would be on site at any one time. Two property management and maintenance employees would be onsite seven days a week, and one resident services employee will be on site four days a week. The property management office would be open from 8 a.m. to 4 p.m. Monday through Friday.

It is anticipated that in addition to regular resident activities, approximately four amplified special events would occur each year. Additional temporary portable toilets would be brought to the project site as needed for large special events.

## 2.6 Agency Jurisdiction and Approvals

Construction and operation of the project are anticipated to require permits and approvals listed in Table 2.6-1.

**Table 2.6-1 Potentially Required Permits and Approvals**

| Permit | Agency | Function |
|---|---|---|
| National Environmental Policy Act | Housing and Urban Development | Required prior to authorization of federal funding |
| Section 7 Consultation and Biological Opinion | U.S. Fish and Wildlife Service | Potential to affect California red-legged frog |
| Section 106 Consultation | State Historic Preservation Officer | Concurrence of determination of effect on historic properties |
| Coastal Development Permit | Marin County | Development of housing units and major vegetation removal within ESHA |
| Report of Waste Discharge and Form 200 and a Title 22 Engineering Report | San Francisco Bay Regional Water Quality Control Board | Wastewater treatment system |
| Construction Stormwater General Permit | State Water Resources Control Board | Disturbance of more than 1 acre of land |
| Conditional Use Permit | Marin County | Development of affordable housing |
| Building Permit | Marin County | Rehabilitation and demolition of existing buildings and structures |

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# 3 Environmental Evaluation

## 3.1 Project Summary

| | |
|---|---|
| 1. Project title | Point Reyes Station USCG Coastal Permit and Conditional Use Permit |
| 2. Lead agency name and address | County of Marin Community Development Agency<br>Planning Division<br>3501 Civic Center Drive, Suite 308<br>San Rafael, CA 94903 |
| 3. Contact person and phone number | Rachel Reid, Environmental Planning Manager<br>415-473-6863 |
| 4. Project location | 100 Commodore Webster Drive<br>APNs: 119-240-73 and 119-236-10 |
| 5. Project sponsor's name and address | Community Land Trust Association of West Marin (CLAM) and Eden Housing, Inc. (Eden) |
| 6. General plan designation | Coastal Open Space (C-OS) and Rural/Residential Coastal Zone (C-SF4) |
| 7. Zoning | C-OA-Coastal, Open Area and C-RA-B3 - Coastal, Residential Agricultural |
| 8. Description of the project | The Applicant would adaptively reuse and repurpose the former USCG site to provide affordable housing units in Point Reyes Station. The proposed project would:<br>1) Rehabilitate existing townhomes contained in 10 two-story buildings (Buildings 101, 102, 103, 104, 201, 202, 203, 204, 205, 206) to provide 36 affordable housing units;<br>2) Rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units; 3) Rehabilitate "Building 100A" to provide 3 housing units; 4) Renovate and expand an existing kitchen/galley building (Building 1) to provide a resident services building including community education space;<br>5) Construct a new on-site wastewater treatment system;<br>6) Remove non-residential structures and provide bioretention facilities in environmentally sensitive habitat areas (ESHA); 7) Remove trees from a riparian area; and<br>8) Reconstruct an existing playground. |

| | |
|---|---|
| 9. Surrounding land uses and setting | Residential land uses to the west, an undeveloped lot to the north, and Lagunitas Creek to the east and south. |
| 10. Other public agencies whose approval is required | U.S. Department of Housing and Urban Development (HUD), United States Fish and Wildlife Service (USFWS), State Historic Preservation Officer (SHPO), San Francisco Regional Water Quality Control Board, State Water Resources Control Board. |
| 11. Native American consultation | The County of Marin sent a letter to Federated Indians of Graton Rancheria (FIGR) in August 2023. On September 1, 2023, FIGR Tribal monitor and archaeological consultant (Sally Evans; Evans & De Shazo, Inc.) conducted a pedestrian field survey. The results of the archaeological survey were provided to FIGR on October 16, 2023, and a consultation meeting was held with FIGR on October 16, 2023. |

### 3.1.1 Environmental Factors Potentially Affected

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

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

### 3.1.2 Approach to Environmental Analysis

This IS checklist evaluates the potential environmental impacts of the project. The level of significance for each resource topic is determined by considering the predicted magnitude of the impact. Four levels of impact significance are evaluated in this IS checklist:

**No Impact.** The project would not have the impact described. The project may have a beneficial effect, but there is no potential for the project to create or compound the impact described.

**Less Than Significant Impact.** The project would have the impact described, but the impact would not be significant. Mitigation is not required; however, the project applicant may choose to modify the project to avoid the impacts.

**Less Than Significant with Mitigation.** The project would have the impact described, and the impact could be significant. One or more mitigation measures have been identified that will reduce the impact to a less-than-significant level.

**Potentially Significant Impact.** The project would have the impact described, and the impact could be significant. The impact cannot be reduced to a less-than-significant level by incorporating mitigation measures. An environmental impact report must be prepared for this project.

# 3.2 Environmental Checklist

## 3.2.1 Aesthetics

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **1. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:** | | | | |
| a) Have a substantial adverse effect on a scenic vista? | ☐ | ☐ | ☐ | ☒ |
| b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway? | ☐ | ☐ | ☐ | ☒ |
| c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? | ☐ | ☐ | ☒ | ☐ |
| d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | ☐ | ☐ | ☒ | ☐ |

### Environmental Setting

#### Scenic Vistas

There are no designated scenic vistas identified in the Marin Countywide Plan or Local Coastal Program. The nearest designated scenic vista is along the Sunset Overlook Trail, which is located 4.1 miles northwest of the project site, and the scenic vista is not overlooking the project site.

#### Scenic Highways

State Highway 1 from the southern limit of Highway 1 in Marin County to Mendicino County is identified by the California Department of Transportation (Caltrans) as an "eligible" State scenic highway (Caltrans 2019). For CEQA purposes, an eligible State scenic highway is considered the same as a designated scenic highway to prevent visual degradation that may prevent future designation. The project site is located approximately 120 feet east of the intersection of State Highway 1 and is not visible from State Highway 1 due to dense riparian vegetation and mature trees along Highway 1 in proximity to the project site.

**Public Views of the Site**

Views of the project site from publicly accessible vantage points are limited due to mature trees and vegetation along neighboring streets around the project area, a hill slope to the north of the project area, and Lagunitas Creek riparian corridor. The project site is visible from Commodore Webster Drive as you enter the project area but has very limited visibility from neighboring public roads due to intervening topography, other residential structures, and vegetation. A portion of the project site is partially visible from the neighboring cul-de-sac and residential area but screened by mature trees at the east end of Giacomini Boulevard. The east end of Giacomini Boulevard provides access to a few residential homes but would not attract a lot of viewers as the road does not continue past the homes adjacent the cul-de-sac.

**Coastal Act Protection of Visual Quality**

The Coastal Act mandates that scenic and visual qualities of the coast shall be considered and protected as a resource of public importance. The LCP includes several policies requiring the protection of scenic quality and views of the natural environment (County of Marin 2019a).

- **Policy C-DES-3 Protection of Ridgeline Views.** Require new development proposed on or near visually prominent ridgelines to be grouped below the ridgeline on the least visually prominent portion of the site. Prohibit new development on top of, within 300 feet horizontally, or within 100 feet vertically of visually prominent ridgelines, whichever is more restrictive, if other suitable locations are available on the site. If structures must be placed within this restricted area because of site size or similar constraints, they shall be in locations that are least visible from public viewing areas, shall be sited and designed to limit public view impacts to the maximum extent feasible (including through landscaping and screening), and shall not exceed 18 feet in height.
- **C-DES-4 Limited Height of New Structures.** Limit new construction to a maximum height of 25 feet:
- **C-DES-8 Protection of Trees.** Site structures and roads to avoid removal of trees that contribute to the area's scenic and visual resources, except where required to maintain defensible space for structures or eliminate diseased trees that threaten surrounding structures or vegetation and where removal is otherwise consistent with LCP policies. Dead trees may serve as valuable habitat for some species, so avoid complete removal where appropriate.

### Discussion

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

The nearest scenic vista to the project site is located approximately 4.2 miles from the project site and does not overlook the project site. The project site is not located on or near any ridgeline. The project is set in a low-lying area adjacent Lagunitas Creek and is generally shielded from view by the hillslope to the north of the project and dense mature riparian vegetation to the south, west, and east of the project. Because the project is not visible from any scenic vista and would not block views of any scenic areas, the project would have no impact on scenic vistas.

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

The project site is not visible from Highway 1 due to intervening structures and topography between Highway 1 and the project site. Because the project site is not visible from any state scenic highway, the project would have no impact.

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

The visual character of the project area and surroundings include hillsides, Lagunitas Creek and associated riparian corridor, and residential uses. The project would rehabilitate existing townhomes, a dormitory building, and an administrative building for affordable housing. The rehabilitation of the existing buildings would not increase the height of any structure and all structures would remain less than 25 feet in height, consistent with the zoning and LCP policy C-DES-4. The project would include rooftop solar and ground-mounted solar located along Commodore Webster Drive and along the hillside west of Buildings 101, 102, and 103. The area of the proposed ground-mounted solar is not visible from any public vantage point due to the angle of the hill slope, which directs views of the solar panels to areas within the project site. While the project would involve removal of some trees within the site, the project would also involve planting of more trees than would be removed. The area along Lagunitas Creek would remain densely planted and trees would continue to line Commodore Webster Drive. The proposed wastewater treatment facility would be located near the west entrance to the site, and the water tank, the tallest new facility, would be approximately 13.9 feet tall. The ground-mounted solar arrays would be approximately 7 feet in height. Because the project area has minimal visibility from any public vantage point and the project would not change the height of any buildings, the project would have a less-than-significant impact on visual quality from any public vantage point.

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

The project area currently contains overhead lighting on Commodore Webster Drive and there are lights on the existing buildings. Rehabilitation of the buildings would include replacement of lighting and installation of new lighting to comply with Marin County Code Section 24.04.410, which requires open residential parking areas to provide exterior lighting to provide a safe level of illumination for pedestrian walkways. Any new exterior parking lighting would be shielded to not produce light on adjoining properties, and all lighting would comply with current California Building Code (CBC) requirements for energy efficiency. Because the new lighting would replace existing lighting, it would not create a new source of substantial light, and the impact from lighting would be less than significant.

The solar panels could potentially generate glare at certain seasons and certain viewing angles. The solar panels would be directed towards the south and towards the project area and would be screened from view from other areas by hill slope and dense riparian vegetation. As the solar panels would not be visible from areas outside of the project site, the solar panels would not generate substantial glare that would adversely affect views. The impact from glare would be less than significant.

**Mitigation Measures**

None required.

### 3.2.2 Agricultural and Forestry Resources

| Environmental impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:** | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])? | ☐ | ☐ | ☐ | ☒ |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ |

#### Discussion

**a) Would the Project Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

The proposed project site does not support agriculture uses. The proposed project is located in a developed area in Point Reyes in west Marin County. The project site is bounded by the Point Reyes Affordable Homes to the west, an undeveloped lot to the north, and Lagunitas Creek to the east and south. Parcels south of Lagunitas creek are zoned for agricultural use. The

proposed project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation (CDOC 2016). The proposed project site is designated "Urban and Built-Up Land," which is not an agricultural designation (CDOC n.d.). Lands to the south of Lagunitas Creek are designated as Farmland of Local Importance. The project would not affect agricultural zoning or productivity of areas mapped as Farmland of Local Importance on parcels south of Lagunitas Creek as the project is separated from the agricultural areas and would not affect agricultural use of those areas. . No impact on Farmland, agricultural zoning, or a Williamson Act contract would occur.

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

Refer to Response a), above. The project site was previously developed by the USCG with housing. The project site is not currently used for agriculture uses, and there are no Williamson Act contracts on the property. No impact would occur.

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

No land within the proposed project area is zoned as forest land or timberland. Thus, the proposed project would not conflict with zoning of lands that have a Timberland Preserve designation. The site is not identified as having timber resources in the Marin Countywide Plan (County of Marin 2007) and would not conflict with any zoning for timber resources.

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

Refer to Response c), above. The project site does not currently support forest land or timberlands. While the proposed project would result in removal of individual trees, the removal of individual trees from the site would not constitute loss or conversion of forest land as the trees do not occur in areas that meet the definition of a forest. Thus, implementation of the project would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur.

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

Refer to Response a), above. The project site is currently developed with residential uses. The proposed project site does not support agriculture or forest uses. The project would not affect agricultural production or use of nearby agricultural parcels south of Lagunitas Creek. Therefore, the project would not involve other changes in the existing environment which, due

to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use. No impact would occur.

**Mitigation Measures**

None required.

### 3.2.3 Air Quality

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:** | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ |
| b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? | ☐ | ☐ | ☒ | ☐ |
| c) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☐ | ☒ | ☐ |
| d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Setting

**Air Basin**

Marin County is within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is responsible for air quality management and regulates activities that may affect air quality within the Bay Area Air Basin.

**Air Quality**

***Federal Standards***

The U.S. Environmental Protection Agency (EPA) is responsible for setting National Ambient Air Quality Standards (NAAQS) under the Clean Air Act (CAA). National primary standards "provide public health protection, including protecting the health of 'sensitive' populations such as asthmatics, children, and the elderly." National secondary standards "provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings" (EPA 2023).

***State Standards***

The California Air Resources Board (CARB) is the State agency responsible for regulating mobile-source (vehicle) emissions and overseeing the activities of local air pollution control districts. CARB has established California Ambient Air Quality Standards (CAAQS) for all federally regulated pollutants in addition to sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The State standards generally are more stringent than the federal standards. Areas have been designated as being in attainment, nonattainment, or unclassified with respect to State ambient air quality standards under the California Clean Air Act (CCAA). As shown in Table 3.2-1, below, the San Francisco Bay Area Air Basin is in compliance with

state and federal air quality standards, with the exception of ozone and particulate matter ($PM_{10}$ and $PM_{2.5}$).

**Table 3.2-1 Ambient Air Quality Standards and San Francisco Bay Area Air Basin Attainment Status**

| Pollutant | Averaging Time | State Standard | | National Standard | |
|---|---|---|---|---|---|
| | | Concentration | Attainment Status | Concentration | Attainment Status |
| Ozone ($O_3$) | 1-Hour | 0.09 ppm | **Nonattainment** | – | – |
| | 8-Hour | 0.070 ppm | **Nonattainment** | 0.07 ppm | **Nonattainment** |
| Carbon monoxide (CO) | 1-Hour | 20 ppm | Attainment | 35 ppm | Attainment |
| | 8-Hour | 9.0 ppm | Attainment | 9 ppm | Attainment |
| Nitrogen dioxide ($NO_2$) | 1-Hour | 0.18 ppm | Attainment | 0.1 ppm | Attainment |
| | Annual | 0.030 ppm | Attainment | 0.053 ppm | Attainment |
| Sulfur dioxide ($SO_2$) | 1-Hour | 0.25 ppm | Attainment | 0.075 ppm | Attainment |
| | 24-Hour | 0.04 ppm | Attainment | -- | Attainment |
| Respirable particulate matter ($PM_{10}$) | 24-Hour | 50 µg/$m^3$ | - | 150 µg/m3 | Unclassified |
| | Annual | 20 µg/$m^3$ | **Nonattainment** | – | – |
| Fine particulate matter ($PM_{2.5}$) | 24-Hour | – | **Nonattainment** | 35 µg/$m^3$ | **Nonattainment** |
| | Annual | 12 µg/m3 | **Nonattainment** | 12 µg/$m^3$ | Unclassified/ attainment |
| Lead (Pb) | 30-day average | 1.5 µg/m3 | Attainment | – | Attainment |
| | 3-month rolling | – | Attainment | 0.15 µg/$m^3$ | Attainment |

Notes:
ppm = parts per million; µg/$m^3$= micrograms per cubic meter

If the air quality meets or is cleaner than the state or national standard, it is designated "attainment"; areas that don't meet the state or national standard are designated "nonattainment" and are shown in bold. In some cases, EPA is not able to determine an area's status after evaluating the available information and those areas are designated "unclassified."

*Source: (BAAQMD 2017)*

### Air Quality Emission Thresholds

BAAQMD's 2022 *CEQA Guidelines* provide air quality significance thresholds for volatile organic compounds (VOC), carbon monoxide (CO), oxides of nitrogen ($NO_x$), oxides of sulfur ($SO_x$), and $PM_{10}$ to determine where air emissions generated during project construction and operation would be significant, as shown in Table 3.2-2 (BAAQMD 2022).

**Table 3.2-2 Air Quality Thresholds of Significance**

| Pollutant | Construction emissions threshold of significance (lbs./day) | Operation emissions threshold of significance (lbs./day) |
|---|---|---|
| ROG | 54 | 54 |
| $NO_x$ | 54 | 54 |
| $PM_{10}$ | 82 (exhaust) | 82 |
| $PM_{2.5}$ | 54 (exhaust) | 54 |
| $PM_{10}$/ $PM_{2.5}$ | Best management practices | None |
| Local CO | None | 9.0 ppm (8-hour average) |

ppm = pounds per day; CO = carbon monoxide; $NO_x$ = oxides of nitrogen; $PM_{10}$ = particulate matter less than 10 microns in aerodynamic diameter; ROG = reactive organic gases

*Source: (BAAQMD 2022)*

## Discussion

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

The project is located within the San Francisco Bay Area Air Basin, which is within BAAQMD. BAAQMD adopted the Bay Area Clean Air Plan in April 2017, which is the applicable air quality plan within the San Francisco Bay Area Air Basin (BAAQMD 2017b). The project consistency with the Bay Area Clean Air Plan is summarized in Table 3.2-3. As summarized in the table, the project would be consistent with all applicable air quality control measures contained in the Bay Area Clean Air Plan and the project would not conflict with or obstruct implementation of the plan. The impact from conflict with an applicable air quality plan would be less than significant.

**Table 3.2-3 Consistency with Bay Area Clean Air Plan**

| Control Strategies | Consistency |
|---|---|
| Stationary source measures | The project does not include any stationary sources of emissions. |
| Transportation | The transportation control measures are applicable at a regional agency scale and not at a project scale. |
| Energy | The project includes solar energy generation, and the buildings would be all electric and comply with current CBC requirements. The project would be consistent with the energy control measures. |
| Buildings | The buildings would be constructed consistent with current CBC requirements. The project would be consistent with the building control measures. |
| Agriculture | The project is not an agricultural use, and the measures would not apply to the project. |

| Control Strategies | Consistency |
|---|---|
| Natural and working lands | The project would avoid development in any wetland areas and would plant more trees than would be removed. The project would be consistent with the natural and working lands measures. |
| Water | The project would use recycled wastewater for landscape irrigation to reduce water use. The project would be consistent with the water conservation control measures. |

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

**Construction**

The proposed project would require the temporary use of equipment for grading, demolition, and construction, which would generate air emissions. Equipment that would be used during construction of the project is summarized in Table 2.4-1. A maximum of 30 workers would be required for the project construction at any given time. Approximately 160 truck trips from construction equipment and vehicles would occur daily during construction. Emissions of ozone precursors ROG and $NO_x$ would primarily be generated from construction equipment exhaust and mobile sources and would vary as a function of the number of daily vehicle trips, the types and number of heavy-duty, off-road equipment used, and the intensity and frequency of their operation. The current version of the California Emissions Estimator Model (CalEEMod) was used to quantify construction-related and operational emissions for the project. CalEEMod is a statewide land use emissions model developed by the California Air Pollution Control Officers Association in collaboration with California air districts to quantify potential criteria air pollutant and precursor and greenhouse gas emissions associated with construction and operations from land use projects. The air emissions modeling results are provided in Appendix C.

Consistent with BAAQMD CEQA Guidelines, the project's individual contribution to criteria air pollutants would be cumulatively considerable if it exceeded the BAAQMD thresholds provided in Table 3.2-2. The average daily construction period emissions (i.e., total construction period emissions divided by the number of construction days) were compared to the BAAQMD significance thresholds. Table 3.2-4 shows the estimated short-term construction emissions associated with the project and compares those emissions to the BAAQMD's significance thresholds for construction exhaust emissions. All construction-related emissions would be below the BAAQMD significance thresholds. BAAQMD also recommends that all projects implement the basic construction mitigation measures to ensure a project's impacts on air quality are less than significant even when project construction emissions are below the numeric significance thresholds. Marin Development Code section 22.20.040.C specifies dust control measures that are required for projects involving ground disturbance. The dust control measures specified in Marin Development Code section 22.20.040.C are equivalent to the BAAQMD basic construction mitigation measures. With implementation of dust control measures consistent with Marin Development Code, the impact from a cumulatively

considerable net increase in any criteria air pollutant for which the region is in non-attainment would be less than significant.

**Table 3.2-4 Estimated Maximum Average Daily Emissions by Phase (pounds per day)**

| Condition/year | ROG | $NO_X$ | $PM_{10}$ | $PM_{2.5}$ | CO |
|---|---|---|---|---|---|
| Construction | 2.68 | 4.18 | 1.13 | 0.34 | 8.51 |
| Operation | 3.60 | 2.55 | 3.29 | 0.89 | 15.41 |
| Significance threshold | 54 | 54 | 82 | 54 | — |
| **Exceeds threshold?** | **No** | **No** | **No** | **No** | **No** |

Notes:
Amounts shown are in pounds per day.

**Operation/Occupancy**

As shown in Table 3.2-4, the project's operational emissions would not exceed any BAAQMD threshold for any criteria air pollutants. The project would not result in a cumulatively considerable net increase in any criteria air pollutant for which the region is in non-attainment, and the impact would be less than significant.

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

Sensitive receptors in the vicinity of the project site include a few local residences located along Giacomini Road to the north of the project site. No other sensitive receptors are located within 1,000 feet of the project. The project construction would involve use of heavy equipment that would generate emissions. The heavy equipment that would be used during construction is summarized in Table 2.4-1. The construction equipment would move around the project site throughout the construction period and would not be stationary in any one area near sensitive receptors. Because the project involves reuse of existing buildings, roads, and infrastructure, the limited use of heavy equipment during construction would not expose any sensitive receptors to substantial pollutant concentrations. During project operation and occupancy, the project would be all electric. The project includes solar panels and BESS capable of supplying the entire energy use of the project in addition to interconnection to PG&E electrical grid. The project would include an emergency generator that would only be used during emergencies when both electrical power from PG&E and solar and BESS power are not available. The emergency use of the generator would not expose sensitive receptors to substantial pollutant concentrations due to the very infrequent use of the generator.

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

Residential projects are not generally associated with odor emissions that would adversely affect surrounding uses. During construction of the project, the use of diesel-powered vehicles

and equipment would generate temporary and localized odors. The use of diesel-powered vehicles and equipment would be temporary and use of heavy equipment during those periods of time would be sporadic, and equipment would not be in use during the entire construction period. Project emissions would cease after the completion of construction. The proposed project would not create new or long-term objectionable odors. Therefore, the impact from other emissions such as odors would be less than significant.

**Mitigation Measures**

None required.

### 3.2.4 Biological Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **4. BIOLOGICAL RESOURCES. Would the project:** | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? | ☐ | ☒ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service? | ☐ | ☐ | ☒ | ☐ |
| c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☐ | ☒ | ☐ |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☐ | ☒ | ☐ |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☒ | ☐ | ☐ |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☐ | ☒ |

#### Environmental Setting

Biological resources within the project area were evaluated through review of literature and field surveys. The results of the biological resource investigation are presented in *Biological Site Assessment Report, U.S. Coast Guard Housing Facility Redevelopment Point Reyes Station, Marin County, California* (Appendix B). The environmental setting information presented in this section is summarized from that report. The project would receive project-based vouchers from the County of Marin using federal funds provided by the HUD and is subject to the HUD environmental review procedures found in 24 CFR Part 58, which require compliance with

NEPA and Section 7 of the Endangered Species Act (ESA). The County completed consultation with the National Marine Fisheries Service pursuant to section 7(a)(2) of the ESA and implementing regulations at 50 CFR 402, and Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act for the project on January 19, 2024 (Appendix B). The County also requested to initiate consultation with USFWS on January 2, 2024 (Appendix B).

**Special-Status Species**

***Vegetation Communities and Land Cover Types***

Terrestrial land cover types were mapped across the project area by biologists in 2021. Vegetation communities and land cover types mapped within the project area are summarized in Table 3.2-5, below.

**Table 3.2-5 Vegetation Communities and Land Cover Types**

| Vegetation community/ land cover type | Description | Acres |
|---|---|---|
| CCC Seasonal Wetland | CCC seasonal wetland are dominated by facultative grasses including common velvetgrass (*Holcus lanatus*), Italian ryegrass (*Festuca perennis*), and beardless wild rye (*Elymus triticoides*). Areas mapped as CCC seasonal wetland are not jurisdictional to the Corps or RWQCB, but are considered jurisdictional to the CCC, and are considered aquatic ESHA. | 0.67 |
| Corps Seasonal Wetland | Dominant vegetation within seasonal wetlands included Mexican rush (*Juncus mexicanus*), Italian ryegrass, common velvetgrass, and barley (*Hordeum marinum* ssp. *gussoneanum*), with subdominance by brown headed rush (*Juncus phaeocephalus*), waxy mannagrass (*Glyceria declinata*), and tall cyperus (*Cyperus eragrostis*). Areas mapped as seasonal wetland classify as an aquatic ESHA. | 0.69 |
| Ephemeral Ditch | The ephemeral ditch is approximately 30 feet in length and approximately 2 to 4 feet wide. The ephemeral ditch likely flows only during periods of above average precipitation. The ephemeral ditch is not considered an ESHA and lacks riparian vegetation. | 0.01 |
| Perennial Stream | Lagunitas Creek is a perennial stream and contain water year round. Areas mapped as perennial stream classify as an aquatic ESHA. | 1.61 |
| Purple Needlegrass Grassland | Purple needlegrass grassland contains 10 to 40 percent relative cover of purple needlegrass (*Stipa pulchra*). Other species observed include slim oat, purple false brome, California oatgrass (*Danthonia californica*), lupine, blue eyed grass (*Sisyrinchium bellum*), and flax (*Linum bienne*). Purple needlegrass grassland within the Study Area fits within the membership rules of the *Stipa [Nassella] pulchra – Bromus* spp. Association, which is considered sensitive by CDFW (2023a). Therefore, this community is considered a terrestrial ESHA. | 0.61 |

| Vegetation community/ land cover type | Description | Acres |
|---|---|---|
| Arroyo Willow Thicket | The canopy of the arroyo willow thicket vegetation community is dominated arroyo willow with red willow (*Salix laevigata*), red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*). The understory is typically dominated by dense cover of California blackberry (*Rubus ursinus*). Arroyo willow thicket is both a riparian vegetation community and an aquatic ESHA. | 11.44 |
| California Bay Forest | The canopy of the California bay forest vegetation community is dominated by California bay (*Umbellularia californica*), with inclusions of non-native invasive blue gum eucalyptus (*Eucalyptus globulus*), and coast live oak (*Quercus agrifolia*). The understory is sparsely dominated by forget me not (*Myosotis latifolia*), lady fern (*Athyrium filix*-femina var. *cyclosorum*), and poison oak (*Toxicodendron diversilobum*). California bay forest is considered sensitive by CDFW. | 1.13 |
| Developed/Landscaped | Developed/landscaped areas are composed of the former USCG barracks, buildings, associated infrastructure (e.g., roads, parking lots, and sidewalks), and ornamental trees and shrubs. The topography of the area has been altered from its original form, graded to accommodate development. The vegetation is highly altered, consisting of non-native ornamental trees and shrubs, and disturbance tolerant herbs. Species include Deodar cedar (*Cedrus deodara*), Monterey pine (*Pinus radiata*), Mexican fan palm (*Washingtonia robusta*), slim oat (*Avena barbata*), English lawn daisy (*Bellis perennis*), and bristly ox-tongue (*Helmintotheca echioides*). | 9.66 |
| Non-Native Annual Grassland | Non-native annual grassland is composed of several alliances of annual and perennial non-native grasses. Vegetative cover within non-native annual grassland is typically dominated by dense non-native invasive grasses and forbs including slim oat (*Avana barbata*), ripgut brome (*Bromus diandrus*), reed fescue (*Festuca arundinacea*), and purple false brome (*Brachypodium distachyon*). This community borders and intergrades with adjacent stands of native purple needlegrass grassland on slopes, and it borders mesic grassland, and seasonal wetlands on low lying flats and depressions. Commonly observed forbs within non-native annual grassland included coastal heron's bill (*Erodium cicutarium*), sheep sorrel (*Rumex acetosella*), lupine (*Lupinus bicolor*), and hairy cat's ear (*Hypochaeris radicata*). Non-native annual grassland is not considered sensitive by Marin County, CDFW, or any other regulatory entity. | 7.77 |

### Special-Status Species

Potential special-status species occurrences were evaluated in the project area through a literature and database review. Database searches for known occurrences of special-status species were conducted for a 5-mile radius surrounding the project area through the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Rare Plant Inventory, and U.S Fish and Wildlife Service (USFWS) Information for Planning and

Consultation (see Appendix B) (CDFW 2023; USFWS 2023; CDFW 2023). Potential for special-status species to occur on the site was based on the presence of suitable habitat as documented in a site visit on January 20, 2021 (WRA, Inc. 2023) (see Appendix B). The potential for each special-status species to occur in the project area was then determined according to the following criteria:

- **No Potential.** Habitat on and adjacent the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- **Low Potential.** 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.
- **Present.** There is recent documentation of the species in the area during surveys.

To determine the presence or absence of special-status plant species, focused surveys were conducted within the project site on January 20, April 9, and June 4, 2021, and no special-status plants were identified in the project area (WRA, Inc. 2023). Special-status plants are, therefore, presumed absent for the project area. A general wildlife assessment was performed on January 20, 2021 (WRA, Inc. 2023). Those species that were determined to have a moderate or high potential to occur on the site or are present in the area are summarized in Table 3.2-6, below.

**Table 3.2-6 Special-status Species Potential to Occur**

| Common name (scientific name) | Listing status | Habitat requirements | Potential to occur |
|---|---|---|---|
| **Fish** | | | |
| Steelhead (*Oncorhynchus mykiss irideus*) | FT, SE | Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen. | Present in Lagunitas Creek |
| Coho salmon (*Orcorhynchus kisutch*) | 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. | Present in Lagunitas Creek |

| Common name (scientific name) | Listing status | Habitat requirements | Potential to occur |
|---|---|---|---|
| Tomales roach (*Lavinia symmetricus ssp.*) | SSC | Occurs in tributaries to Tomales Bay. Habitat generalist, tolerant of relatively high temperatures and low oxygen levels in a variety of freshwater stream reaches. Intolerant of highly saline conditions. | High potential in Lagunitas Creek |
| **Invertebrates** | | | |
| Monarch butterfly (*Danaus plexippus*) | FC; winter roosts protected by CDFW | Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (usually eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby. | Moderate potential (winter roosting) |
| 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. Favors shallow pools away from the main stream flow. Winter: undercut banks with exposed roots; summer: leafy branches touching water. | Present in Lagunitas Creek |
| **Amphibians** | | | |
| California red-legged frog (*Rana draytonii*) | FT, SSC | Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, stream pools and wetlands. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains. | Moderate potential in non-breeding aquatic habitat |
| **Reptiles** | | | |
| Western pond turtle (*Actinemys 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. | High potential in Lagunitas Creek |
| **Birds** | | | |
| 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. | Moderate potential in open grassland |

| Common name (scientific name) | Listing status | Habitat requirements | Potential to occur |
|---|---|---|---|
| White-tailed kite (*Elanus leucurus*) | CFP | Year-long resident of coastal and valley lowlands, including agricultural areas. Nests in a variety of tree types. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians. | Moderate potential for nesting |
| San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuosa*) | SSC | Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting. | Moderate potential in riparian areas with dense understory |
| 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; often found where wetland communities merge into grassland. May also occur in drier grasslands. Nests near the ground in taller vegetation, including along roads, levees, and canals. | Moderate potential in areas of open grassland |
| Yellow warbler (*Setophaga petechia brewsteri)* | SSC | Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration. | Moderate potential for nesting in riparian woodland and thickets |
| **Mammals** | | | |
| Pallid bat (*Antrozous pallidus*) | 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. | Moderate potential for roosting within unoccupied buildings |
| Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*) | 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. | Moderate potential for roosting within unoccupied buildings |

| Common name (scientific name) | Listing status | Habitat requirements | Potential to occur |
|---|---|---|---|
| American badger (*Taxidea taxus*) | SSC | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents. | High potential in grassland with friable soils |

Notes:

FT = federally listed as threatened; FE = federally listed as endangered; FC = federal candidate for listing; SE = state listed as endangered; SSC = species of special concern; CFP = CDFW fully protected; WBWG = Western Bat Working Group

*Source: Biological Site Assessment Report (WRA, Inc. 2023)*

**Riparian Habitat and Sensitive Natural Communities**

Riparian habitat within the project area includes arroyo willow thickets. Sensitive natural communities within the project area include all areas designated as ESHA in the LCP as shown in Figure 2.2-3. The ESHA areas include wetland (CCC seasonal wetland and Corps seasonal wetland), streams and riparian vegetation (Lagunitas Creek, which is a perennial stream, and its associated riparian woodland); and terrestrial (purple needlegrass grassland). California bay forest is also defined as a sensitive natural community by CDFW (2023c).

**Wetlands**

Wetlands, including CCC seasonal wetland and Corps seasonal wetlands, occur within the project area, as shown in Figure 2.2-3.

**Critical Habitat**

The project area does not contain any designated critical habitat for USFWS-listed species, but the reach of Lagunitas Creek within and adjacent the project site is designated critical habitat for steelhead and coho salmon (NMFS 2022). Lagunitas Creek is also mapped as essential fish habitat for salmonids (NMFS 2021).

## Discussion

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

**Construction**

***Special Status Plants***

No special-status plants occur within the project area based on the results of focused surveys. Because no special-status plants occur in the area, the project would have no impact on special-status plants.

***Special Status Fish and California freshwater shrimp***

CCC steelhead, CCC coho salmon, Tomales roach, or California freshwater shrimp occur within Lagunitas Creek within the project site. The project does not propose any activities within Lagunitas Creek and would not impact the riparian vegetation along Lagunitas Creek. Because the project construction would avoid Lagunitas Creek and all vegetation along the creek, there will be no direct impact on CCC steelhead, CCC coho salmon, Tomales roach, or California freshwater shrimp.

The project has the potential to indirectly impact CCC steelhead, CCC coho salmon, Tomales roach, or California freshwater shrimp. Indirect impacts may occur during construction as a result of potential impacts on water quality from leaking fuel or hydraulic lines on heavy equipment, improper fuel handling practices, spills during refueling or lubrication operations, and sediment runoff from clearing and grading. The proposed Project would include demolition and construction activities, including tree removal and grading in proximity to Lagunitas Creek. These activities would involve earthmoving and other actions that would disturb soils and generate construction debris. Erosion of disturbed soils or sheet flow runoff from the surrounding disturbed Project area could increase turbidity and sedimentation in Lagunitas Creek that could affect California freshwater shrimp and salmonids' feeding rates and growth, cause behavioral avoidance, and in extreme cases result in injury or mortality.

The construction contractor would need to prepare a project-specific Stormwater Pollution Prevention Plan (SWPPP) and comply with the Construction Stormwater General Permit (Order # 2022-0057-DWQ). The Project would also ensure that all fuel and hydraulic lines on heavy equipment are in good working order and not leaking. All equipment would be serviced on an as-needed basis with the necessary fueling and lubrication conducted at designated staging sites prior to the start of work. Accidents such as the breaking of a hydraulic line would require immediate clean-up of the area well before the onset of high-flow conditions as per terms and conditions of state and federal permits. The SWPPP would contain *best management practices* (BMPs) and design and conservation measures that would be used to control construction area erosion, transport, and deposition of sediment into the channel and production of turbid water. These include erosion control BMPs (e.g., silt fences, straw wattles, seed-free mulching) and revegetation with native plants. Compliance with the Construction Stormwater General Permit and other design features would avoid significant impacts on CCC steelhead, CCC coho salmon, Tomales roach, and California freshwater shrimp and the resulting indirect impact would be less than significant.

***Monarch Butterfly***

The mature eucalyptus trees within the project area provide potential roosting habitat for monarch butterfly. Because the project includes removal of 19 mature eucalyptus trees that provide potential habitat for monarch butterflies, the project has the potential to impact monarch butterflies if there were an active monarch roost within the eucalyptus tree at the time of construction. Mitigation Measure BIO-1 requires removal of eucalyptus trees outside of the roosting period for monarch butterflies to avoid the potential for impacts on a roost of monarch butterflies. The removal of 19 eucalyptus trees would not constitute substantial removal of

habitat that would significantly impact monarch butterflies. Eucalyptus trees are common throughout the region, and monarch butterflies are not known to use the trees in the project area or vicinity. Research from Griffiths and Villablanca (2015) shows that monarchs will select native tree species such as coast redwood over non-native eucalyptus when they are available. The project would plant coast redwood trees as part of the native vegetation palette, creating preferred habitat for monarch butterfly roosting, and would also create larval habitat by planting native milkweed (*Asclepias speciosa*), which is included in the plant palette (Appendix B). Because the Mitigation Measure BIO-1 would avoid impacts on any roosts of monarch butterflies and the project would replace habitat for monarch butterflies, the impact on monarch butterflies would be less than significant with implementation of mitigation.

***California Red-legged Frog***

The majority of the project area is located within suitable upland habitat for California red-legged frog (CRLF), which includes areas within 300 feet of the Lagunitas Creek riparian corridor. The project would remove 2,152 square feet of existing facilities from upland areas within ESHA and adjacent the riparian corridor and would replace those structures with bioretention facilities, which would provide a long-term benefit to water quality and habitat.

CRLF can disperse from the riparian habitat and ponds near the project site into upland areas. CRLF could potentially burrow in grassland areas or undisturbed portions of the project site. In the event that CRLF are present within the construction area at the time of project construction, the vegetation removal, grading, and other ground-disturbing construction activities could result in injury or mortality of CRLF if one were to occur within the project area during construction. Injury or mortality of a CRLF would be a significant impact.

Implementation of Mitigation Measures BIO-2 through BIO-13 require a USFWS-approved biologist to conduct pre-construction clearance surveys, biological monitoring by a designated biologist during ground-disturbing activities, installation of temporary exclusion fencing to prevent CRLF dispersal into the work area during construction, worker environmental awareness training, construction avoidance periods after rain events, and covers for open excavations. Should the species occur on the site during construction, the mitigation measures also define procedures for safe disposition of CRLF. Because Mitigation Measures BIO-2 through BIO-13 include protections to avoid injury or mortality of a CRLF during construction, the impact on CRLF would be less than significant with implementation of mitigation.

Indirect impacts on CRLF from water quality impacts in Lagunitas Creek are described above under impacts to special-status fish and amphibians. As described above, indirect impacts on CRLF from potential water quality impacts during construction would be less than significant.

***Western Pond Turtle***

Lagunitas Creek provides perennial aquatic habitat for western pond turtle and western pond turtle could occur in Lagunitas Creek intermittently. Upland nesting of western pond turtle is unlikely in the project disturbance area given the distance from the stream (approximately 220 feet at the nearest location and mostly greater), the presence of dense herbaceous vegetation

between the stream and the disturbance area, and the developed/disturbed nature of the portion of the project area facing the stream. While upland nesting is unlikely in the disturbance area, the presence of western pond turtle cannot be ruled out given the proximity to Lagunitas Creek and riparian habitat. Any injury or mortality of western pond turtle as a result of the project would be a significant impact.

Implementation of Mitigation Measures BIO-2, BIO-3, BIO-6, and BIO-10 include procedures for worker training, installation of exclusion fencing, which would effectively avoid entry of western pond turtle into the project area, biological monitoring during construction, and covering of trenches to avoid a western pond turtle from entering any trench. Because the project includes implementation of mitigation measures that would effectively exclude western pond turtle from the project area, and there would be monitors on the site that would be able to detect their presence and address the species if they were to occur in the area, the impact on western pond turtle during construction would be less than significant with implementation of mitigation.

Indirect impacts on western pond turtle from water quality impacts in Lagunitas Creek are described above under impacts to special-status fish and amphibians. As described above, indirect impacts on western pond turtle from potential water quality impacts during construction would be less than significant.

***Special Status Birds***

White-tailed kite, yellow warbler, and other bird species protected by the Migratory Bird Treaty Act (MBTA) have the potential to use the vegetation and trees within the project area as nesting habitat. Removal of trees with an active nest of special-status bird species would cause destruction of the nest and eggs which would be a significant impact. In addition, the project construction would involve use of heavy equipment that would produce noise in proximity to suitable habitat for special-status birds and other birds protected by the MBTA. Generation of noise in proximity to an active nest could affect nesting behavior and cause nest abandonment. Nest abandonment for any special-status bird species or bird protected under the MBTA would be a significant impact.

Marin Development Code section 22.20.040.G limits tree/vegetation removal and initial ground disturbance activities occur outside of the active nesting season (i.e., February 1 to August 15) when feasible, pre-construction surveys for birds in any vegetation removed during the nesting season, and avoidance procedures for active nests including buffers from active nesting habitat as determined by a qualified biologist. The project would also plant more trees than would be removed during construction, and there would be no loss of suitable nesting habitat as a result of project construction. Marin Development Code does not specify the disturbance free buffers to be enacted during construction. Due to the potential for special-status birds to occur in the area, Mitigation Measure BIO-14 defines increased buffer distances for special-status species. Because Marin Development Code section 22.20.040.G includes specific procedures to protect active bird nests and mitigation measure BIO-14 includes increased buffer distances, the impact on special-status birds and other MBTA protected bird species would be less than significant.

*Special Status Mammals*

Two special-status bat species, pallid bat and Townsend's big-eared bat, were determined to have moderate potential to be present within the study area, including roosting within buildings. Building demolition during the bat maternity season (generally, April through August) could impact bat breeding and potentially result in the mortality of bats, which would be a significant impact. Marin Development Code section 22.20.040.F defines procedures for pre-construction surveys and protection of active bat roosts during construction and demolition activities during the bat roosting season. Because bats and active roosts would be protected with implementation of Marin Development Code section 22.20.040.F, the impact on special-status bats from project construction and demolition activities would be less than significant.

Remnant American badger burrows were observed within open grassland areas within the project site, and American badgers are assumed to be present within grassland areas in the project site. The project would install solar panels and potentially require trenching of electrical conduit in grassland areas. The wastewater treatment facility would also be located in grasslands. Ground disturbance in grassland areas has the potential to impact American badgers if there were an active burrow in the area at the time of construction. Destruction of a burrow or other means of injury or mortality of an American badger would be a significant impact. The impacts on suitable habitat for American badger (grasslands) would be minimal and would not cause a significant impact on the species.

Mitigation Measure BIO-15 requires protections for American badger including pre-construction surveys and buffers from any active burrows of American badger. Because Mitigation Measure BIO-15 defines procedures to protect American badger, the impact on American badger during construction would be less than significant with mitigation.

**Operation/Occupancy**

The project operation and occupancy would not result in loss of any habitat for special-status species. Operation of the facilities and occupancy would occur within the developed project areas. The landscaped areas and bioretention basins constructed as part of the project could provide some upland habitat for CRLF and would provide increased habitat for potential bird nesting due to the increase in trees.

The project would include installation of a new enhanced wastewater treatment system to produce high-quality effluent that can be reused for landscape irrigation around the site. The associated leach fields would be used as a backup disposal system during periods of rainfall or when the irrigation system is being maintained. As a precautionary measure, the treatment and disposal systems would be sized up by a safety factor of 1.1 to manage increased flows during special events with increased usage. To protect groundwater at the site and create a reliable supply of non-potable water for irrigation needs, the wastewater treatment system would be designed to meet the State's Recycled Water Standards, established in California Code of Regulations Title 22, for disinfected tertiary treatment. The treatment system would be designed to produce disinfected tertiary treated recycled water that would have a biochemical oxygen demand, total suspended solids, and total nitrate level to less than 10 mg/L. Advanced

oxidation treatment may also be used to remove trace contaminants including pharmaceuticals and other contaminants of emerging concern. The recycled water must also meet effluent limits set by the State Water Resources Control Board Order WQ 2014-0153-DWQ "General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems" (2014 WDR General Order).

The tertiary treated wastewater would be applied via subsurface drip dispersal during the dry season when the wastewater application is less than the evapotranspiration rate of the landscaping it is being applied to. Because the minimum depth to groundwater in the proposed irrigation areas is greater than 4.5 feet below ground surface, subsurface drip systems would be placed at approximately 1.5 feet below ground surface, resulting in a greater than 3-foot separation between the subsurface drip system and groundwater. Monthly irrigation demands were calculated based on historical precipitation reference evapotranspiration data. In the summer, 100 percent of recycled water supply would be used for irrigation, and potable water may be needed to supplement, depending on the final landscape plan and plants selected. In the winter months, irrigation would only consume 25 percent of the recycled water supply, and the excess recycled water would be sent to the leach field for disposal. Because the wastewater would be applied at a rate that it would be used by the landscaping, the wastewater applied to the landscaping would not migrate to the creek and would not affect water quality in Lagunitas Creek. The subsurface drip dispersal areas would therefore not affect special status species and habitat areas in Lagunitas Creek.

During the rainy season, when the irrigation water demand does not exceed rainfall, the wastewater would be applied within the leach field as the primary means of water reuse. The leach field is sized to accommodate 100 percent of the design flow of the septic system. The leach field would be used during periods of low irrigation demand, during rain events, and when the subsurface drip system needs maintenance. All subsurface drip dispersal areas and leach fields must comply with local regulations, which require a 110-foot setback from flowing streams, a 50-foot setback from ephemeral stream drainages, and a 75-foot setback from intermittent watercourses or seasonal wetlands. The leach field is located approximately 400 feet from Lagunitas Creek at the nearest point. Leach fields would include trenches measuring 24 inches deep by 24 inches wide. Leach field saturation or ponding is unlikely, given the high quality of recycled water, which would minimize biological growth and potential clogging in the leach trench. Because depth to groundwater in the proposed leach field locations is greater than 8 feet below the ground surface and wastewater would be discharged subsurface, and because the leach field is separated from Lagunitas Creek by 400 feet, discharge waters in the leach field would infiltrate to the groundwater and would not migrate to the creek surface waters. Leach field discharges, therefore, would not affect water quality and special status species in Lagunitas Creek.

Following construction, storm drain outlet pipes would be intercepted and routed to six new bioretention facilities throughout the project site to provide treatment of existing and proposed impervious surfaces. In addition, the existing mulched playground would be converted into a self-retaining area that would accept runoff from the uphill site to allow for infiltration into the

ground. The project would result in reduced impervious surface area and increased bioretention self-retaining areas during operation and would therefore be expected to result in reduced sediment loading and provide increased treatment of runoff to Lagunitas Creek. Therefore, the proposed impervious surfaces and self-retaining areas are not likely to adversely affect special status species in Lagunitas Creek and riparian habitat.

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

The project site contains riparian (arroyo willow) habitat, habitat types defined in the Coastal Plan as ESHA (i.e., purple needlegrass grassland, CCC seasonal wetland, and Corps seasonal wetland), and California bay forest, which is designated by CDFW as a sensitive natural community. The project would not involve any construction activities or facilities within riparian areas, purple needlegrass grassland ESHA, CCC seasonal wetland ESHA, Corps seasonal wetland ESHA, or California bay forest. The project would not result in removal or direct impacts on any riparian area of sensitive natural community occurring on the project site. The project has also been designed to avoid construction within a 50-foot buffer of purple needlegrass ESHA, CCC seasonal wetland ESHA, and Corps seasonal wetland ESHA. The project would involve activities within the 50-foot riparian ESHA buffer to remove existing structures from the ESHA buffer and construct bioretention facilities. Grading of the new bioretention areas in proximity to the riparian corridor could result in indirect temporary impacts on riparian habitat for temporary increased sedimentation. The construction contractor would need to prepare a project-specific Stormwater Pollution Prevention Plan (SWPPP) and comply with the Construction Stormwater General Permit (Order # 2022-0057-DWQ). Implementation of erosion and sediment control BMPs in compliance with the SWPPP and Construction Stormwater General Permit would reduce impacts on riparian areas from grading nearby to a less than significant level. Removal of existing structures and installation of new bioretention areas would have a net benefit on habitat and water quality during project operation. Due to avoidance of activities within the ESHA areas, with the exception of removal of existing structures, the project would avoid indirect impacts, on sensitive habitats. The impacts on riparian areas and sensitive vegetation communities would be less than significant.

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

The project does not involve any construction within state or federally protected wetlands and would not involve direct removal, filling, or hydrologic interruption to any wetland areas. The project includes a 50-foot buffer from CCC seasonal wetlands and Corps wetlands, and the only activities that would be conducted within 100 feet of any wetland would be removal of existing structures and replacement of the existing structure with bioretention areas, which would have a net benefit on habitat and water quality. Because the project would avoid construction within

a wetland and a minimum 50-foot buffer from the nearest wetland area, the project impacts on wetlands would be less than significant.

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

The movement and migratory corridors for fish and wildlife on the project site include Lagunitas Creek and associated riparian habitat. The project would not involve any activities within Lagunitas Creek or the adjacent riparian area. The 50-foot ESHA riparian buffer described in (b) above would maintain a critical migratory wildlife corridor and potential nursery sites for native resident or migratory wildlife. Additionally, the project site does not overlap with critical habitat for any listed species (USFWS 2023).

No breeding habitat for CRLF or western pond turtle occurs on the site with the exception of the riparian corridor and Lagunitas Creek, which would be avoided as described above. While the project would remove some trees that could provide nesting habitat from the area, the project would plant more trees than are removed, offsetting any loss of nursery sites.

The project construction would generate noise that could impact nesting behavior, which could be considered impeding use of a nursery site. Marin Development Code section 22.20.040 G defines specific procedures including pre-construction monitoring, buffers from any active bird nest, and biological monitoring to avoid disturbance of an active bird nest. Because Marin Development Code 22.20.040 G defines specific procedures to avoid nest disturbance, the impact on use of native wildlife nursery sites would be less than significant.

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

The project is subject to all policies and ordinances described in the LCP (County of Marin 2019b), which includes ESHA buffers, as described above, to protect terrestrial and aquatic biological resources. The LCP also encourages the restoration and enhancement of degraded ESHAs, which would be accomplished through native tree and vegetation planting on the project site. Specific policies that would be applicable to the project include C-BIO-5, C-BIO-10, and C-BIO-11.

- **C-BIO-5 Ecological Restoration**: Encourage the restoration and enhancement of degraded ESHAs and the creation of new ESHAs, and streamline regulatory processes whenever possible to facilitate the successful completion of restoration projects.
- **C-BIO-10 Roosting and Nesting Habitat**: Prohibit the alteration or removal of groves of trees that provide colonial nesting and roosting habitat for monarch butterflies or other wildlife, except where the trees pose a threat to life or property.
- **C-BIO-11 Development Adjacent to Roosting and Nesting Habitat**: Development adjacent to wildlife nesting and roosting areas shall be set back a sufficient distance

to protect against disruption in nesting and roosting activities and designed to avoid impacts on the habitat area. Time such development activities so that disturbance to nesting and breeding wildlife is avoided. To the extent feasible, use native vegetation for landscaping.

The project would adhere to the requirements of C-BIO-5 by removing existing structures from an ESHA buffer and installing bioretention features that would help improve water quality within the ESHA. The project would adhere to C-BIO-10 by only removing diseased eucalyptus which would present a risk to risk to life and property and would not remove any groves of trees. The eucalyptus tree removal timing would also be scheduled to avoid the roosting season for monarch butterflies consistent with Mitigation Measure BIO-1. The project would adhere to policy C-BIO-11 by implementing Marin Development Code section 22.20.040 and Mitigation Measures BIO-1, BIO-2 to avoid project activities such as tree removal or structure demolition during times that could disrupt roosting or nesting habitat to the extent feasible and when avoidance of the nesting and roosting season is not feasible, ensuring the removal is completed under the direction of a qualified biologist to avoid impacts on any nesting or roosting behavior. Additionally, the project would plant more trees than it removes, offsetting any loss of nesting and roosting habitat. Because the project would implement ESHA buffers, enhance native vegetation through planting native species, would comply with Marin Development Code section 22.20.040, and implement Mitigation Measures BIO-1, BIO-2, the project would not conflict with any local policies or ordinances protecting biological resources, and effects would be less than significant with mitigation incorporated.

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

No Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) have been adopted covering the project area (CDFW 2023). The Marin County Open Space District (MCOSD) is the local government agency responsible for preserving public open space in Marin County. MCOSD, along with Marin County Parks, developed a Vegetation and Biodiversity Management Plan to guide management of the area. The project is not located within any of the MCOSD preserves identified in the Vegetation and Biodiversity Management Plan. Because the project is not included in any adopted HCPs, NCCCPs, or other local, regional, or state habitat conservation plans, the project would have no impact from conflicts with an HCP, NCCP or other habitat conservation plan.

### Mitigation Measures

**Mitigation Measure BIO-1: Tree Removal Outside of Monarch Butterfly Roosting Season**
Any removal of eucalyptus trees shall occur outside of the winter roosting season for monarch butterfly in Marin County (October through February). If the roosting season for monarch butterfly cannot be fully avoided, a pre-construction survey for active monarch butterfly roosts shall be conducted by a qualified biologist within three days prior to removal of eucalyptus

trees. If no active roosts are identified within the eucalyptus trees, the trees may be removed. If active roosts are identified within the eucalyptus trees, the trees cannot be removed until the roost has left the area as documented by a qualified biologist.

**Mitigation Measure BIO-2: Worker Environmental Awareness Training**
Prior to construction, all contractor construction personnel shall attend an environmental training program provided by a qualified biologist. The training shall discuss sensitive species and nesting bird habitat that may occur within the project area as well as identification of California red-legged frog and their burrows.

The training shall include the responsibilities of contractor's construction personnel, applicable mitigation measures, and notification requirements. The training shall also address other measures that protect biological resources.

The following information shall also be provided during the training:

- Specific information regarding the special-status species potentially present and their habitat needs
- Any reports of occurrences in the project area
- An explanation of the status of each listed species and their protection under state and federal laws
- A list of measures being taken to reduce effects to the species during construction and implementation

Fact sheets conveying this information and an educational brochure containing color photographs of all special-status species potentially present shall be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. Construction personnel shall be instructed to halt construction activities and contact the designated biologist if a wildlife species is observed in an area where it could be harmed by construction activities. A list of employees who attend the training sessions shall be maintained on the site during construction and made available to USFWS upon request.

**Mitigation Measure BIO-3: Install Exclusion Fencing**
Temporary exclusion fencing shall be installed around the limits of work areas to ensure special status animals (i.e., CRLF and western pond turtle) cannot enter the work area. Installation of exclusion fencing shall occur under the supervision of the designated biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance.

The exclusion fencing shall be installed in a manner that reduces the potential for trapping migrating wildlife and for wildlife climbing over the fence, such as having the top of the fencing curved over on the outside of the fence. Cover boards shall be installed along the perimeter of

the fencing to provide protection from the sun and predators, where necessary and appropriate. Gates shall be installed in the exclusion fencing that allow project access and adequately exclude wildlife. Gates will be secured at the end of each workday using sandbags or other means to prevent wildlife from entering the exclusion zone. The exclusion fencing shall remain in place and be maintained for the duration of construction activities and shall be removed within 15 days of completion of construction activities.

Prior to construction personnel entering and beginning work in fenced areas each day, the fenced areas shall be inspected by a biological monitor for special status species or any trapped wildlife and to identify damage to the exclusion fencing. The biological monitor must be trained by the designated biologist (BIO-4) on California red-legged frog identification, the laws protecting the species, and procedures to implement if the species is observed. If California red-legged frogs or trapped wildlife are observed, the designated biologist shall be notified immediately to determine the appropriate procedures to implement. Any damage to the fencing shall be immediately reported and repaired until the last day that construction equipment is at the project site.

**Mitigation Measure BIO-4: Designated Biologist**
The applicant shall obtain USFWS approval for a designated biologist(s) for the project. The designated biologist(s) shall be on site during all activities that may result in take of California red-legged frog. The qualifications of the designated biologist(s) shall be submitted to USFWS for review and written approval at least 30 calendar days prior to the date earthmoving is initiated at the project site. The designated biologist(s) shall keep a copy of any Biological Opinion issued for the project in their possession when on site.

**Mitigation Measure BIO-5: Designated Biologist Authority**
The designated biologist(s) shall be given the authority to freely communicate verbally, by telephone, by electronic mail, or in writing at any time with construction personnel, any other person(s) at the project site or otherwise associated with the project, the USFWS, or their designated agents. The designated biologist shall have oversight over implementation of the avoidance and minimization measures and all permit conditions and shall have the authority and responsibility to stop project activities if they determine any of the associated permit requirements are not being fulfilled. If the designated biologist(s) exercises this authority, the USFWS shall be notified by telephone and electronic mail within 24 hours.

**Mitigation Measure BIO-6: On-site Construction Monitoring**
The designated biologist shall be present at the project site until all initial habitat disturbances have been completed. After habitat disturbance has been completed and all exclusion fencing has been installed, a biological monitor, who will be trained by the designated biologist, shall monitor daily on-site compliance with all avoidance and minimization measures (AMMs) defined in the U.S. Fish and Wildlife Service Biological Opinion. The biological monitor shall contact the designated biologist for instructions should any CRLF be observed on the site. The biological monitor and the designated biologist shall have the authority to halt any action that could adversely affect sensitive biological resources. The designated biologist shall continue to

conduct compliance checks at least once per week until construction is completed to ensure that the fencing is intact and that all AMMs are being implemented.

**Mitigation Measure BIO-7: California Red-legged Frog Pre-construction Survey**
No more than 24 hours prior to the date of initial ground disturbance, a pre-construction survey for California red-legged frog shall be conducted by a designated biologist at the project site.

The survey shall consist of walking the project limits and within the project site to ascertain the possible presence of California red-legged frog. The designated biologist shall investigate all potential areas that could be used by the species for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as for California ground squirrels or gophers.

If any California red-legged frogs are found, the designated biologist shall follow the procedures specified in Mitigation Measure BIO-13.

**Mitigation Measure BIO-8: Timing Construction Commencement to Avoid California Red-legged Frog**
Initial ground-disturbing activities shall be avoided between November 1 and March 31 to avoid the time period when California red-legged frogs are most likely to be moving through the project area.

**Mitigation Measure BIO-9: Avoid Construction During Rain Events**
No ground-disturbing construction activities shall occur during rain events or within 24 hours following a rain event. Prior to ground-disturbing construction activities resuming, a designated biologist shall inspect the project area and all equipment/materials for the presence of California red-legged frogs.

**Mitigation Measure BIO-10: Cover Trenches**
Trenches or pits 1 foot or deeper that are going to be left unfilled overnight shall be securely covered with boards or other material to prevent California red-legged frog or other special-status species from falling into them. If covering of trenches or pits is not feasible, wooden ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are to be placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter shall be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog or other special-status species. The biological monitor shall inspect the trenches, pits, or holes prior to their being filled to ensure there are no trapped wildlife in them. The trench, pit, or hole shall also be examined by the biological monitor each workday morning prior to initiation of work and in the late afternoon no more than 1 hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the biological monitor shall contact the designated biologist, who shall remove and transport the animal to a safe location or contact the USFWS for guidance.

**Mitigation Measure BIO-11: Erosion Control Material**
Plastic monofilament netting (i.e., erosion control matting), loosely woven netting, or similar material in any form shall not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site shall be immediately removed by the designated biologist or construction personnel. Materials utilizing fixed weaves (i.e., strands cannot move), polypropylene, polymer, or other synthetic materials shall not be used.

**Mitigation Measure BIO-12: Waste Management**
Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the California red-legged frog and other wildlife. A litter control program shall be instituted at the project site. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the project site at the end of each working day.

**Mitigation Measure BIO-13: Procedures for Encounters with California Red-legged Frog**
Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below.

When a California red-legged frog is encountered in the project area, all activities that have the potential to result in the harassment, injury, or death of the individual shall be immediately halted. The designated biologist will then assess the situation in order to select a course of action that shall avoid or minimize adverse effects to the animal. Contact with the animal shall be avoided and the applicant shall allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location and is actively dispersing. It does not apply to animals that are uncovered or otherwise exposed or in areas where the individual is not expected to move on its own and may be in danger (e.g., within the fenced construction perimeter).

California red-legged frogs that are in danger (e.g., animals that are uncovered or otherwise exposed or in areas within the fences construction perimeter where the individual is not expected to move on its own) shall be relocated and released by the designated biologist outside the construction area within the same habitat. Prior to the initial ground disturbance, the designated biologist shall obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is encountered and needs to be moved away from the project site. California red-legged frog shall be released in appropriate habitat nearby on the watershed. The designated biologist shall limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. The applicant shall immediately notify the USFWS once the California red-legged frog is relocated and the site is secure.

**Mitigation Measure BIO-14: Avoidance of Nesting Birds**
All tree removal activities shall be avoided between February 1 and August 15 to avoid the time period when birds are most likely to be nesting, to the extent feasible. Prior to any construction activities during the bird nesting season (February 1 to August 15), a pre-activity nesting bird survey shall be conducted no more than 7 days prior to tree removal and start of construction activities. The survey shall include all areas within 500 feet of active construction. If active nests of special status or migratory bird species (listed in the MBTA) are found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and is based on the nest location, topography, cover, and species' tolerance to disturbance. A standard buffer of 500 feet shall be used for raptors and special-status birds and 200 feet for migratory birds. If the standard avoidance buffer is not achievable, a reduced buffer may be allowed under the direction of a qualified biologist and the qualified biologist will monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in any nest disturbance, work should cease immediately in the vicinity of the nest and will not be allowed to recommence in the area until the young have fledged the nest.

If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by the qualified biologist, would be necessary.

**Mitigation Measure BIO-15: American Badger Protection**
Prior to ground-disturbing activities, a qualified biologist shall conduct a pre-construction survey of the project area to determine if new badger burrows have been constructed and/or if older (remnant) burrows appear to be re-occupied. These surveys will be conducted no less than 14 days and no more than 30 days prior to the start of ground disturbing activities. If burrows are occupied, the biologist will establish a 100-foot avoidance buffer around occupied maternity dens throughout the pup-rearing season (February 15 through July 1) and a 50-foot avoidance buffer around occupied dens during other times of the year.

### 3.2.5 Cultural Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **5. CULTURAL RESOURCES. Would the project:** | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5? | ☐ | ☐ | ☒ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? | ☐ | ☒ | ☐ | ☐ |
| c) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Setting

The project site was reviewed for the presence of both pre-contact and historic-era archaeological resources. The discussion below describes the methods and results of both project reviews.

**Literature Review and Records Search**

An archaeological study was completed for the project site in October 2023 (Evans & de Shazo, Inc. 2023). The proposed project would receive project-based vouchers from the County of Marin using federal funds provided by the HUD and is subject to the HUD environmental review procedures found in 24 CFR Part 58, which require compliance with NEPA and Section 106 of the NHPA, and its implementing regulations found at 36 CFR Part 800. The archaeological study included the following:

- A records search and literature review at the Northwest Information Center (NWIC) of the California Historical Resources Information System
- A search of the Native American Sacred Lands file inventory
- Tribal outreach, including consultation with the Federated Indians of Graton Rancheria (FIGR) – the federally recognized tribe with ancestral territory in Marin County
- Review of geoarchaeological reports and geologic and soils data to determine the potential/sensitivity for precontact period archaeological resources within the project area
- A pedestrian survey that was completed with a FIGR tribal monitor

A record search was conducted at the NWIC on August 10, 2023 (NWIC File No. 23-0221). The record search included a review of previous cultural resource studies and primary resource records pertaining to the project area and within 0.5 mile of the project site as well as additional documentation of listed or eligible cultural resources located in the vicinity, including the following:

- Office of Historic Preservation (OHP) Built Environment Resource Directory (BERD) for Marin County, California (OHP 2020)
- OHP Archaeological Resources Directory for Marin County, California (OHP 2012)
- California Inventory of Historic Resources (CIHR) (California Department of Parks and Recreation 1976)
- California Historical Landmarks (CHL) by County (OHP n.d.)
- California Points Resources (OHP n.d.)
- Five Views: An Ethnic Sites Survey for California (OHP 1988)

The NWIC found one previously recorded cultural resource within the project area (P-21-000684), one historic district adjacent the project area (P-21-002919), and eight others within 0.5 mile of the project area.

***P-21-000684 (Historic-Period Refuse Scatter)***

This site includes a historic-period refuse scatter located south of Commodore Webster Drive and east of the main entrance gate, in the southwestern portion of the project area. Historic-period artifacts were observed during the field survey in disturbed soils around two of the three tanks on site, including items such as bottle glass, white earthenware ceramic sherds, and a railroad spike. The artifacts appeared to date to the 1900s and are thought to have been deposited when the tanks were originally installed in the early to mid-1970s. The NRHP and CRHR eligibility of the resource is currently unknown; however, it is assumed that the resource would not be eligible for listing.

***P-21-0002919 (Historic Ranch District)***

This resource is the Olema Valley/Lagunitas Loop Ranches Historic District (aka, Olema Valley Dairy Ranches Historic District), a large discontinuous district comprised of 19 historic-period dairy ranches encompassing approximately 14,127 acres. The historic district was previously determined eligible for listing on the NRHP under Criterion A, in the area of Agricultural and Commerce at the local level of significance, and under Criterion C for Architecture at the local level of significance (Schultz and Davis 2017; Miller and Caywood 2008). The district represents an intact collection of early dairy ranches in California that propelled Marin County to the forefront of butter and cheese production by the 1870s. The period of significance extends from 1856, when the first dairy in Olema Valley was established, to 1958, when the last extant dairy ranch was converted to a Grade A dairy (Schultz and Davis 2017; Miller and Caywood 2008). The map provided in the National Register Nomination Forms prepared by Schultz and Davis (2017) shows the project area adjacent and north of the Genazzi Ranch, one of the historic Olema Valley/Lagunitas Loop Ranches.

**Archaeological Resource Field Survey**

A pedestrian field survey was completed by EDS on September 5, 2023. One previously recorded historic-period resource (P-21-000684) was located in the western portion of the project site, and a previously unrecorded 2,300-foot-long section of the North Pacific Coast Railroad alignment (P-21-000487; described below) was identified within the project area. In addition,

four historic-period artifacts were documented during the field survey (A1, A2, A3, and A4; described below).

***P-21-000487 (North Pacific Coast Railroad***

Resource P-21-000487 consists of remnants of the North Pacific Coast/Northwestern Pacific Railroad, including grades, berms, trestles, tunnels, and artifacts (i.e., railroad ties), located on the project site. The resource traverses the project area following the present-day alignment of Commodore Webster Drive; however, other than the alignment identified through archival research, no physical evidence of the resource was identified during the field survey. Previously identified segments in Marin County have been recommended ineligible for the NRHP and the CRHR due to lack of integrity as all the rail lines were removed in the 1930s and many of the associated structures have been destroyed or are in extreme disrepair. The railroad alignment within the project area does not retain sufficient integrity of design, materials, workmanship, feeling, or association to be considered eligible for the NRHP or the CRHR, individually or as a contributing element to the Olema Valley/Lagunitas Loop Ranches Historic District (P-21-002919). Accordingly, the resource was determined to be ineligible for the NRHP and CRHR due to lack of integrity.

***Historic-Period Artifacts***

The four historic period artifacts recorded within the project site include the following:

- A1: a blue glazed ceramic fragment measuring 1.9 inches wide by 1.6 inches long and 0.4 inches thick
- A2: an undecorated white ceramic cup fragment measuring 1.9 inches wide by 1.9 inches long and 0.7 inches thick
- A3: saw-cut animal long bone measuring 1.7 inches wide by 1.9 inches long and 0.1 inches thick
- A4: saw-cut animal rib bone measuring 4.5 inches long by 2 inches wide and 0.7 inches thick.

Artifacts A1, A2, and A3 were observed on the surface in the western portion of the project area outside of the proposed disturbance area. The artifacts are located approximately 75 feet north of the previously recorded historic-period refuse scatter (P-21-000684; described above). Artifact A4 was observed in the northern portion of the project area and outside of the area of disturbance. All four historic period artifacts were left in place(Evans, Shazo, and Inc 2023).

***Pre-Contact Archaeological Resources***

No pre-contact period archaeological resources were observed within the project area (Evans, Shazo, and Inc 2023).

**USCG Point Reyes Station**

A historic resource evaluation was conducted to evaluate the potential for built environment structures of historical significance to occur within the project area of potential effect (APE) (see Appendix D). The existing structures on the project site, including 23 individual buildings, structures, and features, were evaluated for historical significance due to the age of the

structures. The existing USCG structures were determined to be ineligible for NRHP and CRHR (Groundwork Planning & Preservation 2023).

**Archaeological Resource Sensitivity**

The project site contains both native and non-native (fill) soils. The portion of the project site that contains Holocene-age alluvium, including the previously developed area where most of the ground disturbance will take place, has a high potential/sensitivity for buried pre-contact period archaeological resources. The proposed wastewater treatment system in the western portion of the project area and the portion of Commodore Webster Drive west of the developed area are located on a landform consisting of Pleistocene age alluvium, which has a low potential/sensitivity for buried pre-contact period archaeological resources.

### Discussion

**a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?**

None of the existing structures on the project site, including 23 individual buildings, structures, and features, are eligible for listing under the NRHP or CRHR. Two resources, P-21-000684 and P-21-000487, also occur within the project site as do four historic-period isolates. P-21-000487 and the four historic-period isolates are not eligible for listing on the CRHR or NRHP, and the isolates are located in the western portion of the site in an area that would not be disturbed or developed by the project.

The NRHP/CRHR eligibility of P-21-000684 is currently unknown; however, the resource is in an area that would be avoided by the project, and the project would therefore not impact the significance of the resource. The project is also within 0.5 mile of the Olema Valley/Lagunitas Loop Historic District. The project site is not within the viewshed of the historic district and would have no effect on the significance of the historic district. Because the structures and buildings that would be renovated or demolished as part of the project are not eligible for listing on the CRHR, and because the remaining historic-period resources on the site are not within the area of project disturbance/effect, the project would not result in a change in the significance of any historical resources pursuant to 14 CCR section 15064.5, and no impact would occur.

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

Based on the results of the background research and pedestrian survey, there are no intact pre-contact archaeological resources in the project area; however, there is a potential for unidentified buried archaeological resources to occur on-site due to the presence of native (i.e., non-fill) soils and previously identified resources in the area. In the event that archaeological resources are uncovered during project-related ground disturbing activities, compliance with Marin Development Code section 22.20.040.E is required. In compliance with the Marin Development Code Section 22.20.040.E, if archaeological materials are discovered during

construction, construction activities shall cease, and the remains shall be recorded by a qualified archaeologist and treated according to state law. While the Marin Development Code provides protection for archaeological resources, the code does not specify any buffer distance from the resource within which work shall halt, and without proper investigation of the resource by an archaeologist and/or appropriate Native Americans, if appropriate, the resource could be damaged due to work in the vicinity of the find. The damage to a resource prior to proper investigation or improper handling of the resource would be a significant impact. For this reason, treatment of discovered archaeological sites during construction pursuant to Marin Development Code Section 22.20.040.E could still result in significant impacts to archaeological resources within this portion of the project area. Mitigation Measure CUL-1 requires preparation of an archeological monitoring plan and defines specific requirements for monitoring and cessation of work in proximity of a find. The impact on pre-contact archaeological resources would be less than significant with mitigation.

**c) Would the Project disturb any human remains, including those interred outside of formal cemeteries?**

Both prehistoric and historic archaeological resources may contain human burials. Based on the background research and field surveys, there is no indication that the project area has been used for human burial purposes. The project includes excavation into undisturbed soils and could encounter human remains, including internment outside of formal cemeteries. Compliance with Marin Development Code Section 22.20.040.E, PRC section 5097.98, and Health and Safety Code section 7050.5 (outlined above in Section 4.6.2.3 Local Regulations) would require that work be stopped in the vicinity of any discovered human remains and that the County coroner be notified of the finds. The coroner would determine the nature of the remains and contact the NAHC if the remains are of Native American ancestry. In turn, the NAHC would contact the most likely descendent of remains, who would assess the finds and work with the County to determine final treatment and disposition of the remains. PRC section 5097.98 and Health and Safety Code section 7050.5 are also applicable to any discovery of human remains. Compliance with State and County requirements to address any discovery of human burials during construction would avoid disturbance of any human remains. The impact on human remains would be less than significant.

### Mitigation Measures

**Mitigation Measure CUL-1: Archaeological Monitoring Plan (AMP) and Archaeological Monitoring:**
A Secretary of Interior-qualified archaeologist shall prepare an Archaeological Monitoring Plan (AMP) that includes a provision for worker Cultural Resources Awareness Training (CRAT) as well as details regarding the archaeological sensitivity of the project area, the types of archaeological resources that could be encountered, the methodology and protocols to be employed during monitoring, and specific procedures to identify, evaluate, and treat new archaeological discoveries and for addressing specific contingencies, such as the discovery of human remains, project personnel qualifications, data collection protocols, site safety

considerations, and post-field actions. The archaeologist preparing the AMP shall contact the Federated Indians of Graton Rancheria (FIGR) and provide them an opportunity to review and comment on the AMP prior to its finalization.

A professional archeologist shall provide sensitivity training to supervisory staff prior to initiation of site preparation and/or construction to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of precontact or historic-period objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and procedures for protection and notification. An "alert sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic-period and/or precontact archaeological resources.

A qualified archaeologist shall monitor all ground-disturbing activities that take place within native (i.e., non-fill) soils. If an archaeological deposit is encountered during ground-disturbing activities, all work within 50 feet of the discovery shall be halted until a Secretary of Interior qualified archaeologist and FIGR (in the case of precontact-period resources) inspects the material, assesses its historical significance, and provides recommendations for the treatment of the discovery in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 86). Potentially significant historic-era resources may include all by-products of human land use greater than 50 years of age, including subsurface deposits of domestic type material (e.g., glass, ceramic, metal, wood, faunal remains, brick), buried alignments of stone, brick, or foundation elements, and possible features associated with the former railroad, open workspaces, or yard spaces. Potentially significant precontact period resources include midden soils, artifacts such as faunal bone, groundstone, fire-affected rock, baked clay, modified bone and/or shell, flake stone debitage, flake stone tools, etc., and features such as house floors, cooking pits, deliberately interred burials.

If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:

- Eligible for the CRHR (and a historical resource for purposes of CEQA); or
- A unique archaeological resource as defined by CEQA.

If the resource meets the criteria for eligibility on the CHRH or is a unique archaeological resource, work shall remain halted, and the cultural resources specialist/archaeologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines section 15064.5(b).

Avoidance of the area, or avoidance of impacts to the resource, is the preferred method of mitigation for impacts to cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection,

recordation, and analysis of any significant cultural materials in accordance with the AMP. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System.

Work may commence within the vicinity of the discovery upon completion of evaluation, collection, recordation, and analysis as approved by the qualified archeologist.

### 3.2.6 Energy

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **6. ENERGY. Would the project:** | | | | |
| a) Result in a 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

**Marin County Unincorporated Area Climate Action Plan 2030**

In 2018, the County Community Development Agency began a two-year planning process called Drawdown: Marin that engaged residents, businesses, and subject matter experts in a comprehensive, science-based county-wide campaign to identify actions that would dramatically reduce GHG emissions, address equity, and increase community resilience. Drawdown: Marin identified 29 climate change solutions in six focus areas: Renewable Energy, Transportation, Buildings and Infrastructure, Local Food and Food Waste, Carbon Sequestration, and Climate Resilient Communities. These solutions, along with strategies for addressing equity, community empowerment, and countywide collaboration on climate change, were published in the final *Drawdown: Marin Strategic Plan* in December 2020 (County of Marin 2020a), which was incorporated into the *Marin County Unincorporated Area Climate Action Plan 2030* (County of Marin 2020b). In 2022, Drawdown: Marin became the non-profit organization MarinCAN (County of Marin n.d.). The goals of the CAP are to 1) reduce emissions to 60 percent below 2005 levels by 2030 (equivalent to 53% below 1990 levels) and 2) draw down GHG emissions to below zero by 2045. The following CAP policies are relevant to the project.

**RE-C2: GHG-Free Electricity**

Encourage residents and businesses to switch to 100% renewable electricity (MCE Deep Green, MCE Local Sol, and PG&E Solar Choice) through engagement campaigns and partner agency incentives and work with MCE Clean Energy to assure that it reaches its goal to provide electricity that is 100% GHG-free by 2022.

**RE-C3: Building and Appliance Electrification**

Accelerate electrification of building systems and appliances that currently use natural gas, including heating systems, hot water heaters, stoves, ranges, and clothes dryers.

1. Explore opportunities to continue existing rebate programs, such as Electrify Marin.

2. Consider adopting an ordinance in 2024 that requires homeowners to replace natural gas appliances, such as water heaters, stoves, cooktops, clothes dryers, and heating systems with high efficiency electric appliances at time of replacement where feasible. Evaluate the financial impact on households at different income levels and consider offering rebates or subsidies, in partnership with electricity providers if available, for disproportionately impacted households.

### Discussion

**a) Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?**

**Construction**

The construction equipment and vehicles that would be used during construction of the proposed project would consume energy via combustion of petroleum products, including gas, diesel, and motor oil. Consumption of energy during construction would be temporary, lasting approximately 12 to 24 months. Indirect energy use would be required to make the materials and components used in construction. Indirect energy use includes energy used for extraction of raw materials, manufacturing, and transportation associated with manufacturing. Fuel use would be consistent with typical construction and manufacturing practices and would not require excessive or wasteful use of energy. Construction activities would be temporary and would require limited amounts of energy. Energy use for construction would not be wasteful, inefficient, or unnecessary as economics would lead the contractor to minimize the use of energy during construction. Impacts from energy use during construction would be less than significant.

**Operation/Occupancy**

The project would consist of 54 affordable housing units within the 12 existing buildings. The proposed residential units would be all electric, and no gas appliances are proposed, which is consistent with CAP Policy RE-C3. The conversion of the project to all-electric use would require upgrades to the electrical infrastructure. Existing underground PG&E powerlines connecting to each building would remain. However, existing electrical metering panels would be replaced with a new exterior residential multi-meter panel. In addition, the three existing PG&E in-ground transformer vaults within the project site would be upgraded to accommodate the all-electric load.

New solar panels would be installed on all buildings, and two ground-mounted solar arrays are proposed along the east side of Commodore Webster Drive and on the hillside west of Buildings 101, 102, and 103. The proposed 558,000 kWh solar photovoltaic (PV) system has been sized to offset 100 percent of the projected energy consumption of the project, including all

electric residences, the resident services building, a wastewater treatment plant, and EV charging loads. An 80 kW BESS and backup diesel generator are also proposed. A microgrid consisting of a portion of the PV system, a BESS, a generator, and the related electrical infrastructure would provide power to Building 1 and the wastewater treatment plant. The rooftop solar and BESS is consistent with CAP Policy RE-C2, which encourages new development to transition to 100 percent renewable energy. The microgrid would allow Building 1 to serve as a neighborhood-level resilience center to provide shelter and resources during climate and other emergencies. While there would remain emergency backup generators at the site, the generators would only operate under emergency conditions when power is not available via either PG&E power lines or the on-site solar and BESS and would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The proposed features would improve energy reliability and efficiency on site and would be consistent with the goals and policies of the CAP. Therefore, the project would not require inefficient or wasteful use of energy. Impacts would be less than significant.

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

Refer to response a), above. The project would convert the existing residential units from natural gas supply to electric, which is consistent with CAP Policy RE-C3. The conversion of residential units from natural gas supply to electric supply also complies with the California Air Resources Board (CARB) requirement that new homes include all electric furnaces, stoves, and other appliances by 2026 to help reduce the state's carbon footprint and improve air quality (CARB n.d.). The project would include solar and BESS, which helps the project meet renewable energy adoption goals (CAP Policy RE-C2). The use of solar and BESS energy supply qualifies for the California Electric Homes Program (AB 137), which provides incentives for the construction of all-electric market-rate residential buildings and installation of energy storage systems to encourage deployment of near-zero-emission building technologies (California Energy Commission (CEC) 2022).

In addition, the proposed project would comply with California Building Code Title 24 energy efficiency standards. Electrical power would be provided by PG&E, who is required to meet requirements for compliance with California's Renewables Portfolio Standard (RPS). Because the proposed project would install renewable energy, it would not conflict with or obstruct the State plan for renewable energy and would follow state requirements for energy efficiency. The impact from conflict with a state or local plan for renewable energy or energy efficiency would be less than significant.

### Mitigation Measures

None required.

### 3.2.7 Geology and Soils

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **7. GEOLOGY AND SOILS. Would the project:** | | | | |
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. | ☐ | ☐ | ☐ | ☒ |
| ii) Strong seismic ground shaking? | ☐ | ☒ | ☐ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ |
| iv) Landslides? | ☐ | ☐ | ☒ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ |
| c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and, potentially, result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ☒ | ☐ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? | ☐ | ☐ | ☒ | ☐ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☒ | ☐ |
| f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Setting

A geotechnical investigation was prepared for the project in 2022 (Rockridge Geotechnical 2022), which is enclosed in Appendix E. The geotechnical investigation included subsurface testing by drilling four test borings, performing laboratory testing on selected soil samples, and

performing engineering analyses to develop conclusions and recommendations. Below are the findings of the geotechnical investigation:

**Test Borings**
Subsurface conditions at the site were explored by drilling four test borings. The borings were drilled at a depth of 21.5 feet *below ground surface* (bgs) using a limited-access drill rig equipped with 4-inch-diameter solid-stem flight augers. During drilling, the field engineer logged the soil encountered and obtained representative samples for visual classification and laboratory testing.

**Laboratory Testing**
The soil and bedrock samples were obtained from the borings to confirm the field classifications and selected representative samples for laboratory testing. Soil samples were tested by Construction Materials Testing, Inc. of Livermore, California, to measure moisture content, dry density, Atterberg limits, particles passing the No. 200 sieve, and *resistance value* (R-value). Soil samples were also tested by Project X Corrosion Engineering of Murrieta, California, to measure corrosivity potential. The results of the laboratory tests are presented on the boring logs in the geotechnical investigation (Rockridge Geotechnical 2022).

**Geologic Units**
The project site lies within the Coast Ranges Geomorphic Province, which extends approximately 550 miles in a northwest to southeast direction along the coast of California. The Coast Ranges comprise a series of northwest to southeast trending ridges and narrow valleys, whose orientations are controlled by the fault-dominated geologic structure of the region. Point Reyes Station and the project site are located with the Lagunitas Creek Valley, which drains into Tomales Bay to the north. Point Reyes Station is bounded by quaternary alluvium deposits to the west and cretaceous sandstone and shale of the Bolinas Ridge to the east and is underlain by older Quaternary alluvium (Essel Environmental Engineering & Consulting 2021).

The project site is underlain by older Quaternary alluvial deposits that are present over a significant proportion of Point Reyes Station. These deposits consist of poorly sorted coarse sand and gravel, and moderately sorted fine sand, silt, and clay, and have a specific yield of 8 to 17 percent. The project site is located near the southern edge of Point Reyes Station and is at an approximate elevation of 31 feet above mean sea level and surface topography in the area of the site slopes downward toward the southwest (Essel Environmental Engineering & Consulting 2021).

**Seismicity**
The proposed project is located within a seismically active region. The San Andres Fault, which is the largest and potentially destructive fault in the state, is located approximately 0.8 mile southwest of the project site (Figure 3.2-1). According to the Marin Countywide Plan, the project site is located within Soil Type E, which is the soil type that is expected to have the strongest amplification from shaking. This soil type includes water-saturated mud and artificial soil (County of Marin 2007).

**Liquefaction**

Liquefaction is a phenomenon in which granular material is transformed from a solid state to a liquefied state as a consequence of increased pore-water pressure and reduced effective stress. Increased pore-water pressure is induced by the tendency of granular materials to densify when subjected to cyclic shear stresses associated with earthquakes.

Liquefaction potential varies significantly, and site-specific analysis is needed to accurately determine liquefaction potential in earthquake-prone areas. According to the Marin Countywide Plan, the project site is located within an area designated as very high for susceptibility for liquefaction (County of Marin 2007; Figure 3.2-2). The site-specific geotechnical investigation determined that the potential for liquefaction and ground failures associated with liquefaction, including lateral spreading, to occur at the site during a seismic event is low due to the high relative density and/or cohesion of the soil below the design groundwater level (County of Marin 2007).

**Landslides**

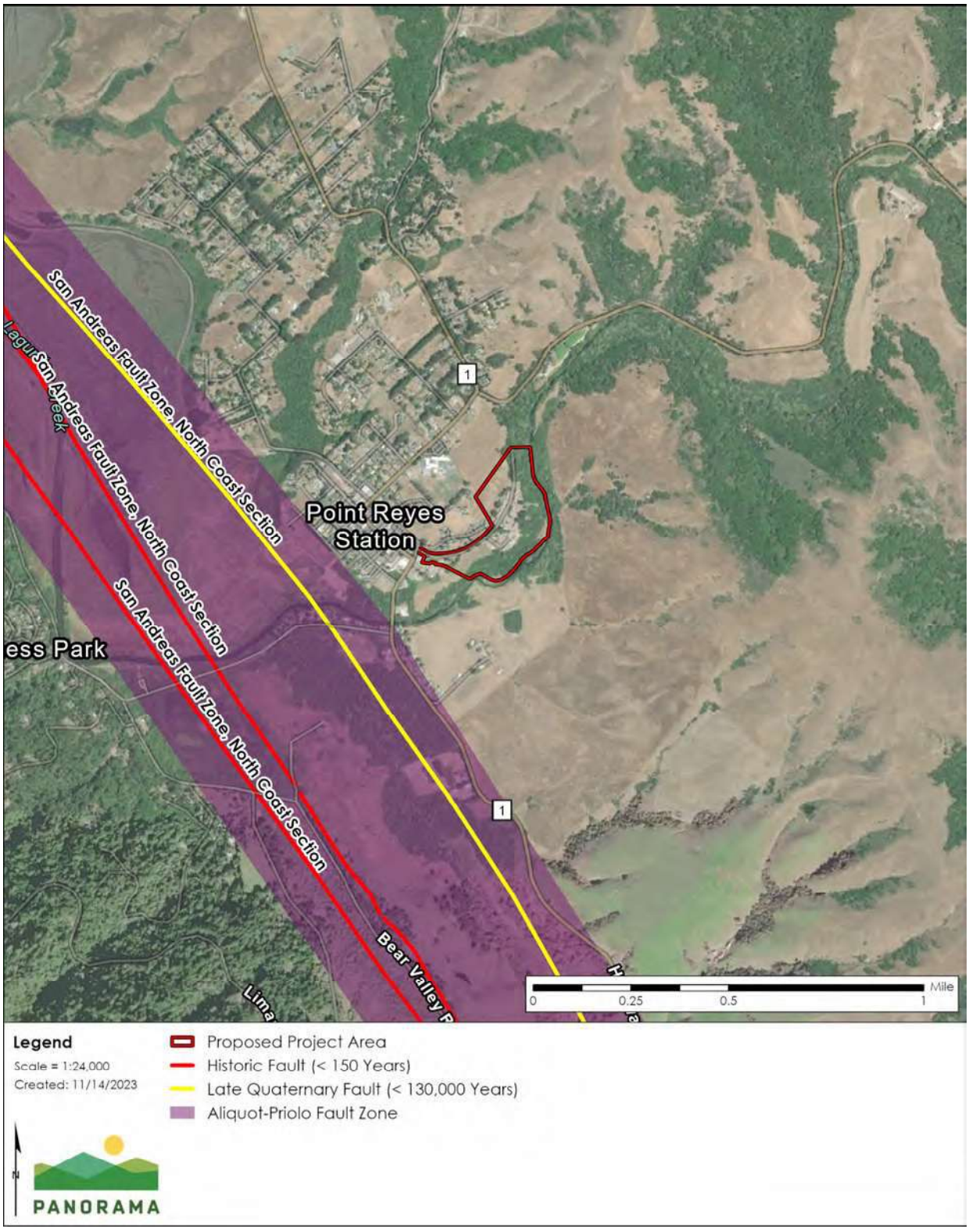
Seismically induced landslides may be triggered by both natural and human-induced changes to the environment, which can create slope instability. The risk of landslide hazard is greatest in areas with steep, unstable slopes. Slopes within the project area range from 2 percent to 7 percent and is gently sloping to the southeast. According to the Marin Countywide Plan, the project site is located within an area designated as few landslides, which means there is a low potential for landslides including seismically induced landslides (County of Marin 2007).

**Soils**

A total of five distinct soil units are mapped within the project area. Table 3.2-7 provides information on the soil types found on the project site. The soil types are well drained or somewhat excessively drained apart from one soil unit, the Xerorthents-Rock outcrop complex, which is considered excessively drained. The majority of the project is located within soil unit 203 Xerorthents fill, which does not have a hydric soil rating (Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture, n.d.).

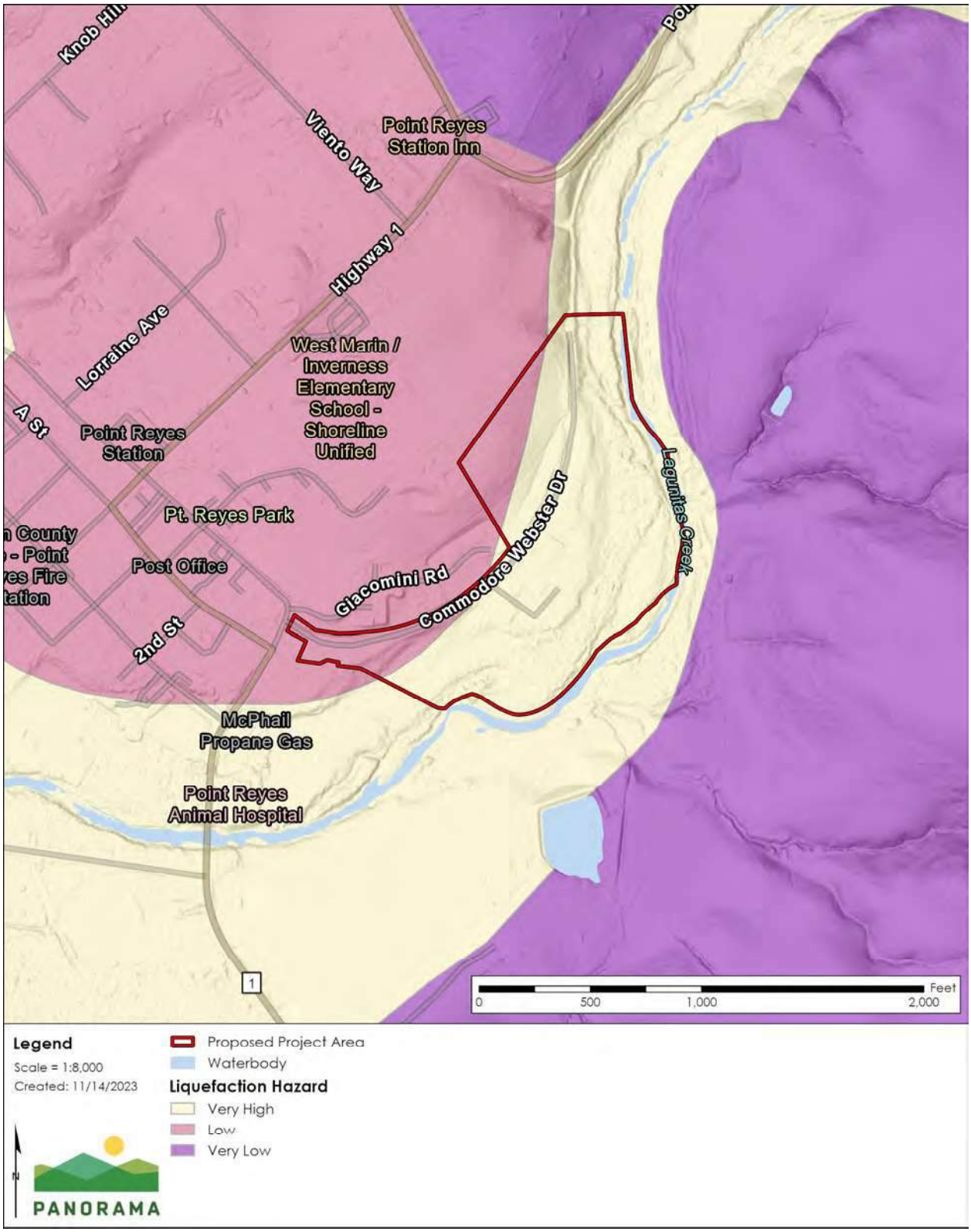
The native soil encountered in the borings consisted of medium dense to dense clayey sand with varying gravel content, dense clayey gravel with sand, dense sand, and hard sandy clay with gravel. Below the native soil, the borings found either residual soil (i.e., decomposed bedrock) consisting of very stiff to hard sandy clay or deeply to completely weathered Franciscan mélange bedrock (Rockridge Geotechnical 2022). All clays are susceptible to some shrinkage and swelling due to changes in moisture content.

**Figure 3.2-1 Fault Zones**




*Source: (Maxar, 2021; Siegal & Strain Architects, 2023; California Department of Conservation: California Geological Survey, 2005; California Geological Survey, 2012)*

**Figure 3.2-2 Liquefaction Hazard**




*Source: (USGS, 2012; ESRI, 2011; Carl M. Wentworth, Robert S. Nicholson, Heather M. Wright, and Katherine M. Brown, 2023)*

**Table 3.2-7 Mapped Soil Units in the Study Area**

| Map unit symbol | Soil unit | Acres | Percent of project area | Hydric rating | Drainage class |
|---|---|---|---|---|---|
| 105 | Blucher-Cole complex, 2 to 5 percent slopes | 1.1 | 3.3% | C/D | Somewhat poorly drained |
| 114 | Cortina gravelly sandy loam, 0 to 6 percent slopes, cool, MLRA 15 | 17.0 | 51.8% | A | Somewhat excessively drained |
| 148 | Olompali loam, 2 to 9 percent slopes | 1.7 | 5.2% | D | Somewhat poorly drained |
| 161 | Saurin-Bonnydoon complex, 2 to 15 percent slopes | 1.2 | 3.5% | C | Well drained |
| 203 | Xerorthents, fill | 11.8 | 36.1% | N/A | N/A |

*Source: (NRCS Staff, n.d.)*

**Paleontology**

Most of the project site is underlain by late Holocene-age (<4,200 years ago) alluvium (Qhy), which is a depositional landform has the capability of burying former land surfaces during alluvial and fluvial events (e.g., episodic flooding) in the Holocene geologic time period (>11,700 years ago). Holocene age alluvium is too young to support fossils. However, the remaining portions of the project site are underlain by Pleistocene-age alluvium (Qpa) and marine terrace deposits (Qt), which have the potential to support paleontological resources. Paleontological records at the U.C. Museum of Paleontology include 15 specimens of invertebrates associated with marine environments from similar geologic units in the Point Reyes area (U.C. Museum of Paleontology, n.d.).

## Discussion

**a) Would the Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:**

**i) Rupture of a known earthquake fault, as delineated on the most recent Alquist–Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?**

The project site is not located on an Alquist-Priolo earthquake fault. The project is in proximity to the San Andreas fault, but the fault does not underlie the site. Therefore, rupture of an earthquake fault would not affect the project site. No impact would occur from rupture of an earthquake fault.

**ii) Strong seismic shaking?**

**Construction**
The proposed project is located immediately adjacent the San Andres Fault (County of Marin 2007). The project area could experience very strong intensity ground shaking during a large earthquake. Severe ground shaking resulting from earthquakes has the potential to cause injury to construction workers during construction. However, given the relatively short construction period (1 to 24 months), the potential for strong seismic shaking during the construction period is considered low. Precautionary measures including adherence to state-mandated safety standards, including federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR section 1910.120) and California OSHA regulations (8 CCR Title 8 section 5192) during construction would minimize hazards to construction workers associated with strong seismic ground shaking.

**Operation/Occupancy**
As discussed above, because of proximity to the San Andreas Fault, the project has the potential to experience very strong ground shaking during an earthquake. The project would reintroduce human occupancy to the project site through development of the proposed affordable housing units. The residential units/upgrades would need to comply with current California Building Code (CBC) requirements and standard industry practices, including geotechnical requirements for residential buildings. In addition, the geotechnical investigation includes site-specific recommendations for site preparation and grading, foundation design, pavement design, seismic design, and other geotechnical aspects of the project (Rockridge Geotechnical 2022). Because of the potential for strong seismic shaking of the life of the project, there is a potential for substantial adverse effects from occupancy of the site should the geotechnical recommendations not be properly implemented in the final design. Mitigation Measure GEO-1 requires implementation of the geotechnical recommendations in the final design to avoid significant impacts from strong seismic ground shaking. With implementation of mitigation measure GEO-1 and compliance with the current CBC requirements, the impacts of strong seismic ground shaking would be less than significant with mitigation.

**iii) Seismic-related ground failure, including liquefaction?**

The project site is located within an area designated as very high susceptibility for liquefaction (County of Marin 2007). However, analysis in the geotechnical investigation determined that the potential for liquefaction and ground failures associated with liquefaction, including lateral spreading, to occur at the site during a seismic event is low due to the high relative density and/or cohesion of the soil below the design groundwater level (Rockridge Geotechnical 2022).

In addition, the proposed improvements would be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades. Continuous footings would be at least 16 inches wide, and isolated footings would be at least 18 inches wide. If unsuitable bearing material is encountered at the bottom of footing excavations,

as determined by the field engineer, the unsuitable material would be removed until competent bearing soil is reached.

The residential units would also comply with current CBC requirements. Because of the low potential for liquefaction at the site based on geotechnical evaluation, and because of the use of spread footing foundations for the residential buildings, as well as current CBC requirements, the impact from liquefaction would be less than significant.

**iv) Landslides?**

The project site is located within a gently sloping area designated as "few landslides," which means there is a low potential for landslides (County of Marin 2007). The project site is in an urbanized area and currently supports existing residential buildings. Landslides are not expected on the project site due to the flat terrain (absence of steep slopes); therefore, impacts from landslides would be less than significant.

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

The majority of the project facilities are located within existing developed areas, and disturbance to topsoil would be limited. Development of the project would require minor vegetation removal, including removal of 37 trees, which could cause some erosion and loss of topsoil. Excavation and grading activities to construct the new wastewater treatment system, solar array, and bioretention areas could also result in a temporary increase in erosion. It is anticipated that the majority of the existing native soil and bedrock would be used as engineered fill on site, and the area of grading and excavation would occur primarily in existing developed areas that do not contain native topsoil. Table 3.2-8 provides the estimated grading quantities for the proposed project.

**Table 3.2-8 Estimated Grading Quantities**

| Structure/area | Fill volume (cu. yd.) | Cut volume (cu. yd.) | Net volume (cu. yd,) |
|---|---|---|---|
| Rain garden 2 and 3 | 4 | 171 | -167 |
| Outdoor classroom | 112 | - | 112 |
| Middle parking lot | 80 | 29 | 51 |
| New sidewalks (near building 100A and 201) | 170 | nil | 170 |
| Community garden | 60 | nil | 60 |
| Total | **426** | **200** | **226** |

Soil erosion and topsoil loss would also be limited by implementing standard construction practices and *best management practices* (BMPs) for erosion and sediment control. The project would be required to obtain coverage under the Construction General Permit (Order 2022-0057-

DWQ) and prepare a Stormwater Pollution Prevention Plan (SWPPP) due to disturbance of more than 1 acre of land. The SWPPP would include erosion control measures that protect exposed slopes and drainage inlets. The SWPPP would contain soil stabilization and sediment control BMPs required to be implemented during construction. The new bioretention areas within the project site and additional trees and vegetation planted on the project site would provide long-term soil and erosion control on the site. Because erosion control BMPs would be implemented during construction and the project would implement new stormwater bioretention basins as well as landscaping to provide permanent erosion control, the impact from erosion or loss of topsoil would be less than significant.

**c) Would the Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and, potentially, result in on- or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?**

**Liquefaction and Lateral Spreading**

Lateral spreading is commonly associated with liquefaction, causing soil mass to move down slopes. As discussed under impact discussion a)(iii), the geotechnical investigation analyzed the liquefaction and lateral spreading potential of soil encountered below groundwater at the site using data collected at the test borings and determined that the potential for liquefaction and ground failures associated with liquefaction, including lateral spreading, to occur at the site during a seismic event is low due to the high relative density and/or cohesion of the soil below the design groundwater level (Rockridge Geotechnical 2022). Because the potential for liquefaction and lateral spreading would be low at the site, the project would not become unstable due to lateral spreading or liquefaction, and the impact from lateral spreading or liquefaction would be less than significant.

**Landslides**

Refer to impact discussion a)(iv), above, for more information on landslides. The project area is relatively flat and not prone to landslides. Impacts from landslides would be less than significant.

**Subsidence and Collapse**

Subsidence is the vertical displacement of the ground's surface caused by the extraction of large volumes of fluid (water or petroleum products) from deep in the ground or caused by the collapse of underground mines. Subsidence caused by groundwater withdrawal can occur in unconsolidated to semi-consolidated sediments containing confined or semi-confined sand and gravel aquifers inter-bedded with clay sediments.

NMWD obtains its water supply for the West Marin service area from two wells located on the nearby Gallagher Ranch and two wells located on the project site. The project would not install any new groundwater wells at the site. The geotechnical investigation analyzed the subsidence potential of soil encountered below groundwater at the site using data collected at the test borings. Analysis determined that the potential for subsidence is low due to the high relative density and/or cohesion of the soil below the design groundwater level (Rockridge Geotechnical

2022). Because the potential for subsidence at the site is low and the project would not require new groundwater wells, the project would not cause subsidence or become unstable due to subsidence, and impacts would be less than significant.

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

Expansive soils shrink and swell as a result of moisture changes and can cause heaving and cracking of flatwork and pavement. Expansive soils tend to be soils that contain clay minerals, such as montmorillonite.

Based on the results of the field investigation and test borings at the project site, the fill in the project area consisted of medium dense to dense clayey sand and very stiff to hard clay, with varying sand and gravel content. The fill appeared to be well compacted, and tests performed on two samples of the near-surface clay at depths of 1.5 and 4 feet bgs resulted in plasticity indices (PI) of 4 and 9, respectively, indicating the clay has a low expansion potential (Rockridge Geotechnical 2022). Accordingly, expansive soils are not expected to be found within the project site, and the impact from location on expansive soils would be less than significant.

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

Sewer service is not available in the project area. The project site currently contains below-ground tanks for limited on-site sewage collection and storage only. When the property was used for USCG housing, wastewater was collected and transported to an off-site facility for disposal on a daily basis.

The project is proposing to use an alternative wastewater system to treat wastewater at the site. Sherwood Design Engineers (SDE) prepared a *basis of design* (BOD) report to evaluate the proposed wastewater management approach for the project that would include the installation of a new enhanced wastewater treatment system to produce high-quality effluent that can be reused for landscape irrigation around the site (Sherwood Design Engineers 2022). The project would primarily use the treated wastewater as irrigation during the growing season and would also utilize new leach fields that would be used as a backup disposal system during periods of rainfall or when the irrigation system is being maintained.

The site has soils with an average percolation rate of greater than 5 minutes per inch, and Marin County septic regulations allow a minimum depth to groundwater of 3 feet for a conventional septic system with these soil characteristics (Questa Engineering Corp., 2023). The size of the system was determined in the BOD by analyzing *soil application rates* (SAR). Soils investigation of the site indicate a SAR of 0.4 gpd per square foot (gpd/sf) for the soils in the building area. A system sized to accommodate the maximum occupancy day flow of 10,000 gpd using a SAR of

0.4 gpd/sf would require 25,000 square feet. Given the ample landscaped area on the site, this approach is considered achievable. The vegetation plants within fields would be able to tolerate the level of soil saturation expected equivalent to 0.4 gpd/sf during the growing season. The leach field has been sized to accommodate 100 percent of the volume of the wastewater system, and the depth to groundwater is 6 to 8 feet bgs. The project has soils capable of adequately supporting the alternative wastewater disposal system where sewers are not available for the disposal of wastewater, and impacts would be less than significant.

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

Portions of the project site are underlain by *Pleistocene age alluvium* (Qpa) and *marine terrace* (Qt) deposits. The proposed wastewater treatment system in the western portion of the project site and the existing development is located within the recent Pleistocene age alluvium, which are not sensitive for paleontological resources due to the young age of the sediments. Construction activities such as grading, excavation, and ground-disturbing activities within Pleistocene age alluvium would not impact paleontological resources because the sediments are too young to contain produce fossils. There are no known paleontological resources or unique geologic features at the proposed project site; however, there are localities of paleontological specimens in the Point Reyes area in similar geologic units. The majority of the project site is currently developed, so the underlying soils were also previously disturbed in the developed areas during construction of the USCG housing. In addition, the depth of new grading and disturbance would be minimal (approximately 4 feet); however, there is a potential that paleontological resources could be encountered during excavation. Marin Development Code section 22.20.040.E requires that construction activities to cease if a paleontological resources is discovered during construction, the County shall be notified so that the extent and location of discovered materials may be recorded and disposition may occur in compliance with State and federal law. Because the project would comply with Marin Development Code including Section 22.20.040.E, the impact on paleontological resources would be less than significant.

### Mitigation Measures

**Mitigation Measure GEO-1: Implement Geotechnical Recommendations in Final Design**
The applicant shall incorporate the following recommendations of the geotechnical investigation into the final design:

- Site preparation and grading: In areas that will receive fill or improvements (i.e., pavement, foundations, or concrete flatwork), the soil subgrade would be scarified to a depth of at least 8 inches, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction. The upper eight inches of soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding.
- Utility trench backfill: All trenches would conform to the current CAL-OSHA requirements. Pipes and/or conduits would be bedded on a minimum of 4 inches of clean sand or fine gravel. After the pipes and/or conduits are tested, inspected (if

required) and approved, all trenches would be covered to a depth of 6 inches with clean sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill and should be placed and compacted according to the recommendations previously presented.

- Exterior concrete flatwork: Exterior concrete flatwork that would not receive vehicular traffic (i.e. sidewalk) would be underlain by at least 4 inches of Class 2 aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.
- Spread footing: The existing buildings are assumed to be supported on spread footings bottomed in the existing fill; however, some footings may extend into the native soil. If new loads are imposed on the existing footings, test pits would be excavated to determine the depth and width of the footings.
- Proposed improvements may be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades. Continuous footings should be at least 16 inches wide, and isolated footings should be at least 18 inches wide.
- Concrete slab-on-grade floors: The subgrade for new slab-on-grade floors would be prepared in accordance with recommendations in Section 8.1 of the geotechnical investigation (Rockridge Geotechnical 2022). Where water vapor transmission through the new floor slab is not desirable, the project would install a capillary moisture break and water vapor retarder beneath the floor slab. A capillary moisture break consists of at least 4 inches of clean, freed raining gravel or crushed rock.
- Permanent retaining walls: Retaining walls would be designed to resist static lateral earth pressures, lateral pressures caused by earthquakes, and traffic loads (if vehicular traffic is expected within a horizontal distance equal to 1.5 times the wall height). All on-site walls, including low retaining walls in landscaped areas, would be designed in accordance with the recommendations presented in the geotechnical investigation; however, checking the walls for seismic loading is not required for walls less than 6 feet high.

## 3.2.8 Greenhouse Gas Emissions

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **8. GREENHOUSE GAS EMISSIONS. Would the project:** | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☒ | ☐ |

### Environmental Settings

*Greenhouse gases* (GHGs) are global pollutants that can increase atmospheric temperatures, leading to global climate change. The increased temperatures associated with climate change results in changes in snow and rainfall patterns and an increase in droughts, tropical storms, and heavy rain events. The following pollutants are the most prominent GHGs that have been identified as contributing to global climate change: carbon dioxide ($CO_2$), methane ($CH_4$), nitrous oxide ($N_2O$), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride ($SF_6$).

The County of Marin adopted the *Marin County Unincorporated Area Climate Action Plan 2030* (CAP) in December 2020. The goals of the CAP are to (1) reduce emissions 60 percent below 2005 levels by 2030 (equivalent to 53% below 1990 levels) and (2) drawdown GHG emissions to below zero by 2045.

### Discussion

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

The project includes the redevelopment of the site into 54 affordable housing units. Construction activities include site preparation, demolition, grading, and architectural coating. Individual project's GHG emissions do not generally result in noticeable change in global climate; however, successive projects over time can contribute to potentially significant impacts.

The BAAQMD has established thresholds of significance for climate impacts from GHG emissions. The BAAQMDs approach determines whether an individual project's GHG emissions would be cumulatively considerable by establishing a "fair share" approach. If a project contributes its "fair share" to achieving GHG reduction goals, then the project's impact on global climate change is considered less than significant. The project-level thresholds are detailed in Table 3.2-9 below. If a project complies with the BAAQMD threshold, it is considered to have a less-than-significant impact.

**Table 3.2-9 Climate Thresholds of Significance (Project Level)**

| Thresholds of Significance for Land Use Projects (Must Include A or B) |
|---|
| A. Projects must include, at a minimum, the following project design elements:<br>1. Buildings<br>a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).<br>b. The project will not result in any wasteful, inefficient, or unnecessary energy use as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.<br>2. Transportation<br>c. The project will achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target that reflects the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory: Evaluating Transportation Impacts in CEQA:<br>i. Residential projects: 15 percent below the existing VMT per capita<br>ii. Office projects: 15 percent below the existing VMT per employee<br>iii. Retail projects: no net increase in existing VMT<br>d. The project will achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. |
| B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). |

*Source: (BAAQMD 2022)*

The project would be all electric and would not include natural gas appliances or plumbing. Further, the project would include 558,000 kWh solar PV system, which would offset 100 percent of the projected energy consumption of the project, including all electric residences, the resident services building, a wastewater treatment plant, and EV) charging loads. While the project would include a diesel backup generator, the generator would be used only in emergencies when there is no power from PG&E and the BESS is not sufficient. Because the project does not include natural gas pipelines and would not result in wasteful or inefficient use of energy, the project would comply with threshold of significance A(1). As an affordable housing project, it is assumed that the project would have a less-than-significant VMT impact, as detailed in Section 3.2.17 Transportation, below. The project also includes charging stations for EVs. The project therefore meets threshold of significance A(2).

As discussed in Section 3.2.6 Energy, above, the project is also consistent with the CAP, which has several policies that encourage and residential projects to be all electric and provide 100 percent renewable energy which, as noted above and detailed in Section 3.2.6, the project complies with. Therefore, the impact from generation of GHG emissions would be less than significant.

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

The CAP incorporates State reduction strategies to reduce community emissions from 2018 levels. The project would not conflict with applicable CAP and State policies for reducing emissions of GHGs. As detailed in Section 3.2.6, the project would comply with Policy RE-C2 and RE-C3 as the project would convert the existing residential units from natural gas supply to electric. The project would comply with CAP Policy RE-C2 as the project would include solar and BESS, which would help the project meet renewable adaptation goals detailed in Policy RE-C2. CAP policies WC-C1 and CBE-C2 are also applicable to the project.

- WC-C1: Community Water Use: Reduce indoor and outdoor water use in residential and commercial buildings and landscaping.
    1. Work with water districts and other organizations to promote water conservation programs and incentives.
    2. Educate residents and businesses about local and State laws requiring retrofit of non-compliant plumbing fixtures during remodeling and at resale.
    3. Ensure all projects requiring building permits, plan check, or design review comply with State and water district regulations.
    4. Encourage the installation of greywater and rainwater collection systems and the use of recycled water where available through ordinance and/or engagement campaigns.
    5. Investigate potential on-bill financing for water conservation measures, such as the Bay Area Regional Energy Network's (BayREN's) Water Upgrades Save Program.
    6. Encourage water districts to upgrade water meters to facilitate more granular and real-time water tracking data to better understand water use and detect leaks.
- CBE-C2: Deconstruction of Buildings: Deconstruction is the process of taking apart, rather than demolishing, buildings to salvage components and minimize landfill disposal. Deconstruction policies can vary based on common building types in a given community. The County will explore the development of a deconstruction ordinance. Similar policies adopted in Portland, Oregon focus on single-family residences built prior to 1940, which tend to have high quality materials such as old growth wood and decorative finishes. A deconstruction policy must be paired with economic development work to ensure that there are qualified contractors who can fulfill the requirements of an ordinance, and a market for the materials recovered. The County will participate in relevant regional working groups seeking to explore Bay Area-wide policies and programs for deconstruction, which may offer economies of scale. In addition, explore policies that outline new building standards with end of life in mind, and opportunities to promote

adaptive reuse, which can decrease the development of new buildings that will be directed to the landfill at the end of their life

The project would use recycled water for landscaping in compliance with CAP Policy WC-C1. In addition, the project would repurpose an existing residential facility and convert the existing structures into 54 residential units, which would minimize demolition waste consistent with CAP Policy CBE-C2. Because the project would be consistent with all applicable CAP policies and the CAP was adopted to attain GHG reduction goals, the project would not conflict with a policy or plan adopted for the purpose of reducing GHG emissions, and the impact would be less than significant.

**Mitigation Measures**

None required.

### 3.2.9 Hazards and Hazardous Materials

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **9. HAZARDS AND HAZARDOUS MATERIALS. Would the project:** | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☒ | ☐ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☒ | ☐ |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☐ | ☒ |
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? | ☐ | ☐ | ☐ | ☒ |
| f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☒ | ☐ |
| g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? | ☐ | ☐ | ☒ | ☐ |

#### Environmental Setting

As used in this section, the term *hazardous material* is defined as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. As used in this section, the term *hazardous waste* generally refers to a hazardous material that has been used for its original purpose and is about to be discarded or recycled. In California, a hazardous waste is defined as a waste, or combination of wastes,

that, due to its quantity, concentration, or physical, chemical, or infectious characteristics, may either:

- Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or
- Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

Federal and State regulations require adherence to specific guidelines regarding the use, transportation, disposal, and accidental release of hazardous materials. The EPA is responsible for administering the federal Toxic Substances Control Act and the Resource Conservation and Recovery Act (RCRA), which regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) is a federal database that records the known hazardous contaminated sites and facilitates remediation actions. The management of hazardous materials and waste within California is under the jurisdiction of CalEPA, which coordinates the State's Unified Program for permitting, inspecting, and enforcing regulations related to hazards materials.

**Marin Countywide Plan**

The Marin Countywide Plan is the comprehensive long-range general plan that guides land use and development in the unincorporated areas of Marin County (County of Marin 2007). Goals and policies related to the project and the hazards and hazardous materials analysis are listed below. Consistency with these goals and policies was considered during evaluation of potential project impacts.

- **Goal EH-1**: Hazard Awareness. Raise public awareness and responses about potential environmental hazards.
  - **Policy EH-1.3**: Identify Evacuation Routes. Provide the public with information identifying accessible evacuation routes for fire, geologic, and other hazards.
- **Goal EH-4**: Safety from Fires. Protect people and property from hazards associated with wildland and structural fires.
  - **Goal PS-4**: Decreased Exposure to Hazardous Materials. Reduce the risks to human and environmental health from hazardous materials.
  - **Policy PS-4.1**: Regulate and Reduce Hazardous Material Use. Control the use and storage of hazardous materials to minimize their presence in, and potential dangers to, the community and environment.

**Marin Operational Area Emergency Operations Plan**

The Marin Operational Area (OA) Emergency Operations Plan (EOP) addresses the planned response to extraordinary emergency situations associated with large-scale disasters affecting Marin County (Marin County Sheriff's Office of Emergency Services 2014). Specifically, the EOP does the following:

- Establishes the emergency management organization required to mitigate any significant emergency or disaster affecting the Marin OA

- Establishes the overall operational concepts associated with Marin County's Emergency Operations Center (EOC) activities and the recovery process

The EOP identifies how the Marin County emergency operational system fits into the overall California and national risk-based, all-hazard emergency response and recovery operations plan (Marin County Sheriff's Office of Emergency Services 2014). The EOP incorporates annexes for specific disaster response issues, such as post-disaster housing, spontaneous volunteers, tsunami, medical/health, bioterrorism, oil spill, extreme temperature, mass fatality, and mass care and shelter.

**Marin County Multi-jurisdictional Local Hazard Mitigation Plan**

The Marin County Multi-Jurisdictional Local Hazard Mitigation Plan (MCM LHMP) presents environmental hazard analysis, describes important transportation and utility infrastructure at risk from environmental hazards, and describes emergency evacuation systems and mitigation actions to protect Marin County populations and infrastructure from environmental hazards (Marin County Sheriff's Office of Emergency Services 2018). The Marin Countywide Plan complies with all requirements of the MCM LHMP. The MCM LHMP Planning Committee developed mitigation actions based on the MCM LHMP's hazard analysis, vulnerability analysis, and capability assessments. The mitigation actions in the MCM LHMP would be implemented over the lifespan of the project. The relevant mitigation actions are provided below:

- LS-1: Increase efforts to reduce landslides and erosion in existing and future development by improving appropriate code enforcement and use of applicable standards for private property, such as those appearing in the California Building Code, California Geological Survey Special Report 117 – Guidelines for Evaluating and Mitigating Seismic Hazards in California, American Society of Civil Engineers (ASCE) report Recommended Procedures for Implementation of DMG Special Publication 117: Guidelines for Analyzing and Mitigating Landslide Hazards in California, and the California Board for Geologists and Geophysicists Guidelines for Engineering Geologic Reports. Such standards should cover excavation, fill placement, cut-fill transitions, slope stability, drainage and erosion control, slope setbacks, expansive soils, collapsible soils, environmental issues, geological and geotechnical investigations, grading plans and specifications, protection of adjacent properties, and review and permit issuance.
- MLT-9: Develop and implement energy assurance plans. May include backup generators, energy storage (e.g. diesel fuel tanks), and microgrids for critical facilities.

**Unified Program**

The Unified Program is a consolidation of multiple environmental and emergency management programs, allowing for local oversight and enforcement by a Certified Unified Program Agency (CUPA). The Marin County CUPA administers the Unified Program in the project area. The Unified Program consolidates the following programs (CalEPA 2022):

- Aboveground Petroleum Storage Act Program
- Area Plans for Hazardous Materials Emergencies
- California Accidental Release Prevention Program
- Hazardous Materials Release Response Plans and Inventories (Business Plans)
- Hazardous Material Management Plan and Hazardous Materials Inventory Statements
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs
- Underground Storage Tank Program

**Previous Environmental Documentation**
An Environmental Compliance Due Diligence Activities Report was prepared for the site in November 2016 (Tetra Tech 2016). This report consisted of a Phase I Environmental Site Assessment (ESA), Subsurface Investigation, Asbestos-Containing Survey and Condition/Risk Assessment, Lead-Based Paint Inspection and Risk Assessment, Lead in Soil Sampling Assessment, and NEPA Report for the Site. In 2021, Essel Environmental Engineering & Consulting (Essel) prepared a new Phase I ESA for the project site (Essel Environmental Engineering & Consulting 2021). The 2021 Phase I ESA included review of previous reports for the site (listed above), historical aerial photographs, hazardous records search, and available online materials.

The following is a summary of the relevant reports:

- **Phase I ESA**: A Phase I ESA is designed to identify *recognized environmental conditions* (RECs) in connection with the previous and current uses and ownership of a site. An REC is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property 1) due to any release to the environment; 2) under conditions indicative of a release to the environment; or 3) under conditions that pose a material threat of a future release to the environment. A potential REC was reported based on a concrete cut that was suspected of being part of a former in-ground hydraulic lift due to a risk of PCB contamination (see "Subsurface Investigation" below for testing results). A *de minimis* condition was reported due to visible staining on the parking areas. Suspected mold was observed in the water heater closets of the 203 Commodore Webster Drive building, Unit 203A, which Tetra Tech recommends be cleaned and repaired. Pesticides and other chemicals were also observed stored within storage areas and chemical cabinets. However, these were determined to be stored properly and not considered an environmental risk.
- **Subsurface Investigation**: Soil and groundwater sampling was conducted within the area identified as a potential REC and elevated metals were discovered in the groundwater during the first assessment, which triggered a follow-up investigation. The follow-up investigation determined that the original sample was from a perched water source due to groundwater likely being 40 to 60 feet below ground surface and no groundwater being encountered during the follow-up

investigation. Tetra Tech determined that the elevated metals in the original sampling event was not a major concern and therefore no longer considered a REC.

- **Asbestos-Containing Materials Survey** – For buildings constructed prior to 1981, federal regulations state that thermal system insulation (boiler insulation, pipe lagging, and related materials) and surface materials (e.g., acoustical ceilings) must be designated as an *asbestos-containing material* (ACM) unless proven otherwise through sampling in accordance with the standards of the Asbestos Hazard Emergency Response Act. Non-destructive testing conducted at the site revealed the presence of asbestos in 10 of the 15 buildings. These materials are black sink undercoating, black mastic, yellow mastic, white sheet flooring, green sheet flooring, off-white floor tile, and white acoustical ceiling texture. Due to the presence of asbestos-containing materials, a certified abatement company was recommended to remove these materials prior or during construction.
- **Lead-based paint inspection**: The survey discovered the presence of lead-based paint in three locations. The living room closet door and second floor hall storage closet of Unit 201C and the living room closet door frame in 205A were found to contain lead paint greater than 1.0 mg/cm$^2$. Due to the presence of lead-based paint, the painted materials should be removed in accordance with local, State, and federal regulations.
- **Lead in soil sampling**: In 1978, the federal government banned the use of *lead-based paint* (LBP) in commercial applications; however, usage was allowed to continue in many industrial settings. A soil sample from a single location, outside of Building 103, measured 200 mg/kg of lead, which exceeds the California EPA limit of lead in soil of 80 mg/kg (CalEPA 2015). Further sampling was performed at this location, and no elevated samples were found. It was determined that this sampling is considered localized and not a major concern to the site. However, it is recommended that soil disturbed in this area should be removed and disposed of in accordance with local, state, and federal regulations.

**Site Conditions**

***Historical Aerial Photography Review***

Review of historical aerial photographs indicates that the project site was undeveloped from 1952 to 1971. From 1974 to 2016, the site was developed with residential and other supporting structures. The surrounding properties to the northeast and southeast remained essentially undeveloped from 1952 to 2016. The surrounding properties to the northwest and southwest evolved from sparsely populated with residential and some commercial structures in 1952 to significant residential and commercial development in 2016 (Essel Environmental Engineering & Consulting 2021).

***Underground/Aboveground Storage Tanks***

Each building has at least one *aboveground storage tank* (AST) that contains propane. Several partially buried *underground storage tanks* (USTs) are located along the south side of Commodore

Webster Drive near the site entrance. None of the regulatory database listings or other regulatory agency records searched during the 2021 Phase I ESA contained records pertaining to either USTs or ASTs at the site (Essel Environmental Engineering & Consulting 2021).

***Petroleum Products and Hazardous Materials and Wastes***
A chemical storage cabinet used by the Marin County Fire Department was observed at the project site located behind the maintenance building. Several plastic gasoline and diesel containers were observed inside of the cabinet. Also located behind the maintenance building were two secondary containments containing used oil, also used by the Marin County Fire Department.

***On-site Wells***
Two monitoring wells are located on the northeast portion of the project site. Additionally, four monitoring wells are mapped on the southwesterly adjacent property. No water-supply wells are located within 0.25 mile of the project site. There are no records of oil, gas, or geothermal resources wells at or in the vicinity of the project site (Essel Environmental Engineering & Consulting 2021).

## Discussion

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

**Construction**
No hazardous substances as defined by the Hazardous Materials Transportation Uniform Safety Act would be used, transported, or disposed of as a part of the project. Construction of the proposed project would involve the use of materials that are defined as hazardous, such as paints and other types of coatings, fuels, hydraulic fluids, and coolants for construction equipment. All of these materials are common in the construction industry and construction process, and specifications outlined by their respective manufactures for their transport, handling, use, and disposal are designed to ensure avoidance of adverse environmental effects.

Hazardous fluids have the potential to leak from construction vehicles and equipment. The project requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) due to disturbance of more than 1 acre of land. The SWPPP includes procedures for cleanup of any spilled hazardous materials. The impact from spills of hazardous materials during construction would therefore be less than significant.

**Operation/Occupancy**
Once construction is completed, small quantities of hazardous materials (e.g., paints, solvents, oils) could be stored and used at the residential properties as is common in residential uses. The project would also include an 80 kW BESS and backup diesel generator located between Buildings 1 and 50. The proposed microgrid would provide power to Building 1 and the wastewater treatment plant. Small quantities of diesel would be stored on site for the backup generator. Due to the small number of residential parcels and limited quantities of hazardous

materials that are associated with residential uses, the potential for an accidental release of hazardous materials from the residential development is considered low. Furthermore, the risk of upset and accident conditions involving the release of hazardous materials into the environment would be reduced through compliance with the federal and State requirements. The project would be carried out in accordance with federal, State, and County regulations for transport, storage, and disposal of hazardous materials. Impacts from hazardous materials during construction and operation would be less than significant.

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

The previously prepared Phase I ESA determined the presence of lead-based paint and ACM on site. The survey revealed the presence of lead-based paint in three locations on site. The living room closet door and second floor hall storage closet of Unit 201C and the living room closet door frame in 205A were found to contain lead paint greater than 1.0 mg/cm$^2$. Non-destructive testing conducted at the project site discovered the presence of asbestos in 10 of the 15 buildings. These materials are black sink undercoating, black mastic, yellow mastic, white sheet flooring, green sheet flooring, off-white floor tile, and white acoustical ceiling texture (Tetra Tech 2016). Release of lead-based paint or ACM during demolition and construction would be a significant impact.

Mitigation Measures Haz-1 outlines the procedures to be implemented to properly test and dispose of potential lead-based paint and ACM during demolition and construction. The construction materials and demolition materials would be properly transported and disposed of per federal and State regulations. After construction, there would be no hazardous materials transported to or from the site on a regular basis; therefore, the proposed project would not involve the routine transport use or disposal of hazardous material. Because demolition materials would be properly contained in compliance with Mitigation Measure Haz-1 and the proposed project would not involve routine transport, use, or disposal of hazardous materials during operation, the impact would be less than significant with mitigation.

**c) Would the Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**Construction**

The West Marin Elementary School is located approximately 0.25 mile north of the proposed project site. As noted in impact discussion a), construction of the proposed project would involve the use of materials that are defined as hazardous, such as paints and other types of coatings, fuels, hydraulic fluids, and coolants for construction equipment. However, all of these materials are common in the construction industry and construction process, and specifications outlined by their respective manufactures for their transport, handling, use, and disposal are designed to ensure avoidance of adverse environmental effects. Proper handling of the standard

hazardous materials during construction would ensure that hazardous materials would not be transported to the school. In addition, the school is located at a higher elevation than the project site, so there is a low potential for exposure to construction emissions or hazardous materials.

**Operation/Occupancy**
After construction, there would be no hazardous materials transported to or from the site on a regular basis besides small quantities of hazardous materials (e.g., paints, solvents, oils) that could be stored and used at the residential properties. The project would also include an 80 kW BESS and backup diesel generator located between Buildings 1 and 50. Small quantities of diesel would be stored on site for the backup generator. Due to the small number of residential parcels and limited quantities of hazardous materials that are associated with residential uses, the potential for an accidental release of hazardous materials from the residential development is considered low.

The project would rehabilitate the existing townhomes, dormitory building, and administrative building for affordable housing. Residential use is not a land use that is associated with the production or emission of hazardous materials, such as industrial and manufacturing uses. Therefore, the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials. Impacts would be less than significant.

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

California Government Code section 65962.5, also known as the Cortese List, requires the CalEPA to develop an updated list of hazardous material sites. The California Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. There are no known hazardous materials sites located within the project area; however, there are six hazardous material sites within 0.5 mile from the project area (California State Water Resources Control Board 2023) (SWRCB n.d., tit. GeoTracker). Table 3.2-10, below provides the location, type, and status of the seven known hazardous materials sites.

**Table 3.2-10 Hazardous Materials Sites within 0.5 Mile of Project Site**

| Case Name | Address | Type | Status |
|---|---|---|---|
| Ann Dick Jewelry | 1525 Mesa Road, Point Reyes Station | Cleanup Program Site | Completed – Case Closed |
| Caltrans Point Reyes Maintenance Yard | 10795 HWY 1, Point Reyes Station | LUST Cleanup Site | Completed – Case Closed |
| Cheda Chevrolet | 11225 State Route 1, Point Reyes Station | LUST Cleanup Site | Completed – Case Closed |
| Chevron/Redwood Oil Bulk Plant | 11095 State Route 1, Point Reyes Station | Cleanup Program Site | Completed – Case Closed |

| Case Name | Address | Type | Status |
|---|---|---|---|
| Greenbridge Gas & Auto | 11401 State Route 1, Point Reyes Station | LUST Cleanup Site | Completed – Case Closed |
| Pacific Bell | Lighthouse RD, Point Reyes Station | LUST Cleanup Site | Completed – Case Closed |
| Toby's Trucking Inc. | B St, Point Reyes Station | LUST Cleanup Site | Completed – Case Closed |

*Source: (SWRCB n.d., tit. GeoTracker)*

As shown in Table 3.2-10, all the sites within 0.5 mile of the project site have been remediated and closed. The sites no longer pose a risk to the surrounding properties, including the proposed project site. Therefore, no impacts would occur.

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

The proposed project is not located within an airport land use plan or within 2 miles of a public airport or public use airport. The closest airport is the Marin County Airport, approximately 14 miles east of the project site. No impact from conflict with an airport land use plan would occur.

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

**Construction**

The County of Marin provides wildfire evacuation zone maps for wildland-urban interface areas in the County. During a disaster or other emergency, the emergency response would be led by the Marin County Sheriff's OES in accordance with the Marin OA EOP. The response measures may vary depending on the nature and location of the event but could involve evacuation of the populated areas and movement of emergency vehicles along roadways within this area. In the Point Reyes area, Point Reyes–Petaluma Road is identified as a primary evacuation route (County of Marin 2017). Point Reyes–Petaluma Road is located northeast of the project site; however, Commodore Webster Drive does not directly connect to Point Reyes–Petaluma Road.

The project site is located at the end of Commodore Webster Drive, and no other users access this portion of the road other than possibly turning around at the cul-de-sac. The project site is bounded by the Point Reyes Affordable Homes to the west, an undeveloped lot to the north, and Lagunitas Creek to the east and south. Access to the project site would be provided by Mesa Road, immediately east of the intersection of Mesa Road and SR-1.

Construction workers and delivery trucks would access the site via the existing surrounding roads. Project staging and storage areas would be located within the project site. Construction of the project does not require closure of Commodore Webster Drive or any of the surrounding roadways. Access would always be granted to emergency responders, and construction would be halted in the event of an emergency to allow safe access. Construction or operation/occupancy would not affect residents at Point Reyes Affordable Homes as the proposed project is located at the end of road and would not impede or restrict access in the event of an emergency.

**Operation/Occupancy**

The project would consist of 54 affordable housing units within the 12 existing buildings, which equates to approximately 215 residents. Project operation would not interfere with emergency response because driveways and access points would comply with all County fire safety standards to maximize entry and egress space for emergency vehicles. In the event of an emergency, evacuation from the project site would be provided by Mesa Road, immediately east of the intersection of Mesa Road and State Highway 1. Occupancy of the low-density residential parcels would not block or impede access to primary evacuation route, Point Reyes–Petaluma Road. Impacts would be less than significant.

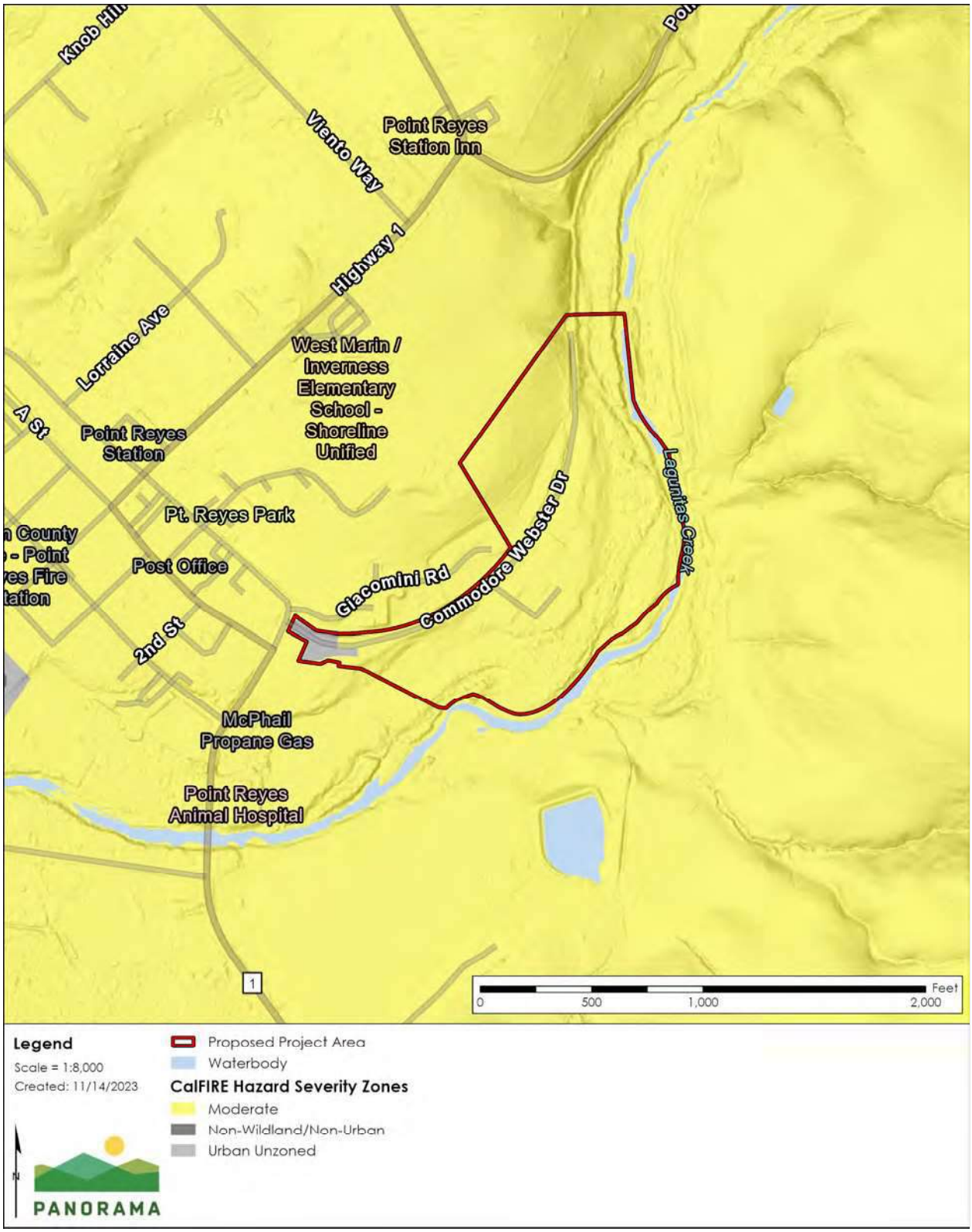
**g) Would the Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

State Responsibility Areas (SRA) are recognized by the Board of Forestry and Fire Protection as areas where Cal Fire is the primary emergency response agency responsible for fire suppression and prevention. The SRA designates fire risk zones as very high, high, or moderate. The proposed project is located within a moderate fire hazard severity zone, as shown in Figure 3.2-3.

**Construction**

The majority of the project site is currently developed and contains fire hydrants and defensible space. Construction within developed portions of the site would not result in increased wildfire risk. However, portions of the project site where the solar facility and wastewater treatment system would be installed and new landscape self-retaining areas would be in undeveloped lands containing grasslands and adjacent riparian forest. Construction equipment use in undeveloped areas could create sparks and ignite a fire. Other potential fire hazards could include worker behavior such as smoking and disposal of cigarettes as well as parking or driving vehicles and equipment on dry vegetation. Ignition of a wildfire would cause a significant wildfire risk and be a significant impact. The Office of the State Fire Marshal and California Department of Forestry and Fire Protection (CAL FIRE) administer State policies regarding wildland fire safety. Construction contractors must comply with the following requirements in the PRC during construction activities at any sites with forest-, brush-, or grass covered land:

**Figure 3.2-3 Fire Hazard Severity Zone**




*Source: (California Department of Forestry and Fire Protection, FRAP 2023; USGS 2012; ESRI 2011)*

- Earthmoving and portable equipment with internal combustion engines must be equipped with a spark arrestor to reduce the potential for igniting a wildland fire (PRC Section 4442).
- Appropriate fire-suppression equipment must be maintained from April 1 to December 1, the highest-danger period for fires (PRC 4428).
- On days when a burning permit is required, flammable materials must be removed to a distance of 10 feet from any equipment that could produce a spark, fire, or flame, and the construction contractor must maintain the appropriate fire-suppression equipment (PRC Section 4427).
- On days when a burning permit is required, portable tools powered by gasoline fueled

The impact of construction in the grassland, brush, or forested portions of the site would be less than significant due to compliance with the requirements of PRC, which restricts construction in wildfire prone areas.

**Operation/Occupancy**

Emergency access to the site would be provided by Commodore Webster Drive. Driveways and access points would comply with all County fire safety standards to maximize entry and egress space for emergency vehicles. The project structures are primarily existing structures, and all upgrades/improvements would be designed to meet State and County building codes, including 2022 California Fire Code (CFC), Title 24, Part 9. The CFC contains regulations consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and explosion; dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; and hazardous conditions in the use or occupancy of buildings or premises. The CFC also contains provisions to assist emergency response personnel. Consistent with CFC requirements, fire sprinklers would be added to the ADA compliance mobility units in Buildings 202 and 204, Building 50, and Building 1. New fire water lines would be installed to service the sprinkler system. No new fire hydrants are proposed. All landscaping would comply with required defensible space by Marin County Fire Department. The project would also comply with defensible space requirements in Zone 1 of the ESHA. Specifically, the overlapping zone would be managed by a professional ecological restoration maintenance crew who would perform vegetation removal limited to tree branch lopping, shrub pruning, and mowing of grasses and forbs outside of the nesting bird season (Feb 1–Aug 15), to reduce the fuel load while maintaining habitat and shade within these overlapping zones. With compliance with State and County requirements, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Impacts would be less than significant.

### Mitigation Measures

**Mitigation Measure Haz-1: Asbestos and Lead-Based Paint**

Demolition activities shall comply with the OSHA Standard 1926.6 related to lead abatement, and all other applicable State and federal requirements for the safe handling and disposal of

lead-based paint, ACM, and universal wastes. The project contractor shall implement the following measures.

***Lead-based Paint***

As lead was identified in the paints and a detailed inventory of paints was not performed for the entire project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of any detected levels of lead.

None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the Contractor on the entire waste stream for verification.

Conventional demolition techniques shall be employed for all painted surfaces, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:

- Worker awareness training
- Exposure monitoring, as needed
- Medical examinations, which may include blood lead level testing
- Establishing a written respiratory protection program

***Asbestos-containing Materials (ACM)***

Any suspect material not sampled or not visually identified as negative by the Environmental Compliance Due Diligence Activities Report prepared by Tetra Tech in 2016 shall be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials shall be assumed to contain asbestos and disposed of in accordance with OSHA Standard 1926.6.

## 3.2.10 Hydrology and Water Quality

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **10. HYDROLOGY AND WATER QUALITY. Would the project:** | | | | |
| a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? | ☐ | ☐ | ☒ | ☐ |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? | ☐ | ☒ | ☐ | ☐ |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would: | ☐ | ☐ | ☒ | ☐ |
| i) result in substantial erosion or siltation on- or off-site; | ☐ | ☐ | ☒ | ☐ |
| ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; | ☐ | ☐ | ☒ | ☐ |
| iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or | ☐ | ☐ | ☒ | ☐ |
| iv) impede or redirect flood flows? | ☐ | ☐ | ☒ | ☐ |
| d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation? | ☐ | ☐ | ☒ | ☐ |
| e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? | ☐ | ☐ | ☒ | ☐ |

### Environmental Setting

#### Site Drainage

The project site is located within the Lagunitas Creek watershed. Lagunitas Creek flows from east to west across the southern portion of the project site and discharges to Tomales Bay, located approximately 2 miles northwest of the project site. The existing site includes 11 low-rise residential buildings and six non-residential structures as well as parking and paving areas. The project site slopes gradually towards Lagunitas Creek, which is the primary drainage feature in the project area.

The existing development on the project site includes stormwater inlets, which convey stormwater from the site directly to outfalls into the riparian areas adjacent to Lagunitas Creek. There is currently no treatment of the site runoff prior to the stormwater outfall.

**Groundwater Supplies**
No groundwater basin is defined underlying the project area(California Department of Water Resources 2015); therefore, no groundwater sustainability agency or groundwater sustainability plan has been adopted for the area. The project site contains two existing potable water wells, both of which were installed by the USCG and are maintained by NMWD. Analysis of groundwater elevations and percolation rates on the site are provided in Appendix F.

**Flood Hazard Zone**
As discussed in Section 2.2.5, the existing and proposed habitable structures are located outside of the mapped floodway as amended by FEMA on May 5, 2023, in the Letter of Map Amendment (Appendix A). The FEMA 100-year floodplain covers a portion of the existing development area, as shown in Figure 2.3-1.

**Tsunami Inundation**
Lagunitas Creek and portion of the adjacent riparian corridor are located within a tsunami inundation area. The existing residential development and proposed structures are not located within a tsunami inundation area (CalOES 2022).

**Water Quality Control Plan**
The San Francisco Regional Water Quality Control Board adopted the San Francisco Basin Water Quality Control Plan (Basin Plan) in 2010. The Basin Plan lists beneficial uses for water bodies. The Basin Plan includes the following beneficial uses for Lagunitas Creek:

- Agricultural supply: Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing
- Municipal and domestic Supply[2]: Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply
- Freshwater Replenishment[2]: Uses of water for natural or artificial maintenance of surface water quantity or quality

[2] MUN, FRSH, & RARE: Lagunitas Creek begins on Mt. Tam, and the creek and its tributaries feed into MMWD's reservoirs. Downstream of the reservoirs, the creek is a spawning and rearing ground for coho salmon and steelhead trout. The creek is also habitat for endangered California freshwater shrimp. Lagunitas Creek supports one of the best populations of coho salmon, and probably the best population of freshwater shrimp, in the state.

- Cold freshwater habitat: Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates
- Fish migration: Uses of water that support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region
- Preservation of rare and Endangered Species[2]: Uses of water that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered
- Fish spawning: Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish
- Warm freshwater habitat: Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- Wildlife habitat: Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.
- Water contact recreation: Uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs.
- Noncontact water recreation: Uses of water for recreational activities involving proximity to water but not normally involving contact with water where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

The Tomales Bay Watershed, including Lagunitas Creek, is currently listed as impaired for its beneficial uses due to excess nutrients from animal and human waste (SWRCB 2010). A *total maximum daily load* (TMDL) for sediment was adopted for Lagunitas Creek in 2014 ("Item 5" 2014). The fine sediment TMDL was adopted to restore annual spawning for coho salmon within Lagunitas Creek. The TMDL includes specific quantities of sediment for areas upstream of Olema Creek (including the project area) that are allocated to each sediment source activity including landslides, gullies, and soil creep; roads; tributary channels; and channel incision and bank erosion.

### Discussion

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

**Construction**

Construction of the proposed project would involve ground disturbance for removal of existing non-residential structures, construction of new bioretention areas, removal of trees, installation

of solar panels and electrical conduit, and installation of a new wastewater treatment system and leach field. Construction would also require use of heavy equipment containing fuel, hydraulic fluid, and lubricants. Other materials that would be used during construction include paints and solvents, which if spilled could degrade water quality. The temporary ground disturbance from excavation and grading during construction and potential fills or leaks of fuels, paints, solvents, or other materials could degrade surface water quality. Construction would not be taking place in or immediately adjacent Lagunitas Creek, and a 50-foot riparian ESHA buffer would be implemented to protect sensitive riparian habitat.

The project construction would be implemented in compliance with the SWPPP (Appendix G). In addition, the project would need to comply with the Construction Stormwater General Permit (Order No. 2022-057-DWQ) (SWRCB 2022). In compliance with the Construction Stormwater General Permit, a SWPPP would be implemented as part of the project and would include specific BMPs and design and conservation measures that would be used to control construction area erosion and transport of sediment to Lagunitas Creek. The measures include erosion control BMPs (e.g., silt fences, straw wattles, seed-free mulching) and revegetation with native plants as well as source-control BMPs to address potential leaks or spills of hazardous materials and avoid transport of any hazardous materials (e.g., fuels, lubricants, hydraulic fluid, paints, solvents) to Lagunitas Creek. Compliance with the Construction Stormwater General Permit and SWPPP would ensure that impacts to water quality are less than significant, and no mitigation would be required.

**Operation/Occupancy**

The project design includes removal of existing structures and impervious surfaces in proximity to riparian areas and Lagunitas Creek and replacement of those structures with bioretention areas to improve water quality. Because the project would add new bioretention features, which could reduce discharge of sediment or other water quality pollutants to Lagunitas Creek, the potential impact to Lagunitas Creek from sediment loads generated at the project site would be potentially beneficial and less than significant.

The project would also include installation of a new, enhanced wastewater treatment system to produce high-quality effluent that can be reused for landscape irrigation around the site. The associated leach fields would be used as a backup disposal system during periods of rainfall or when the irrigation system is being maintained. As a precautionary measure, the treatment and disposal systems would be sized up by a factor of safety of 1.1 to manage increased flows during special events with increased usage.

The wastewater treatment system would be designed to meet the State's Recycled Water Standards, established in California Code of Regulations Title 22, for disinfected tertiary treatment. The proposed treatment train is designed to provide a very high level of treatment to protect groundwater resources at the site, to allow for reuse of the water, and ensure reliable effluent quality as illustrated in the BOD report (Appendix H). The treatment system would be designed to produce disinfected tertiary treated recycled water that would have a biochemical oxygen demand, total suspended solids, and total nitrogen level to less than 10 mg/L. The

recycled water must also meet effluent limits set by the State Water Resources Control Board Order WQ 2014-0153-DWQ "General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems" (2014 WDR General Order). The treatment goals for the proposed system are included in Table 3.2-11, below. The treatment system has been designed to meet the treatment goals and would produce higher quality water than is required under the 2014 WDR General Order.

**Table 3.2-11 Wastewater Treatment Standards**

| Parameter | Unit | Treatment goal |
|---|---|---|
| Biochemical oxygen demand | mg/L | 10 |
| Total suspended solids | mg/L | 10 |
| Total nitrate | mg/L | 10 |
| Bacteria | - | 5-log removal (99.999%) |
| Cysts (giardia/cryptosporidium) | - | 5-log removal (99.999%) |
| Viruses | - | 5-log removal (99.999%) |

*Source: (Sherwood Design Engineers 2022)*

The tertiary treated recycled water would be applied to either a leach field or to landscape areas within the project site. The recycled water would be applied to leach field during the rainy season when vegetation water demand is less than the recycled water volume and would be applied to the landscape area via subsurface drip dispersal when landscape water demand exceed the volume of recycled water being applied. In the summer, it is assumed that up to 100 percent of recycled water supply would be used for irrigation, and potable water may be needed to supplement the recycled water depending on the final landscape plan and plants selected. Because the recycled water would be applied to landscaping subsurface and at a rate that it would be used by the landscaping, the wastewater applied to the landscaping would not migrate to the creek and would not degrade water quality in Lagunitas Creek, nor would the drip irrigation affect the groundwater quality.

During periods when the irrigation water demand does not exceed rainfall, the wastewater would be applied within the leach field as the primary means of water disposal. The leach field is sized to accommodate 100 percent of the design flow of the wastewater system. The leach field would be used during periods of low irrigation demand, during rain events, and when the subsurface drip system needs maintenance. All subsurface drip dispersal areas and leach fields must comply with local regulations, which require a 110-foot setback from flowing streams, a 50-foot setback from ephemeral stream drainages, and a 75-foot setback from intermittent watercourses or seasonal wetlands. The leach field is located approximately 400 feet from Lagunitas Creek at the nearest point. Leach fields would include trenches measuring 24 inches

deep by 24 inches wide. Leach field saturation or ponding is unlikely, given the high quality of recycled water, which would minimize biological growth and potential clogging in the leach trench. Because wastewater would be discharged subsurface, and because the leach field is separated from Lagunitas Creek by 400 feet, discharge waters in the leach field would infiltrate to the groundwater and would not migrate to the creek surface waters or degrade the surface water quality of Lagunitas Creek. Because of the high quality of recycled water that would be discharged in the leach field, discharge to the leach field would also not substantially degrade groundwater quality because of the high level of treatment prior to discharge.

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

**Construction**

Construction of the project would require temporary water for worker uses as well as for dust control in areas of grading and land disturbance. Construction would last a total of 12 months and would employ approximately 30 workers on average. Grading would be conducted for approximately 3 months and would be limited to areas of new bioretention basins, the solar facility, and the wastewater treatment facilities. Most of the construction would occur within existing developed areas and would not require water for dust control. Due to the short duration of construction and limited area of disturbance requiring dust control, the amount of water required for construction would not substantially decrease groundwater supplies. The impact of construction would be less than significant.

**Operation**

***Groundwater Supplies***

NMWD has two active water supply wells located on the project site. The wells provide the primary source of water supply for a service area of more than 20 square miles in the Point Reyes area, with annual water production of more than 100 million gallons. The wells are completed in the alluvium above the bedrock and draw water mainly from highly permeable sand and gravel deposits that are recharged largely by the stream flow and underflow of Lagunitas Creek and, to a lesser extent, by lateral inflow from the adjacent hills. The wells are approximately 60 feet deep, with a 20-foot annular seal and a 40-foot screened section.

The housing units would have a water demand of 9,500 gpd supplied to the housing from NMWD. The housing units were previously supplied water from the groundwater wells on the project site, and the connection of the 54 housing units to the NMWD service system would not cause a significant impact on groundwater supplies due to the limited volume of water required for the project.

The project would include installation of a new, enhanced wastewater treatment system to produce high-quality effluent that can be reused for landscape irrigation around the site. The associated leach fields would be used as a backup disposal system during periods of rainfall or when the irrigation system is being maintained. As discussed in impact discussion a) above, the

wastewater treatment system would be designed to meet the State's Water Recycling Criteria, established in California Code of Regulations Title 22, for disinfected tertiary treatment and the water quality objectives in Table 3.2-11, which include very low levels of any pollutants, including bacteria and viruses.

Drinking water source Protection Zones are applied to groundwater resources to manage potential risks of contamination. Drinking water supplies are categorized as Zone A, to protect the drinking water supply from viral, microbial, and direct chemical contamination (Questa Engineering Corp 2023). Zone A is defined by the surface area overlying the portion of the aquifer that contributes water to the drinking water well(s) within a 2-year time-of-travel. The 2-year time-of-travel criterion is used because research indicates that bacteria and viruses survive less than two years in soil and ground water (EPA 2023b). The project proposes application of treated wastewater approximately 1.5 feet subsurface, to be used as landscaping irrigation during periods when the application of water would be less than the agronomic rate of the landscaping. Application of recycled water at agronomic rates allows plants to take up wastewater constituents and minimizes the movement of nutrients below the root zone (State Water Resources Control Board 2016).

The treated wastewater would be applied to the leach field during periods when water cannot be applied for landscaping (e.g., during the rainy season). The landscaping area is within the Protection Zone for the NMWD wells. The leach field is generally located outside the Protection Zone; however a small portion of the leach field is within the Protection Zone from NMWD wells (Questa Engineering Corp 2023). Application of the tertiary treated recycled water has the potential to affect the NMWD groundwater supply wells if the tertiary treated recycled water were to result in increased levels of contaminants or otherwise affect the drinking water quality such that the groundwater quality no longer met water quality standards for drinking water. If NMWD could no longer use their groundwater supply wells due to impacts on groundwater quality from application of the tertiary treated groundwater, the impact on water supply would be significant.

Mitigation Measure HYDRO-1 defines procedures for determining when water can be applied to landscaping based on depth to groundwater and forecast rain events to avoid applying treated wastewater when groundwater elevations are higher. The mitigation measure also requires groundwater monitoring in between the leach field and irrigation areas and the NMWD water supply wells and defines action levels at the intervening water supply wells at which application of the tertiary treated water would either cease or be reduced. The measure also defines alternative disposal options for the treated wastewater if the application of treated wastewater exceeds the thresholds defined to protect the NMWD water supply wells. With application of Mitigation Measure HYDRO-1, the project would not adversely affect the water quality of NMWD water supply wells, and the impact on groundwater supplies would be less than significant.

**Groundwater Recharge**
The project involves renovation of existing structures to provide affordable housing. All roads, parking areas, and buildings that would be used during operation are existing facilities. The project would remove existing structures in order to construct new bioretention areas. The new bioretention areas would increase groundwater recharge and infiltration. Because the project would not create any new roads, parking areas, or buildings and would create new recharge areas, the project would not interfere substantially with groundwater recharge, and the impact on groundwater recharge would be less than significant.

**c) Would the Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

- **i. Result in substantial erosion or siltation on- or off-site;**
- **ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;**
- **iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or**
- **iv. Impede or redirect flows?**

**Construction**
The project would not substantially alter the existing drainage pattern of the site through alteration of the course of a stream or river. No construction is proposed within Lagunitas Creek, and the project would not directly alter any streams or rivers in the area. The drainage patterns on the site would remain, and all project areas would continue to drain towards Lagunitas Creek. Some grading would be required on the site to intercept the stormwater runoff and direct it to bioretention areas before the water reaches Lagunitas Creek. While the stormwater runoff would be redirected to the bioretention areas, the bioretention areas would not increase erosion or siltation on or off site as the purpose of the bioretention features is to reduce siltation. Construction of the project would mostly be conducted within existing developed areas, including existing structures and parking areas. The only areas of new impervious surfaces would include the minimal infrastructure at the wastewater treatment facility and the infrastructure for the solar facility. Construction would overall result in a net reduction in impervious surfaces on the site as the existing structures/impervious surfaces near the riparian corridor would be removed and replaced with bioretention facilities and landscape areas. In addition, as discussed in impact discussion a) above, the project would be implemented in compliance with the Construction Stormwater General Permit, which includes implementation of erosion control BMPs to reduce the risk of erosion or siltation. The impact of construction on alteration of drainage patterns, and addition of impervious surfaces would be less than significant.

**Operation/Occupancy**
Following construction, storm drain outlet pipes would be intercepted and routed to six new bioretention facilities throughout the project site to provide treatment of existing and proposed

impervious surfaces. In addition, as discussed above, the project would remove impervious surfaces in areas adjacent the riparian corridor and would replace the impervious surfaces with bioretention and landscaping areas. The proposed bioretention facilities and self-retaining areas would not only treat runoff from the new impervious areas but would enhance stormwater infiltration and water quality, thus improving water quality of runoff entering Lagunitas Creek. In addition, the existing mulched playground would be converted into a self-retaining area that would accept runoff from the uphill site to allow for infiltration into the ground. The project would result in reduced impervious surface area and increased bioretention self-retaining areas during operation and would therefore be expected to result in reduced sediment loading and provide increased treatment of runoff to Lagunitas Creek. The project impact would be less than significant, and no mitigation is required.

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

**Construction**

Construction of the project would involve demolition of existing structures and grading/construction of new bioretention areas within the 100-year floodplain. Heavy equipment may also be stored within parking areas that are within the 100-year floodplain. Minor grading to construct the bioretention areas and storage of construction equipment have the potential to release pollutants if the project area were flooded and inundated during the construction period. While the risk of flooding is very low during the 12-month construction period, the construction activities would create an impact if flooded. The Construction Stormwater General Permit requires BMPs to be implemented prior to rain events to avoid the risk of sediment mobilization in rain events or flooding. Mitigation Measure HYDRO-2 requires staging and storage of construction equipment and equipment refueling outside of the 100-year floodplain. Because equipment would be stored outside of the 100-year floodplain, the impact from release of pollutants due to flooding would be less than significant.

**Operation**

The project would rehabilitate existing residential structures, some of which are located within the FEMA floodplain. The project would not construct any new structures within the FEMA floodplain. The proposed wastewater treatment system would be located outside of the FEMA floodplain and would not result in a risk of pollutants in the event of flooding inundation. No proposed structures are located within a tsunami or seiche inundation area. While the project would introduce new inhabitants to the project area after construction, the reoccupation of the site would not create a new risk of pollutants as all waste would be properly stored in covered bins and there would be improved stormwater management and treatment with the improved stormwater bioretention systems that would be installed as part of the project. With implementation of the proposed stormwater improvements, the project could have a lower risk of release of sediment and pollutants in the event of inundation due to improved stormwater management.

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

**Water Quality Control Plan**

The proposed project is also managed by the San Francisco Bay Basin Water Quality Control Plan (2010), which outlines water quality objectives as well as water quality attainment strategies and TMDLs. The project area is adjacent Lagunitas Creek, which has an adopted TMDL for sediment. TMDL includes specific quantities of sediment for landslides, gullies, and soil creep; roads; tributary channels; and channel incision and bank erosion. The project is not a source of sediment that is addressed in the TMDL and would therefore not conflict with the TMDL.

During construction, the project has the potential to generate sediment in runoff. All contractors would follow the project's SWPPP, which requires compliance with Provision E.12 of the statewide Phase II municipal stormwater NPDES permit reissued by the California State Water Resources Control Board in 2013. In addition, the project would need to comply with the Construction Stormwater General Permit (Order No. 2022-057-DWQ) (SWRCB 2022). In compliance with the Construction Stormwater General Permit, a SWPPP would be implemented as part of the project and would include specific BMPs and design and conservation measures that would be used to control construction area erosion and transport of sediment to Lagunitas Creek. The measures include erosion control BMPs (e.g., silt fences, straw wattles, seed-free mulching) and revegetation with native plants as well as source control BMPs to address potential leaks or spills of hazardous materials and avoid transport of any hazardous materials (e.g., fuels, lubricants, hydraulic fluid, paints, solvents) to Lagunitas Creek. The project would also install new bioretention areas to capture and treat stormwater runoff from the site, which would improve the quality of runoff water from the site compared to existing conditions. Because the project would comply with the Construction Stormwater General Permit, including implementation of a SWPPP during construction, the project would not conflict with or obstruct implementation of a water quality control plan.

**Sustainable Groundwater Management Plan**

The project area does not overlie a groundwater basin defined by the State of California. No groundwater sustainability plan has been adopted for the area. Therefore, the project would not conflict with any sustainable groundwater management plan.

### Mitigation Measures

**Mitigation Measure HYDRO-1: Protection of NMWD Water Supply Wells**

***Modify Leach Field to Avoid Protection Zone***

The Applicant shall modify the leach field design to avoid application of treated wastewater within the Zone A Protection Zone of NMWD groundwater supply wells.

***Design Review***

Design of the tertiary treated wastewater system is subject to review by the San Francisco Bay Regional Water Quality Control Board and Division of Drinking Water and permitting by the

San Francisco Bay Regional Water Quality Control Board. The proposed wastewater system will require a Report of Waste Discharge Form 200 and a Title 22 Engineering Report as part of the application process to meet the Waste Discharge Requirements of the State. The Title 22 Engineering Report shall also be submitted to the NMWD and County for informational purposes.

***Use of Wastewater for Irrigation: Timing***

Tertiary treated wastewater shall not be applied to landscaping irrigation within 24 hours of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the land application area surface soil is saturated. Application of treated wastewater for landscape irrigation shall further only occur when the depth to groundwater in the area of irrigation is a minimum of 4.5 feet or more below the ground surface, based on groundwater monitoring data allowing a minimum of 3 feet of separation between the drip dispersal and the groundwater table. Application of treated wastewater for irrigation shall not exceed the agronomic rate[3]. The agronomic rate will be monitored daily using an onsite irrigation controller to determine real time daily evapotranspiration rates and calculate run times for wastewater dispersal for irrigation.

***Monitoring of Effluent***

Monitoring of the effluent from the wastewater treatment system shall be completed per the Regional Water Quality Control Board issued Monitoring and Reporting Program included in the Notice of Applicability for enrollment in the 2014 WDR General Order. The Notice of Applicability must be issued prior to recycled water production and use. Constituents that would be monitored and reported on are listed in the table below.

Should the effluent exceed the UV transmittance threshold specified in the National Water Research Institute Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, turbidity threshold of 10 NTU at any time,, or other standard specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the treated wastewater shall not be applied within any area within the NMWD Zone A Protection Zone, including any portion of the leach field located in the Zone A Protection Zone. No application of effluent shall be allowed within the Zone A Protection Zone until the treatment system is repaired and the effluent quality is demonstrated to meet the water quality objectives. During periods when the effluent is not meeting water quality standards specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the effluent shall be stored in a tank and

[3] The agronomic rate is defined as "The rate of application of recycled water to plants necessary to satisfy the plants' evapotranspiration requirements, considering allowances for supplemental water (e.g., effective precipitation), irrigation distribution uniformity, and leaching requirement, thus minimizing the movement of nutrients below the plants' root zone."

transferred to a wastewater treatment facility, if needed while maintenance is conducted on the wastewater treatment system.

| Constituent | Units | Sample type | Reporting frequency |
|---|---|---|---|
| Influent TN | mg/L | Grab | Quarterly |
| Flow rate (effluent) | gpd | Meter | Quarterly |
| BOD (effluent) | mg/L | Grab | Quarterly |
| Nitrogen series (effluent)[1] | mg/L | Grab | Quarterly |
| Total suspended solids (effluent) | mg/L | Grab | Quarterly |
| Total coliform bacteria (downstream of disinfection units) | MPN/100 mL | Grab | Quarterly |
| Turbidity (downstream of disinfection units) | NTU | Meter | Quarterly |
| UV dose | $mJ/cm^2$ | Meter / Calculate | Quarterly |
| UV transmittance | % | Meter | Quarterly |

*Groundwater Monitoring*

A Groundwater Monitoring and Mitigation Plan (GMMP) shall be prepared for the project by a qualified hydrologist or hydrogeologist. The groundwater quality monitoring program must comply with monitoring and reporting requirements issued by the Regional Water Quality Control Board. The GMMP shall include specifics on the procedures and timing for groundwater monitoring and reporting as well as action criteria and responses to action criteria. At a minimum, the GMMP shall include:

- Quarterly groundwater sampling and water quality monitoring between the irrigated areas and NMWD wells using the existing wells CG-2 and CG-3 and two additional monitoring wells
- Quarterly reporting to RWQCB, NMWD, and the County with the results of the monitoring program
- Performance criteria:
  - The water quality within the groundwater monitoring wells between the area of application and NMWD drinking water wells shall not exceed 10 mg/L of nitrate (NO3) . Nitrate is used as an indicator of the treated wastewater given that the background levels of nitrate are less than the treatment standard for the wastewater system.
- Corrective actions: If the intervening groundwater well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected. Additional corrective actions including but

not limited to, repairs or replacement of equipment, additional monitoring, or other actions, will be defined as appropriate depending on the exceedance detected and potential causes of the exceedance.

***Reporting***

Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days documenting the violation and corrective actions taken to address the violation.

Water quality monitoring reports shall be prepared quarterly and submitted to the RWQCB, NMWD, and County for review. The quarterly reports shall contain the daily and monthly groundwater and effluent monitoring results for the prior quarter, identify any exceedances of the water quality standards or performance criteria, and actions taken to address the exceedance. An annual report shall also be submitted to the RWQCB consistent with all regulatory requirements and permit conditions. Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site.

***Alternative Uses of Treated Effluent***

Alternative uses of treated effluent may also include but not be limited to the following and would be based on Regional Water Board and Division of Drinking Water approval:

- Use in off-site landscaping
- Recycled water refill station

**Mitigation Measure HYDRO-2: Avoid Equipment Staging and Storage in 100-Year Floodplain**

All equipment staging and storage areas shall be located outside of the 100-year floodplain. Any equipment-refueling activities shall be conducted within designated staging or storage areas with secondary containment for any potential spills of fuel.

## 3.2.11 Land Use and Planning

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **11. LAND USE AND PLANNING. Would the project:** | | | | |
| a) Physically divide an established community? | ☐ | ☐ | ☐ | ☒ |
| b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☒ | ☐ | ☐ |

### Environmental Settings

The project site is located in the Coastal Zone within unincorporated Marin County and is subject to the Marin County LCP. The majority of the project site has a land use designation of Coastal Open Space and is zoned C-OA-Coastal, Open Area. A small portion of the western edge of the project site is designated Coastal Single Family and is zoned C-RA-B3-Coastal, Residential, Agriculture. Land uses immediately surrounding the project site include residential development to the west, an undeveloped lot to the north, and open space along Lagunitas Creek to the east and south.

### Discussion

**a) Would the Project physically divide an established community?**

The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community or between a community and an outlying area. The project site is located on the southern limits of the developed residential area in Point Reyes. The project would rehabilitate the existing residential structures at the site. The project does not involve construction of any physical features or removal of access that would physically divide an established community. Therefore, no impact would occur.

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

The LCP contains several policies that were adopted to avoid or mitigate environmental effects. Table 3.2-12, below, identifies LCP policies applicable to the proposed project and, for each policy, evaluates whether the project would be consistent with the policy. As summarized in Table 3.2-12, the project would be consistent with all LCP policies relevant adopted for the purpose of avoiding or mitigating environmental effects; therefore, the impact would be less than significant.

**Table 3.2-12 LCP Land Use Plan Policies**

| Policy | Consistency Determination |
|---|---|
| **C-BIO-2 ESHA Protection.**<br>3. Protect ESHAs against distribution of habitat values and only allow uses within those areas that are dependent on those resources or otherwise specifically provided in C-BIO-14 (Wetlands), C-BIO-15 (Diking, Filling, Draining, and Dredging) or C-BIO-23 (Coastal Streams and Riparian Vegetation). Distribution of habitat values includes when the physical habitat is significantly altered or when species diversity or the abundance or viability of species population is reduced. The type of proposed development, the particulars of its design, and its location in relation to the habitat areas, will affect the determination of distribution.<br>4. Accessways and trails that are fundamentally associated with the interpretation of the resource are resource dependent uses that shall be sited and designed to protect ESHAs against significant disruption of habitat values in accordance with Policy C-BIO-2.1. Where it is not feasible to avoid ESHA, the design and development of accessways and trails shall minimize intrusions to the smallest feasible area and least impacting routes. As necessary to protect ESHAs, trails shall incorporate measures to control the timing, intensity or location of access (e.g., seasonal closures, placement of boardwalks, limited fencing, etc.).<br>5. Avoid fence types, roads, and structures that significantly inhibit wildlife movement, especially access to water.<br>6. Development proposals within or adjacent to ESHA will be reviewed subject to a biological site assessment prepared by a qualified biologist hired by the County and paid for by the applicant. The purpose of the biological site assessment is to confirm the extent of the ESHA, document any site constraints and the presence of other sensitive biological resources, recommend buffers, development timing, mitigation measures including precise required setbacks, provide a site restoration program where necessary, and provide other information, analysis and modifications appropriate to protect the resource. | 3. The project has been designed to avoid development within ESHA and ESHA buffers, as shown in Figure 2.2-3. The project area currently contains nonconforming structures/uses within the 100-foot seasonal wetland ESHA buffer. As a result, the project would require a reduced 50-foot buffer to remove the nonconforming structure and construction bioretention areas and install landscaping. Because the activities within the wetland buffer remove existing nonconforming structures and replace those structures with bioretention facilities that would improve habitat values, the project is consistent with the policy C-BIO-2, item 3.<br>4. The project does not involve construction of any new accessways or trails. The project would not conflict with policy C-BIO-2 ESHA, item 4, because no accessways or trails would be installed in ESHA.<br>5. The project would not install any new roads or fences. The project would therefore not conflict with policy C-BIO-2 ESHA, item 5, because no fences, roads, or other structures would be installed that would inhibit wildlife movement.<br>6. A biological site assessment was prepared for the project site by a qualified biologist. The biological site assessment provides the extent of ESHA and documents site constraints and the presence of sensitive biological resources. The biological site assessment is provided in Appendix B. The project would not conflict with policy C-BIO-2-ESHA, item 6, because a biological site assessment has been prepared. |
| **C-BIO-3 ESHA Buffers.**<br>1. In areas adjacent to ESHAs and parks and recreation areas, site and design development to | The project site contains four aquatic ESHAs including perennial stream, riparian arroyo willow thicket, Corps seasonal wetland (three parameter), and CCC seasonal |

| Policy | Consistency Determination |
|---|---|
| prevent impacts that would significantly degrade those areas, and to be compatible with the continued viability of those habitat and recreation areas.<br>2. Provide buffers for wetlands, streams and riparian vegetation in accordance with C-BIO-18 and C-BIO-23, respectively.<br>3. Establish buffers for terrestrial ESHA to provide separation from development impacts. Maintain such buffers in a natural condition, allowing only those uses that will not significantly degrade the habitat. Buffers for terrestrial ESHA shall be 50 feet, a width that may be adjusted by the County as appropriate to protect the habitat value of the resource, but in no case shall be less than 25 feet. Such adjustment shall be made on the basis of a biological site assessment supported by evidence that includes but is not limited to:<br>a. Sensitivity of the ESHA to disturbance;<br>b. Habitat requirements of the ESHA, including the migratory patterns of affected species and tendency to return each season to the same nest site or breeding colony;<br>c. Topography of the site;<br>d. Movement of stormwater;<br>e. Permeability of the soils and depth to water table;<br>f. Vegetation present;<br>g. Unique site conditions;<br>h. Whether vegetative, natural topographic, or built features (e.g., roads, structures) provide a physical barrier between the proposed development and the ESHA; and<br>i. The likelihood of increased human activity and disturbance resulting from the project relative to existing development. | wetland (one parameter). The LCP requires a 50-foot setback from riparian arroyo willow thicket and a portion of the perennial stream (Lagunitas Creek) within the project site and requires a 100-foot buffer from periphery of seasonal wetlands. Due to the previously developed nature of the project area, which includes existing structures and uses within the 100-foot wetland ESHA buffer, work cannot be avoided within the minimum 100-foot wetland ESHA buffers. The activities proposed within the 100-foot wetland ESHA buffers include removal of existing non-residential construction and installation of new bioretention areas and landscaping, which would provide a long-term benefit to vegetation, hydrology, and habitat. The adjustment to the standard ESHA buffer was made on the basis of the biological site assessment (Appendix B) and the proposed benefits of the activities within the reduced ESHA buffer. The project would not conflict with policy C-BIO-3 ESHA buffers because the project applies the required ESHA buffers, with the exception of areas required to remove existing structures and provide benefits to ESHA. |
| **C-BIO-4 Protect Major Vegetation.** Require a Coastal Permit for the removal or harvesting of major vegetation other than for agricultural purposes. Such major vegetation removal shall avoid ESHA, ESHA buffers, coastal waters, and public views, and shall not conflict with prior conditions of approval. | Per the LCP, major vegetation includes any vegetation that is in ESHA or its buffer or heritage trees. The project includes removal of seven trees within the ESHA buffer, which are predominantly eucalyptus, dead trees, and other ornamental trees. None of the trees proposed for removal are on the Marin County LCP-Implementation Plan list of Heritage or Protected Trees. Implementation of the project would not conflict with C-BIO-4 because the few trees removed from ESHA are not protected trees. |

| Policy | Consistency Determination |
|---|---|
| **C-BIO-5 Ecological Restoration.** Encourage the restoration and enhancement of degraded ESHAs and the creation of new ESHAs, and streamline regulatory processes whenever possible to facilitate the successful completion of restoration projects. | The project would remove existing structures from an ESHA buffer and would install bioretention facilities that help improve water quality within the ESHA, and the project would be consistent with policy C-BIO-5. |
| **C-BIO-10 Roosting and Nesting Habitat.** Prohibit the alteration or removal of groves of trees that provide colonial nesting and roosting habitat for monarch butterflies or other wildlife, except where the trees pose a threat to life or property. | The project would remove diseased eucalyptus that would present a risk to life and property and would not remove any groves of trees. The eucalyptus tree removal timing would also be scheduled to avoid the roosting season for monarch butterflies, consistent with Mitigation Measure BIO-1. The project would be consistent with policy C-BIO-10 with implementation of mitigation. |
| **C-BIO-11 Development Adjacent to Roosting and Nesting Habitat.** Development adjacent to wildlife nesting and roosting areas shall be set back a sufficient distance to protect against disruption in nesting and roosting activities and designed to avoid impacts on the habitat area. Time such development activities so that disturbance to nesting and breeding wildlife is avoided. To the extent feasible, use native vegetation for landscaping. | The project would implement Mitigation Measures BIO-1, BIO-2. and Marin Development Code section 22.20.040 to avoid any project activities such as tree removal or structure demolition during times that could disrupt roosting or nesting habitat to the extent feasible and when avoidance of the nesting and roosting season is not feasible, ensuring the removal is completed under the direction of a qualified biologist to avoid impacts on any nesting or roosting behavior. Because the project would implement ESHA buffers, enhance native vegetation through planting native species, and implement Mitigation Measures BIO-1, BIO-2 and Marin Development Code section 22.20.040, the project would not conflict with policy C-BIO-11, and the impact would be less than significant with mitigation incorporated. |
| **C-WR-2 Water Quality Impacts of Development Projects.** Site and design development, including changes in use or intensity of use, to prevent, reduce, or remove pollutant discharges and to minimize increases in stormwater runoff volume and rate to prevent adverse impacts to coastal waters to the maximum extent practicable. All coastal permits, for both new development and modifications to existing development, and including those for developments covered by the current National Pollutant Discharge Elimination System (NPDES) Phase II permit, shall be subject to this review. Where required by the nature and extent of a proposed project and where deemed appropriate by County staff, a project subject to this review shall have a plan which addresses both temporary (during construction) and permanent (post-construction) measures to control erosion and sedimentation, to reduce or prevent pollutants from entering storm drains, drainage systems | The project has been sited on the location of former housing and would use the existing residential structures and impervious surfaces to reduce the potential for changes in runoff volume. The project would comply with the current NPDES Phase II permit, as discussed in Section 3.2.10 and the Stormwater Control Plan (Appendix G).<br>The project design includes permanent BMPs, including new bioretention areas to provide treatment of stormwater runoff from the site. As discussed above, the project would also minimize impervious surfaces by using existing paved surfaces and structures thereby limiting areas of new disturbance. Because the project would comply with the NPDES Phase II permit and includes permanent BMPs consistent with policy C-WR-2, the project would be consistent with LCP policy C-WR-2, and the impact would be less than significant. |

| Policy | Consistency Determination |
|---|---|
| and watercourses, and to minimize increases in stormwater runoff volume and rate.<br>Permanent Best Management Practices (BMPs) that protect water quality and minimize increases in runoff volume and rate shall be incorporated in the project design of developments. Site design and source control measures shall be given high priority as the preferred means of controlling pollutant discharges and runoff volume and rate. Typical measures shall include:<br>1. Minimizing impervious area;<br>2. Limiting site disturbance;<br>3. Protecting areas that are particularly susceptible to erosion and sediment loss, ensuring that water runoff beyond pre-project levels is retained on site whenever possible, and using other Low Impact Development (LID) techniques; and<br>4. Methods that reduce potential pollutants at their sources and/or avoid entrainment of pollutants in runoff. Such methods include scheduling construction based on time of year, prohibiting erosion-causing practices, and implementing maintenance and operational procedures. Examples include covering outdoor storage areas, using efficient irrigation, and minimizing the use of landscaping chemicals. | |
| **C-DES-I Compatible Design.** Ensure the siting, height, scale, and design (including materials and color) of new structures are compatible with the character of the surrounding natural and built environment. Structures shall be designed to follow the natural contours of the land and shall limit reflectivity of glass and other surfaces. | The project would repurpose existing buildings and would not change the siting, height, or scale of the structures. As discussed in Aesthetics impact discussion c) above, the site has minimal visibility from surrounding areas, and the reuse of the existing structures with affordable housing would be compatible with the character of the natural and built environment. As discussed in Aesthetics impact discussion d) above, the site would not generate glare on surrounding areas. The glass/windows would replace existing windows. The project would be consistent with policy C-DES-I, and the impact would be less than significant. |
| **C-DES-8 Protection of Trees.** Site structures and roads to avoid removal of trees that contribute to the area's scenic and visual resources, except where required to maintain defensible space for structures or eliminate diseased trees that threaten surrounding structure or vegetation and where removal is otherwise consistent with LCP policies. Dead trees may serve as valuable habitat for some species, so avoid complete removal where appropriate. | The project includes removal of a total of 32 trees. None of the 32 trees that would be removed contribute to the area's scenic and visual resources. As discussed in Section 3.2.1, the project site has very minimal visibility to any area outside of the project site. In addition the 32 trees that would be removed are non-native ornamental trees or dead trees. The project would also involve the planting of 47 trees and result in a net increase of 9 trees in the area. Because the roads and structures are existing roads and structures, the trees would not be |

| Policy | Consistency Determination |
|---|---|
| | removed for siting of any roads or structures. Therefore, the project is consistent with policy C-DES-8, and the impact would be less than significant. |

### Mitigation Measures

Mitigation Measures BIO-1 and BIO-2 (see section 3.2.4).

### 3.2.12 Mineral Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **12. MINERAL RESOURCES. Would the project:** | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ |
| b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☐ | ☒ |

#### Discussion

**a) Would the Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

Mining operations in the County primarily consist of crushed stone and alluvial deposits for construction materials, including asphaltic concrete, aggregate, road base and sub-base, and Portland cement concrete. Eight sites in the County have been designated by the State as having significant mineral resources. The project site is not located within a Mineral Resource Preservation Site designated by the State (County of Marin 2007).

The project site is currently developed with residential buildings. Furthermore, the proposed project site is surrounded by residential uses that are not compatible with mineral resource extraction activities. Because the site is currently developed with residential development, the residential use and occupation of the site would have no impact from loss of availability of known mineral resources.

**b) Would the Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

Refer to impact discussion a), above. The project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No impact would occur.

#### Mitigation Measures

None Required.

## 3.2.13 Noise

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **13. NOISE. Would the project result in:** | | | | |
| a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ☒ | ☐ |
| b) Generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ☒ | ☐ |
| c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☒ |

### Environmental Setting

#### Existing Noise Environment

Background noise levels in the project vicinity are generally low and consistent with low-density residential uses. Noise sources include vehicles on Commodore Webster Drive, SR-1, and Point Reyes Petaluma Road. The ambient noise level on the project site is assumed to be typical of a quiet, rural region, between 40 dBA and 55 dBA.

#### Noise Standards

##### *Federal and State Guidance*

CEQA does not specify a numerical threshold for "substantial increases" in noise, and no federal regulations that limit overall environmental noise levels are established; however, federal guidance documents address environmental noise and regulations for specific sources. The EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* in 1974, which provides information for state and local governments to use in developing their own ambient noise standards. The EPA determined that a day–night sound level of 55 dBA protects the public from indoor and outdoor activity interference.

The EPA, the Federal Highway Administration (FHWA), and the U.S. Department of Transportation (USDOT) have developed guidelines for noise. Under the authority of the Noise Control Act of 1972, the EPA established noise emission criteria and testing methods, published at 40 CFR part 204, which apply to some construction and transportation equipment (portable

air compressors and medium- and heavy-duty trucks). These regulations apply to trucks that would transport equipment to the proposed project site.

***Marin County Code***

The County has developed noise standards for offensive noise, which includes construction noise. Section 6.70.030 Enumerated Noises of the Marin County Code places restrictions on construction hours to limit noise nuisances. The County Code allows construction from 7 a.m. to 6 p.m. Monday through Friday and 9 a.m. to 5 p.m. on Saturday. Construction on Sundays and holidays is prohibited unless for emergencies or minor work or with written approval from the community development director. Section 6.70.030 is provided below:

5) Construction Activities and Related Noise.
    a) Hours for construction activities and other work undertaken in connection with building, plumbing, electrical, and other permits issued by the community development agency shall be limited to the following:
        i. Monday through Friday: seven a.m. to six p.m.
        ii. Saturday: 9 am to 5 pm
        iii. Prohibited on Sundays and Holidays (New Year's Day, President's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.)
    b) Loud noise-generating construction-related equipment (e.g., backhoes, generators, jackhammers) can be maintained, operated, or serviced at a construction site for permits administered by the community development agency from eight a.m. to five p.m. Monday through Friday only.
    c) Special exceptions to these limitations may occur for:
        i. Emergency work as defined in Section 22.130.030 of this code provided written notice is given to the community development director within forty-eight hours of commencing work;
        ii. Construction projects of city, county, state, other public agency, or other public utility;
        iii. When written permission of the community development director has been obtained, for showing of sufficient cause;
        iv. Minor jobs (e.g., painting, hand sanding, sweeping) with minimal/no noise impacts on surrounding properties;
        v. Modifications required by the review authority as a discretionary permit condition of approval.

***Marin Countywide Plan***

The Marin Countywide Plan sets acceptable noise levels for a variety of activities and types of land uses (see Figure 3-41 in Marin Countywide Plan) (County of Marin 2007). The Marin Countywide Plan provides practicable noise contours for the major noise sources down to a level of annual average 60 Ldn. The project site is adjacent areas designated as Residential – Multi-Family, which has an exterior noise standard of 50 to 65 dB for a normally acceptable level. The benchmark for allowable noise during nighttime hours 11 p.m. to 7 a.m. is 45 dB Leq.

The major noise sources for which noise contours have been developed in Marin County include major highways (Highway 37, Highway 101, and Highway 1) and major county roads (including Petaluma–Point Reyes Road).

### *Groundborne Vibrations*

Vibrating objects in contact with the ground radiate energy through the ground. Vibratory motion is commonly described by identifying the *peak particle velocity* (PPV). PPV is generally accepted as the most appropriate descriptor for evaluating the potential for building damage (Caltrans 2013). Table 3.2-13 provides the vibratory thresholds for damage to structures, depending on the type of construction. Background vibration levels on the proposed project site are low. Sources of vibration include vehicles traveling on Commodore Webster Drive, SR-1, and Point Reyes–Petaluma Road. These sources create negligible levels of vibration.

**Table 3.2-13 Construction Vibration Damage Criteria**

| Building category | PPV (inch per second [in./sec]) |
|---|---|
| Reinforced-concrete, steel, or timber (no plaster) | 0.5 |
| Engineered concrete and masonry (no plaster) | 0.3 |
| Non-engineered timber and masonry buildings | 0.2 |
| Buildings extremely susceptible to vibration damage | 0.12 |

*Source: (Federal Transit Administration FTA 2018)*

The County has not established quantitative vibration thresholds to regulate construction or operational related vibration. Caltrans recommends a vibration limit of 0.5 in./sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in./sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08 in./sec PPV for old buildings or buildings that are documented to be structurally weakened (Caltrans 2020).

### Sensitive Noise Receptors

Noise-sensitive land uses generally include those areas of habitation where the intrusion of noise could adversely affect occupancy, use, or enjoyment of the environment. The Marin Countywide Plan defines a *sensitive receptor* as a facility in which a number of individuals are highly susceptible to the adverse effects of air pollutants or noise (County of Marin 2007). The project site is bounded by the Point Reyes Affordable Homes to the west, an undeveloped lot to the north, and Lagunitas Creek to the east and south. Sensitive receptors in the vicinity of the proposed project site are residences at Point Reyes Affordable Homes located approximately 50 feet from the project site. The West Marin Elementary School is located approximately 0.25 mile north of the project site.

## Discussion

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

### Construction

Ambient noise levels in the proposed project vicinity are generally low and mostly consist of natural noises and human-made noises from nearby residents. Construction would occur over 12 to 24 months. Construction of the proposed project would generate a short-term increase in noise due to use of heavy equipment. Construction of the project would include typical heavy construction equipment including, but not limited to, excavators, backhoes, bobcats, manlifts, and extension forklifts. A detailed list of proposed construction equipment is included in Table 2.4-1. Estimated noise levels from construction equipment at 50 feet from the noise source are presented in Table 3.2-14, below.

**Table 3.2-14 Construction Equipment Noise Levels**

| Equipment | $L_{max}$ (dBA) at 50 feet | $L_{eq}$ (dBA) at 70 feet | $L_{eq}$ (dBA) at 85 feet |
|---|---|---|---|
| Manlift | 75 | 72 | 70 |
| Forklift | 79 to 84 | 76 to 81 | 74 to 79 |
| Pavers | 77 | 74 | 72 |
| Rollers | 80 | 77 | 75 |
| Dozers | 82 | 79 | 77 |

Note: Based on an estimate, not an actual measurement.

*Source: (Federal Transit Administration 2018)*

The nearest sensitive receptor is located approximately 50 feet from the project. Noise generated during the construction period would be sporadic and vary on a day-to-day basis, depending on the specific activities being undertaken at any given time. The County Code does not place a noise limit on construction noise. However, the County does place restrictions on allowable construction hours to limit noise nuisances. Construction would occur between the hours of 7 a.m. and 6 p.m. on Monday through Friday and between the hours of 9 a.m. and 5 p.m. on Saturday. No work would occur on Sundays or holidays. The proposed work schedule complies with the County Code (Section 6.70.030). Compliance with the County Code would ensure less-than-significant impacts during construction.

### Operation

Once construction is complete, occupancy of the residential properties would generally produce noise that is typical for a residential neighborhood, which is consistent with the surrounding conditions. The project includes four amplified special events per year. Marin County Code section 6.70.030 prohibits use of amplified sound between the hours of 11 p.m. and 7 a.m.

Because the special events would be required to comply with Marin County Code and would not produce amplified sound between the hours of 11 p.m. and 7 a.m., the impact from generation of noise during special events would be less than significant.

The on-site water treatment system would include pumps, aeration blowers, and a backup emergency generator to ensure consistent power supply during periodic power outages. The emergency generator is located adjacent the leech field and treatment building along the southern boundary of the project site. The emergency generator is located approximately 150 feet from the nearest residential receptor. Furthermore, the emergency generator would only be used sporadically in the case of emergencies causing power outages (e.g., storm events). All wastewater system equipment will either: (1) be inside enclosures, or (2) inside tanks below grade, accessed through manholes, which minimizes noise above-ground. The selected treatment technology includes a membrane-aerated bioreactor (MABR), which utilizes only low pressure blowers, which produce minimal noise. While the noise would be minimized by the enclosure, the specific equipment and enclosure design are subject to further engineering and design. The noise from operation of the wastewater treatment equipment has the potential to exceed the nighttime noise standard of 45 dB Leq at the nearest residential property. Exceedance of the County noise standards for residential areas would be a significant impact. Mitigation Measure NOI-1 specifies standards for the wastewater treatment plant design to reduce noise to a less than significant level. The impacts from operation would be less than significant with mitigation.

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

Groundborne vibrations would be generated during project construction because of the use of construction equipment and the presence of truck traffic. The proposed project would utilize bulldozers, rollers, and a drill rig that could generate groundborne vibration, as presented in Table 3.2-15, below. However, no construction equipment that could generate high levels of groundborne vibration (e.g., pile driving) would be utilized. The project area is located in an area with modern construction, where the vibration threshold for damage to structures is 0.3 PPV (in./sec). None of the equipment that would be used during construction of the project would exceed 0.3 PPV at a distance of 25 feet, and the nearest receptor, approximately 50 feet west, is not expected to experience vibrations. Operation of the proposed project would not generate groundborne vibration. Because the proposed project would not generate groundborne vibration that would exceed thresholds, the impacts from groundborne vibration would be less than significant.

**Table 3.2-15 Vibration Velocities for Construction Equipment**

| Equipment | Reference PPV at 25 feet (in./sec) | PPV at 5 feet (in./sec) |
|---|---|---|
| Large bulldozer [a] | 0.089 | 0.523 |

| Equipment | Reference PPV at 25 feet (in./sec) | PPV at 5 feet (in./sec) |
|---|---|---|
| Small bulldozer [b] | 0.003 | 0.018 |
| Loaded trucks | 0.076 | 0.446 |

Notes:

[a] *Large bulldozer* is used to represent vibration velocity for a medium excavator.

[b] *Small bulldozer* is used to represent vibration velocity for a small excavator.

*Source: (Federal Transit Administration 2018)*

**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?**

The proposed project is not located within 2 miles of a public airport, within an existing or projected airport land use plan, or in the vicinity of a private airstrip. The closest airport is the Marin County Airport, approximately 14 miles east of the project site. No impact would occur.

### Mitigation Measures

**Mitigation Measure NOI-1: Design of Wastewater Treatment System**

The wastewater treatment system, including enclosures, shall be designed so that noise levels generated by the wastewater treatment system do not exceed 45 dB at the nearest residential property line adjacent the wastewater treatment system. A Noise Mitigation Plan, including the final wastewater treatment plan operational equipment noise levels, proposed enclosures, and any noise attenuation devices shall be submitted to the County at least 60 days prior to construction of the wastewater treatment system. The County may specify additional measures to reduce noise levels from the wastewater treatment system during the design review process.

## 3.2.14 Population and Housing

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **14. POPULATION AND HOUSING. Would the project:** | | | | |
| a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☒ | ☐ |
| b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ |

### Environmental Settings

The project site currently contains 11 residential structures that were previously used at USCG housing. The residential structures on the project site are currently unoccupied.

**Housing & Safety Element Update to the Marin Countywide Plan**

A Housing Element is required to identify an adequate number of sites to meet the number of housing units assigned to the County by the Regional Housing Need Allocation (RHNA). As part of the most recent Housing & Safety Element Update to the Marin Countywide Plan, the County considered site locations throughout unincorporated county areas to meet its goal of affirmatively furthering fair housing. The Housing Element also provides the policy framework and identifies actions the County will take to remove housing constraints and promote housing that addresses community needs.

The initial site identification process studied up to 10,993 units on 150 possible "Candidate Housing Sites" that were suitable for residential development within the Housing Element planning period of 2023 through 2031. The unit development potential includes Accessory Dwelling Units, and Density Bonus allowances. After consideration of community input and environmental hazards, the Marin County Planning Commission and Board of Supervisors selected from the Candidate Housing Sites to identify the "Project Sites" to meet the County's RHNA of 3,569 units. The proposed project site was included and analyzed as a Project Site towards meeting the County's RHNA.

### Discussion

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

The project proposes to redevelop an existing site with 54 housing units (53 affordable housing units and one manager's unit). The project is estimated to have 215 residents, based on the distribution of four-bedroom, two-bedroom, and one-bedroom apartment units. It is expected that residents will be existing residents of Marin County; however, some residents could be new residents to the County and possibly to the greater Bay Area. The residential units on the site were previously occupied by a comparable number of people to those who would be living in the new affordable housing units. This would not cause unplanned population growth as the population of the site was previously planned for when the site was first developed in 1974.

Given the project would create affordable housing in an area where the need outweighs the existing stock, it is not expected to induce population growth. The existing lack of affordable housing in the region suggests the project could help to address the housing crisis and house people in the community who are currently unhoused or facing displacement. Because the project would replace existing housing with a similar number of units and the project would create affordable housing, the impact on population growth would be less than significant.

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

The project would not displace any people or housing. The housing units on the project site are currently unoccupied, and the project would allow for future occupation of those same residential units. No residential units would be displaced. Therefore, no impact would occur.

### Mitigation Measures

None required.

## 3.2.15 Public Services

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **15. PUBLIC SERVICES.** | | | | |
| a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: | | | | |
| Fire protection? | ☐ | ☐ | ☒ | ☐ |
| Police protection? | ☐ | ☐ | ☒ | ☐ |
| Schools? | ☐ | ☐ | ☒ | ☐ |
| Parks? | ☐ | ☐ | ☒ | ☐ |
| Other public facilities? | ☐ | ☐ | ☒ | ☐ |

### Environmental Settings

The public services located in proximity to the project site are shown on Figure 3.2-4.

**Fire protection**

The nearest fire department to the project site is the Marin County Fire Department station located in Point Reyes Station, located approximately 0.2 mile northwest of the project site, located at corner of 4th Street and B Street.

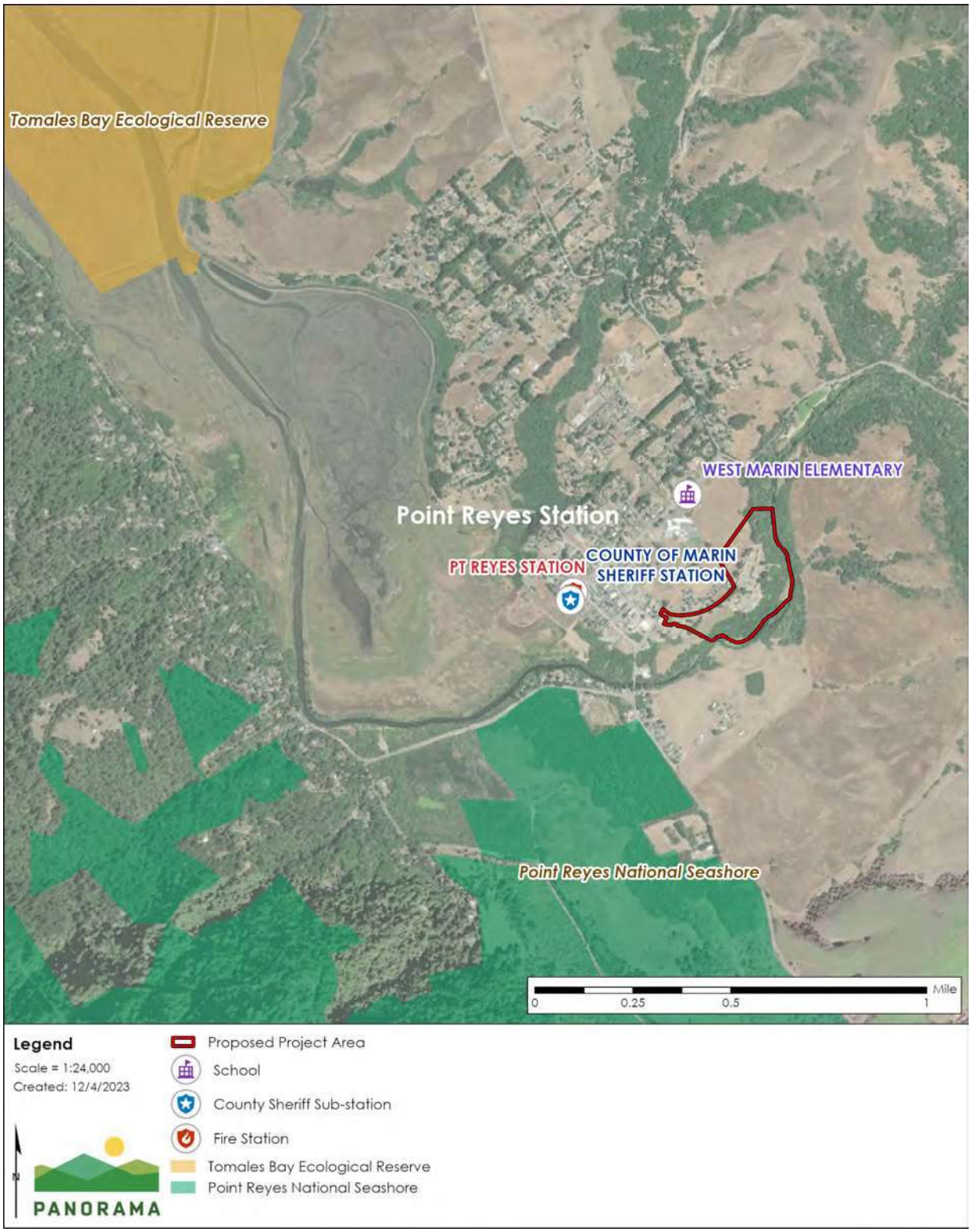
**Police protection**

The Marin County Sherriff's Office is located adjacent the fire department in Point Reyes Station, approximately 0.2 mile northwest of the project site.

**Schools**

The project is located within the Shoreline Unified School District. Schools that would serve the project site include West Marin Elementary School (kindergarten through eighth grade), located approximately 0.1 mile north of the project site, and Tomales Bay High School, located approximately 18 miles north of the project site.

**Figure 3.2-4 Public Services**




*Source: (Maxar, 2021; Siegal & Strain Architects, 2023; County of Marin, 2023; County of Marin, 2023; California Protected Areas Database, 2023; County of Marin, 2023)*

**Parks**
The project site is located in proximity to Tomales Bay and Point Reyes National Seashore, which are popular tourist destinations attracting approximately 2.5 million visitors annually. No County parks are located in proximity to the project site.

**Other public facilities**
Other public facilities include other government and municipal buildings or facilities such as libraries, post offices, or hospitals. The Point Reyes Station Library and post office are located within 0.25 mile northwest of the project site. The nearest hospital to the project site is the West Marin Medical Center, located directly west of the project site.

### Discussion

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

**Fire and Police Services**
Fire and emergency response would be provided by Marin County Fire Department, and law enforcement would be provided by Marin County Sheriff's Office. The Marin County Fire Department and Marin County Sheriff's Office sub-station are located in the same building, which also contains the HAM radio disaster communication command center. The fire station includes five units: Structural Firefighting Engine, a wildland firefighting engine, a paramedic rescue ambulance, a utility pick-up truck, and a flood evacuation boat.

The project site was previously occupied by residences when it was used as USCG housing. The reoccupation of the site for affordable housing with a total of 54 units would not result in the need for new or physically altered government facilities. The new residential facilities would be within existing residential areas within Point Reyes that are already served by the existing fire department and sheriff's office. The reoccupation of the site would not create a need for new fire protection and police facilities. Therefore, there would be no impact from the construction of fire or police facilities, and the impact on fire and police services would be less than significant.

**Schools**
West Marin Elementary School has a current enrollment of 121 students, and Tomales High school has an enrollment of 143 students (California Department of Education 2023). The previous use of the site as USCG housing generated students that attended the local school district. Reoccupation of the project site would generate students who would attend local schools. Because there is sufficient capacity for the students at the local schools, the project would not create the need for new schools, and the impact would be less than significant.

**Parks**

The project involves rehabilitation of existing housing units to allow for affordable housing. The reoccupation of the existing housing units for affordable housing would not generate a need for new parks and would not affect existing parks as there are no County parks in proximity to the project site. The primary demand for parks/recreation in the area (including the nearby Point Reyes National Seashore, managed by the NPS) is tourist traffic. The impact of the project on the need for new or physically altered parks would therefore be less than significant.

**Other Public Facilities**

The project would not require other public facilities or result in the need for physically altered facilities. The demand for other public facilities would be similar under existing conditions and after construction of the project because the project would replace existing housing units and would generate a small number of residents. The impact on other public facilities would therefore be less than significant.

### Mitigation Measures

None required.

## 3.2.16 Recreation

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **16. RECREATION.** | | | | |
| a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ |
| b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | ☐ | ☐ | ☒ | ☐ |

### Environmental Settings

The project is located within unincorporated Marin County. Marin County Parks manages approximately 932 acres of parks, including playing fields, pools, golf courses, tennis and volleyball courts, skate parks, and children's playgrounds (County of Marin 2007). The project is also located near NPS Point Reyes National Seashore, which attracts approximately 2.5 million visitors per year.

### Discussion

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

The project could result in an incremental increase in the use of parks, but the amount of additional use would be negligible relative to the existing use of parks and other recreational facilities. This incremental increase in usage would not result in substantial physical deterioration of the facilities. Therefore, a less than significant impact would occur.

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

The project site currently includes an aboveground pool and spa, which would be demolished and replaced with a new playground, multi-sport court, and resident gathering spaces. An existing tennis court would be removed and regraded to natural conditions and planted with native species to improve ecological functions, permeability, and drainage. Because the project would replace existing recreational facilities in the same area and would not create any new recreational facilities in undisturbed areas, the recreational facilities would not result in an adverse physical effect on the environment, and the impact would be less than significant.

**Mitigation Measures**

None required.

## 3.2.17 Transportation

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **17. TRANSPORTATION. Would the project:** | | | | |
| a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? | ☐ | ☐ | ☒ | ☐ |
| b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? | ☐ | ☐ | ☒ | ☐ |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | ☐ | ☒ | ☐ | ☐ |
| d) Result in inadequate emergency access? | ☐ | ☐ | ☒ | ☐ |

### Environmental Settings

Access to the project site would be provided by Commodore Webster Drive from Mesa Road and State Highway 1. Internal vehicular circulation is provided by Commodore Webster Drive. Commodore Webster Drive is an existing paved, two-lane private road that terminates at the southeastern end of the project site. There are existing Class III bicycle routes on Point Reyes–Petaluma Road between State Highway 1 and Platform Bridge Road and on Sir Francis Drake Boulevard to the west of Point Reyes Station (Figure 3.2-5).

### Discussion

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

The Marin County Countywide Plan establishes a *level of service* (LOS) standard of LOS D or better for urban and suburban arterials and LOS E or better for freeways and rural expressways. However, SB 743, which was passed in 2013, adopted vehicle miles traveled (VMT) as a metric for assessing transportation impacts under CEQA, which is detailed below. The proposed redevelopment of the site from the former USCG housing units to affordable housing in an area that is currently serviced by existing roads would not require any new roads and would not conflict with policies related to non-motorized travel such as transit, roadway, bicycle, or pedestrian facilities. The project would provide 119 parking spaces, including eight ADA compliance spaces and 24 electric vehicle spaces as well as 62 long-term and 44 short-term bicycle parking spots. The proposed parking accessibility, electric vehicle parking, and bicycle parking would be consistent with policies for the transit system. Therefore, the project would not conflict with any program or policy addressing the circulation system, and the impact would be less than significant.

**Figure 3.2-5 Roadway Network**



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

In accordance with the *Technical Advisory on Evaluating Transportation Impacts in CEQA*, Section 21099 of the Public Resources Code 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 (Governor's Office of Planning and Research 2018). The Governor's Office of Planning and Research (OPR) identifies screening thresholds to identify projects that would have a less than significant impact based on project size, project type, and transit availability. Based on OPR thresholds, 100-percent affordable housing projects are assumed to have a less than significant impact on VMT. Since the project proposes only affordable housing, with one manager's unit to serve the affordable housing, the impact from generation of VMT would be less than significant consistent with OPR guidance.

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

**Construction**
A maximum of 30 workers would be required for the project construction at any given time. Approximately 160 truck trips from construction equipment and vehicles would occur during construction. Trucks would access the site from Highway 1 to Mesa Road and enter the site on Commodore Webster Road. No new construction of roads or other transportation facilities are proposed. Access to the project site would result in increased truck traffic on Highway 1 in front of West Marin Elementary School. Increased heavy truck traffic on Highway 1 during elementary school drop off or pickup times could result in increased hazards for students attending the elementary school, which would be a significant impact. Mitigation Measure TRA-1 requires coordination with the local elementary school and timing truck deliveries to avoid travel on Highway 1 in front of West Marin Elementary School during drop-off and pickup times. With implementation of Mitigation Measure TRA-1, impacts from increased traffic hazards would be less than significant with mitigation.

**Operation/Occupancy**
The project would use existing roads, including Commodore Webster Road, for access and would not modify or construct any new roads. Therefore, the project would not introduce any safety hazards and the impact would be less than significant.

**d) Would the Project result in inadequate emergency access?**

Emergency vehicles would enter the project site through Commodore Webster Drive from Mesa Road. All project driveways and access points would comply with County fire safety standards to maximize entry and egress space for emergency vehicles. A hammerhead turnaround for fire apparatus would be provided north of Building 50, and a cul-de-sac turnaround would be provided at the terminus of Commodore Webster Road, at the northern edge of the project site.

Because the project would comply with County requirements for emergency access, the impact on emergency access would be less than significant impact.

### Mitigation Measures

**Mitigation Measure TRA-1: Traffic Management Plan**
Prior to initiation of construction, the Project contractor(s) shall use a qualified traffic engineer to prepare a Traffic Management Plan (TMP) in compliance with the California Manual on Uniform Traffic Control Devices. The TMP shall be incorporated into the contract documents and specifications. The TMP shall include, but not necessarily be limited to, the elements listed below:

- The construction contractor shall confirm with the West Marin Elementary School the typical start and dismissal times, school events, and irregular start and dismissal times prior to the start of construction.
- The construction contractor shall avoid hauling/truck traffic on Highway 1 in front of West Marin Elementary School within 1 hour prior to the start of school and 1 hour following dismissal or special event times or equivalent method to avoid traffic hazards at the elementary school as defined in the TMP.
- Installation of traffic-control devices where traffic conditions warrant, as specified in the applicable jurisdiction's standards (e.g., the California Manual on Uniform Traffic Control Devices Part 6: Temporary Traffic Control); use of flaggers, when warranted, to control vehicle movements.
- Implementation of a public information program to notify interested parties of the impending construction activities using means such as signs posted around the project site.
- Compliance with roadside safety protocols to reduce the risk of accidents.
- Maintaining of access for emergency vehicles at all times.
- Storage all equipment and materials in designated contractor staging areas on or adjacent to the worksite in such a manner as to avoid obstruction to traffic including emergency vehicles.

## 3.2.18 Tribal Cultural Resources

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **18. TRIBAL CULTURAL RESOURCES** | | | | |
| a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: | | | | |
| i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | ☐ | ☒ | ☐ | ☐ |
| ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | ☐ | ☒ | ☐ | ☐ |

### Environmental Setting

*Tribal cultural resources* (TCRs) are defined as sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either included or determined to be eligible for inclusion in the California Register of Historical Resources (California Register), included in a local register of historical resources, or a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant. A cultural landscape that meets these criteria is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape. Historical resources, unique archaeological resources, or non-unique archaeological resources may also be tribal cultural resources if they meet these criteria.

#### Sacred Lands Inventory and Tribal Research

The Native American Heritage Commission (NAHC) works to identify, catalog, and protect places of special religious or social significance, graves, and cemeteries of Native Americans per the authority given in PRC section 5097.9. The NAHC was contacted to provide a Sacred Lands File (SLF) search and provide a list of Native American tribes affiliated with the project region (Evans & de Shazo, Inc. 2023). The SLF inventory request was submitted to NAHC on August 2,

2023, to inquire about listed sacred sites located within or near to the project area and to obtain a list of local Native American tribes who may have additional information about sacred sites, TCRs, or other properties of traditional religious and cultural importance located within or near to the project area. The NAHC responded on August 12, 2023, with information that the record search was negative for the presence of any sacred sites for the project area.

### AB 52 Consultation

On July 5, 2023, the County sent letters via email regarding the consultation opportunity for the project under AB 52 to all Native American individuals and organizations that the NAHC previously identified as having a traditional affiliation with Marin County and all others who requested to be consulted under AB 52. These letters included a project description, a project map, and contact information for appropriate County staff. Out of the groups contacted, FIGR responded and met with the County and archaeological consultants to consult on this project.

The County sent the initial notification of a consultation opportunity for this project to FIGR on July 5, 2023. On August 8, 2023, the County sent a follow-up notification via email to FIGR regarding the consultation opportunity for the project. On August 21, 2023, EDS Principal Archaeologist separately sent a letter to FIGR Chairman Greg Sarris, with the FIGR THPO in copy. On August 29, 2023, Ms. Evans sent an email to FIGR Cultural Resources Specialist Hector Garcia Cabrales to inquire about the availability of a tribal monitor to accompany the archaeologist during the field survey. Mr. Cabrales emailed Ms. Evans on September 1, 2023, to inform her that FIGR Tribal monitor Robin Meely was available for the field survey. Ms. Evans emailed Robin Meely on September 1, 2023, and provided information for the survey, such as when and where to meet, an aerial map and KMZ of the Project Area, and other details. Also, on September 1, 2023, Ms. Evans emailed Mr. Cabrales and provided the results of the NWIC record search, and she acknowledged receipt of the record search information. On September 5, 2023, Mr. Cabrales sent an email to Ms. Evans acknowledging receipt of the outreach letter sent to Mr. Sarris and the THPO on August 21, 2023. The email states that the project area is within the tribe's ancestral territory and there may be tribal cultural resource impacts. Accordingly, the tribe requested the results of the research efforts and recommendations be emailed to FIGR THPO Buffy McQuillen when available. On September 9, 2023, FIGR formally responded to the County regarding the AB 52 consultation notification and indicated that they were interested in consulting on the project. The results of the archaeological survey were provided to FIGR THPO Buffy McQuillen on October 16, 2023 by Ms. Evans, and a consultation meeting was held between FIGR and the County with Ms. Evans's participation on the same day, October 16, 2023.

To date, none of the other tribal organizations who were notified by the County regarding the AB 52 consultation opportunity have engaged in the consultation process. FIGR did not identify any TCRs within the project site during the consultation outreach process and no TCRs were identified during the archaeological field survey where a FIGR representative accompanied the archaeological staff in the field. However, this does not negate the potential for unidentified TCRs to be present within the project site.

### Discussion

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

Implementation of the proposed project would not impact any known listed or eligible TCR as no TCRs have been identified within the proposed project area. However, previously unidentified TCRs may be inadvertently discovered during ground-disturbing activities associated with the proposed project. If a TCR is encountered during construction, an impact on the TCR could occur. Mitigation Measure CUL-1 requires a professional archaeologist and a qualified tribal monitor to conduct cultural resources sensitivity training for workers, cessation of work within a 50-foot radius of any discovery of potential cultural resources (including TCRs), and that a FIGR representative evaluate the resource on site prior to any action being taken related to the discovery. The impact to undiscovered eligible TCRs would be less than significant with implementation of the mitigation measure.

### Mitigation Measures

Mitigation Measure CUL-1 (see Section 3.2.5).

## 3.2.19 Utilities and Service Systems

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **19. UTILITIES AND SERVICE SYSTEMS. Would the project:** | | | | |
| a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? | ☐ | ☒ | ☐ | ☐ |
| b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? | ☐ | ☐ | ☒ | ☐ |
| c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☐ | ☒ |
| d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? | ☐ | ☐ | ☒ | ☐ |
| e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? | ☐ | ☐ | ☒ | ☐ |

### Discussion

**a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

**Water Service**

The project is located within the NMWD service area. NMWD currently operates two groundwater supply wells on the project site. In June 2023, NMWD specified requirements for servicing water to the project site. NMWD's requirements direct that the Applicant shall enter into an agreement with the NMWD and execute financial arrangements for construction of a new groundwater facility prior to providing water service. NMWD also requires the following:

- NMWD would be given final building permit inspection hold for confirmation that all requirements of the project are satisfied.

- Occupancy approval shall not be granted until water service installation is complete and compliance with the Water Conservation requirements verified.
- As recycled water is to be used on premises that are served potable water, NMWD would require conformance with California requirements for design, construction, minimum separation from drinking water facilities, cross--connection control, and any other applicable regulation.
- Water service would not be furnished to any building unless it is connected to a public sewer system or to a wastewater disposal system approved by all government entities having regulatory jurisdictions.

Because NMWD's conditions include financial assurances for construction of a new groundwater well, the project could potentially result in construction of new water supply facilities. The project would only result in construction or relocation of water supply facilities if the proposed application of treated effluent effected NMWD's water supply wells. As discussed in Hydrology impact discussion b), Mitigation Measure HYDRO-1 specifies monitoring requirements and performance standards to avoid an impact on NMWD's water supply wells. Because the mitigation measure would be protective of water quality within NMWD's water supply wells on the project site, the project would not cause construction of new or relocated water supply facilities, and the impact would be less than significant with mitigation.

**Wastewater Treatment Facility**

Sewer service is not available in the project area. The project site currently contains below-ground tanks for limited on-site sewage collection and storage. When the property was used for USCG housing, wastewater was collected and transported to an offsite facility for disposal on a daily basis.

The project includes installation of a new wastewater treatment facility located on the project site, including a subsurface drip irrigation system and leach field. The wastewater treatment system would be located on the southwest edge of the project site, near the entrance on Commodore Webster Drive. The wastewater treatment system would consist of a Membrane Aerated Biofilm Reactor, which would be housed in a combination of underground tanks, aboveground container, treatment building, and storage tank.

SDE prepared a flow analysis memorandum that outlined the historical water usage at the site, the proposed program, and the projected wastewater flow for the maximum occupancy day. The proposed program was based on wastewater unit flow rates for each type of occupancy (residential, staff, visitors, meals). Approximately 8,600 gpd and 8,800 gpd of wastewater would be generated at the site under normal and full occupancy conditions, respectively (Sherwood Design Engineers 2022).

As a precautionary measure, the treatment and disposal systems would be sized for a 10,000 gpd daily flow, which represents a factor of safety of 1.1. A wastewater treatment capacity of 10,000 gpd would provide enough capacity for all residents and staff as well as up to 180 visitors. During large special events, when the number of visitors is anticipated to exceed 180,

portable toilets are proposed to be brought on site to manage additional sanitary waste and maintain wastewater flow at or below 10,000 gpd.

The primary mode of wastewater dispersal during the dry season would be through subsurface drip irrigation lines located throughout much of the project site. A leach field of 0.22 acre and a 10,000-gallon aboveground storage tank would be located adjacent the treatment system, south of Commodore Drive. The leach field is sized to dispose of 200 percent of the projected treated wastewater flow. The water treatment system would be connected to the proposed micro-grid and back up emergency generator to ensure consistent power supply.

To protect groundwater at the site and create a reliable supply of non-potable water for irrigation needs, the wastewater treatment system would be designed to meet the State's Recycled Water Standards, established in California Code of Regulations Title 22, for disinfected tertiary treatment. The treatment system would be designed to produce disinfected tertiary treated recycled water that meets the primary drinking water standard for nitrates, a pollutant of concern for groundwater. With tertiary treatment proposed for beneficial reuse, the San Francisco Bay Regional Water Quality Control Board (Regional Board) is the lead regulatory agency that would oversee and permit this project. As discussed in Hydrology impact discussion b), Mitigation Measure HYDRO-1 specifies monitoring requirements and performance standards to avoid an impact from the proposed wastewater treatment system on the site. With implementation of Mitigation Measure HYDRO-1, the impact from the wastewater treatment system would be less than significant with mitigation.

**Stormwater**

During construction, the project would comply with the statewide Phase II municipal stormwater NPDES permit requirements. The project would implement runoff reduction measures such as limiting clearing, grading, and soil compaction, minimizing impervious surfaces, conserving natural areas, complying with ESHA buffer requirements, and using a combination of LID and BMPs to improve the water quality of runoff from the site compared to existing conditions. With compliance with NPDES requirements, impacts would be less than significant during construction.

In accordance with the BASMAA Post-Construction Manual, the project is considered a regulated project because it creates or replaces more than 5,000 square feet of impervious surface. The project would utilize existing underground stormwater infrastructure where possible. Stormwater runoff would be intercepted and routed to six new bioretention facilities throughout the project site (see Figure 2.2-3). In addition, the existing mulched playground would be converted into a water retention area that would receive and contain runoff from the uphill site to allow for increased infiltration on site. As the project would increase on-site filtration through the removal of impervious surfaces and implementation of bioretention facilities, the project would not affect the capacity of the existing stormwater infrastructure. Impacts would be less than significant during operations.

**Electricity and Natural Gas**
Electricity to the project site is provided by PG&E. The proposed residential units would be all electric, and no gas appliances are proposed. The conversion of the project to all-electric use would require upgrades to the electrical infrastructure on site, but the existing underground PG&E powerlines would continue to be used.

Rooftop solar is proposed on all buildings, and two ground-mounted solar arrays are proposed along the east side of Commodore Webster Drive and on the hillside west of Buildings 101, 102, and 103 (see Figure 2.2-3). The proposed 558,000 kWh solar PV system has been sized to offset 100 percent of the projected energy consumption of the project, including the wastewater treatment plant and EV charging stations. The proposed system would serve as a microgrid (PV system, BESS, and emergency generator) that would allow the project to serve as a neighborhood-level resilience center to provide shelter and resources during extreme weather events and other emergencies. As the project would be self-sufficient, the project would not require the construction or relocation of new off-site facilities. Impacts would be less than significant.

**Telecommunication**
The existing telecommunication facilities at the site would remain. No improvements to telecommunication facilities are required or proposed. No impact on telecommunication facilities would occur.

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

**Construction**
Potable water is provided by the NMWD. The NMWD maintains two existing potable water wells and an associated treatment facility on the project site. Water used during construction would be provided by the existing NMWD services. Water would be used during construction for dust suppression, concrete washout, and other miscellaneous activities. Dust suppression during construction would use approximately 1,000 gallons of water per day for a 120-day period, as needed. Other water uses, such as power washing buildings, would account for approximately 1,500 gallons per building. Adequate water supplies are available under existing and future conditions due to the very minimal volume of water that is required for construction and the short-term water use. Impacts would be less than significant.

**Operations**
The project has an anticipated water demand of 9,500 gpd. NMWD obtains its water supply for the West Marin service area from two wells located on the nearby Gallagher Ranch and from two wells located on the project site. According to the NWMD 2020 Urban Water Management Plan, the NWMD has adequate water supplies to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years (North Marin Water District

2021). Therefore, the NWMD has adequate capacity to serve the project. Impacts would be less than significant.

**c) Would the Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

Refer to impact discussion a), above. The project would be served by a newly constructed wastewater treatment facility, subsurface drip irrigation system, and leach field. The wastewater system would accommodate up to 10,000 gallons of wastewater per day, which is adequate to serve the demands of the project. The proposed water treatment system would be completely contained on site and would have sufficient capacity to serve the proposed project. Accordingly, the proposed project would not affect an offsite wastewater treatment provider, and the proposed project would not impact wastewater treatment capacity of any wastewater treatment provider.

**d) Does the Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

Recology Sonoma Marin provides waste services to Point Reyes Station. The nearest landfill is the Waste Management Redwood Landfill, located approximately 3.5 miles east of the project site.

**Construction**

The project construction would reuse excavated soils on site, with a small volume of net import of fill material. Construction of the project would generate small volumes of construction waste (e.g., equipment packaging, trash generated by workers). The small quantity of waste generated during project construction would not be in excess of the capacity of nearby landfills. Adequate capacity is available to accommodate the disposal of materials associated with the project. The project would comply with the Marin County Climate Action Plan 2030, including WR-C3 Construction & Demolition Debris and Self-Haul Waste, which requires all loads of construction and demolition debris and self-haul waste to be processed for recovery of materials as feasible. With compliance with WR-C3, impacts would be less than significant.

**Operations**

The project would consist of 54 affordable housing units within the 12 existing buildings, which equates to approximately 215 residents. In 2019, each California resident disposed on average 6.7 pounds of waste per day (CalRecycle 2020). Accordingly, the project is expected to produce approximately 1,440 pounds per day of waste.

Occupancy of the low-density residential parcels would not generate enough waste to change capacity projections at a landfill. Sufficient landfill capacity exists to address regular domestic waste production from the 54 additional housing units. Impacts would be less than significant.

**e) Does the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

**Construction**

Refer to impact discussion d), above. Project construction activities would generate debris that needs to be disposed of, such as equipment packaging and trash generated by workers. The waste material generated during project construction as well as maintenance debris would be transported to an appropriate disposal location in accordance with federal, State, and local statutes and regulations related to solid waste. Any removed vegetation would be chipped on site or composted. With compliance with existing regulations, impacts would be less than significant.

**Operations/Occupancy**

Operation and occupancy of the project site would generate trash and waste typical of a residential use. The project would include receptacles for separation of recycling, compost, and trash to comply with federal, State, and local regulations for management of waste. Because the project would comply with regulations for management of waste, the impact would be less than significant.

**Mitigation Measures**

Mitigation Measure HYDRO-1 (refer to Section 3.2.10).

### 3.2.20 Wildfire

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **20. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:** | | | | |
| a) Substantially impair an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☐ | ☒ |
| b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? | ☐ | ☐ | ☐ | ☒ |
| c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? | ☐ | ☐ | ☐ | ☒ |
| d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? | ☐ | ☐ | ☐ | ☒ |

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#### Environmental Setting

The project site is located in a Moderate Hazard Severity Zone according to the California Department of Forestry and Fire Protection (CAL FIRE), as shown in Figure 3.2-3. No state responsibility areas or lands classified as very high fire hazard severity zones are located near the project site.

#### Discussion

Because the project is not located in or near a state responsibility area or lands classified as very high fire hazard severity, no impact from being located in a state responsibility area or lands classified as very high fire hazard severity would occur. Impacts from wildfire are addressed in Section 3.2.9, impact discussion g).

#### Mitigation Measures

None required.

### 3.2.21 Mandatory Findings of Significance

| Environmental Impacts | Potentially Significant Impact | Less than Significant with Mitigation Incorporated | Less than Significant Impact | No Impact |
|---|---|---|---|---|
| **21. MANDATORY FINDINGS OF SIGNIFICANCE:** | | | | |
| a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☒ | ☐ | ☐ |
| b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | ☐ | ☒ | ☐ | ☐ |
| c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☐ | ☒ | ☐ |

#### Discussion

**a) Does the project have the potential to 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?**

As described in Section 3.2.4 Biological Resources, the project has implemented buffers from ESHA and would avoid impacts on sensitive habitat areas for fish and wildlife species. No special status plants occur within the project area based on the results of focused surveys; therefore, the project would have no impact on special status plants. The following rare and endangered wildlife species have the potential to occur within the project area: CCC steelhead, CCC coho salmon, Tomales roach, California freshwater shrimp, monarch butterflies, western pond turtle, pallid bat, Townsend's big-eared bat, and American badger.

CCC steelhead, CCC coho salmon, Tomales roach, and California freshwater shrimp have the potential to occur within Lagunitas Creek within the project area. Although the project would avoid direct impacts, the project has the potential to result in indirect water quality impacts during construction due to leaking fuel or hydraulic lines on heavy equipment, improper fuel handling practices, spills during refueling or lubrication operations, and sediment runoff from clearing and grading. Earthmoving and other actions that would disturb soils and generate construction debris could also increase turbidity and sedimentation. Compliance with the Construction Stormwater General Permit and other design features would avoid significant impacts on CCC steelhead, CCC coho salmon, Tomales roach, and California freshwater shrimp, and the resulting indirect impact would be less than significant.

The removal of 19 mature eucalyptus trees could result in direct impacts to monarch butterflies. Mitigation Measure BIO-1 requires removal of eucalyptus trees outside of the roosting period for monarch butterflies to avoid the potential for impacts on a roost of monarch butterflies. The majority of the project area is located within suitable upland habitat for CRLF. Although the project would remove 2,152 square feet of existing facilities from upland areas within ESHA and adjacent the riparian corridor, which would provide a long-term benefit to water quality and habitat, potential impacts to CRLF may still occur. Implementation of Mitigation Measures BIO-2 through BIO-13 would reduce impacts to CRLF as the mitigation requires a USFWS-approved biologist to conduct pre-construction clearance surveys, biological monitoring by a designated biologist or their designee during ground-disturbing activities, installation of temporary exclusion fencing to prevent CRLF dispersal into the work area during construction, worker environmental training, construction avoidance periods after rain events, and covers for open excavations. Should the species occur on the site during construction, the mitigation measures also define procedures for safe disposition of CRLF.

Lagunitas Creek provides perennial aquatic habitat for western pond turtle. While upland nesting is unlikely in the disturbance area, the presence of western pond turtle cannot be ruled out given the proximity to Lagunitas Creek and riparian habitat. Implementation of Mitigation Measures BIO-2, BIO-3, BIO-6, and BIO-10 include procedures for worker training, installation of exclusion fencing that would effectively avoid entry of western pond turtle into the project area, biological monitoring during construction, and covering of trenches to avoid a western pond turtle from entering any trench.

Special status bat species, pallid bat and Townsend's big-eared bat, have the potential to roost within the existing buildings. Marin Development Code section 22.20.040.F defines procedures for pre-construction surveys and protection of active bat roosts during construction and demolition activities during the bat roosting season. Because bats and active roosts would be protected with implementation of Marin Development Code section 22.20.040.F, the impact on special-status bats from project construction and demolition activities would be less than significant.

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Remnant American badger burrows were observed within open grassland areas within the project site, and American badgers are assumed to be present within grassland areas in the project site. The project would install solar panels and potentially require trenching of electrical conduit in grassland areas. The wastewater treatment facility would also be located in grasslands. Mitigation Measure BIO-15 requires protections for American badger, including pre-construction surveys and buffers from any active burrows of American badger.

White-tailed kite, yellow warbler, and other bird species protected by the MBTA have the potential to use the vegetation and trees within the project area as nesting habitat. Removal of trees with an active nest of special status bird species would cause destruction of the nest and eggs, which would be a significant impact. In addition, the project construction would involve the use of heavy equipment that would produce noise in proximity to suitable habitat for special status birds and other birds protected by the MBTA. Marin Development Code section 22.20.040.G limits tree/vegetation removal and initial ground disturbance activities occur outside of the active nesting season (i.e., February 1 to August 15) when feasible, pre-construction surveys for birds in any vegetation removed during the nesting season, and avoidance procedures for active nests including buffers from active nesting habitat. Mitigation Measure BIO-14 defines enhanced buffers for special-status bird species.

Mitigation Measures BIO-1 through BIO-15 have been identified to reduce impacts on fish and wildlife species to less-than-significant levels. With implementation of Mitigation Measures BIO-1 through BIO-15, the project would not cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal, and the impact would be less than significant with implementation of mitigation.

No important examples of California history or prehistory are known to occur within the project site, as discussed in Section 3.2.5. While there are no known examples of major periods of California history or prehistory in the project area, there is the potential to discover resources during construction. In the event that historical resources are uncovered during project-related ground disturbing activities, compliance with Marin Development Code section 22.20.040.E is required. Under Marin Development Code section 22.20.040.E, if archaeological materials (including historical and pre-historical materials) are discovered during construction, construction activities shall cease and the remains shall be recorded by a qualified archaeologist and treated according to state law. Through compliance with Marin Development Code, the project would not eliminate an important example of California history or prehistory, and the impact would be less than significant.

**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)?**

The CEQA Guidelines (Section 15130) require a discussion of the cumulative impacts of a project. There are generally two accepted methods of evaluating cumulative impacts: the plan method and the list method. These two approaches are included as part of Section 15130 and state that a cumulative impact analysis must include either 1) a list of past, present, and probable future projects that may contribute to the effects of the project, or 2) a summary of projections contained in an adopted local, regional, or statewide plan, or related planning document that describe or evaluate contributions to a cumulative effect.

The project is located in a developed residential neighborhood in the county. The project site is bounded by the Point Reyes Affordable Homes to the west, an undeveloped lot to the north, and Lagunitas Creek to the east and south. Since the surrounding areas are currently developed and there are no proposed projects in the project vicinity, the plan method is more appropriate to analyze potential cumulative impacts from project implementation.

The proposed project would have no effect on agricultural and forestry resources, mineral resources, or wildfire and would not contribute to cumulative impacts on these resources. The project impacts on aesthetic resources would be highly localized as the project is not visible to surrounding areas, and the impacts would not be cumulatively considerable. The project would be consistent with the Climate Action Plan and all policies for reduction of GHG emissions, including use of renewable energy and conversion of the facility to all electric power, and would not contribute considerably to cumulative GHG emissions or energy impacts. The project area of effect does not contain any known historic, archaeological, or tribal cultural resources; therefore, the project would not contribute considerably to cumulative impacts on historic and archaeological resources or tribal cultural resources. The project impacts on geology and soils would be localized to the project site and would not contribute to cumulative impacts on geology and soils. The project impact on hazards and hazardous materials from lead-based paint and asbestos containing materials in the existing buildings would be localized to the project site and would not contribute to cumulative impacts on hazards and hazardous materials. The project's less-than-significant impact on noise would be localized to the project site and would not contribute to any cumulative impact on noise. The project's less-than-significant impact on population and housing would not contribute to any cumulatively significant impact on population and housing. The project would be consistent with the LCP as described in the land use section and would not contribute to any cumulative impacts on land use. The project would not generate the need for new recreational resources and would not increase use of recreational facilities and would therefore not contribute to cumulative impacts on recreation. The remaining potential cumulative impacts are discussed below.

**Air Quality**
The project could have a cumulatively considerable impact on air quality if it either 1) resulted in emissions above the significance thresholds or 2) violated any action in an attainment plan. BAAQMD thresholds for ozone precursor pollutants (ROGs and $NO_X$) and particulate matter ($PM_{10}$ and $PM_{2.5}$) are the thresholds at which a project would be considered to constitute a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment. Marin County is within the San Francisco Bay Area Air Basin. The Bay Area Air Quality Management District (BAAQMD) is responsible for air quality management and regulates activities that may affect air quality within the Bay Area Air Basin. As summarized in Table 3.2-3, the project would be consistent with all applicable air quality control measures contained in the Bay Area Clean Air Plan, and the project would not conflict with or obstruct implementation of the plan. The average daily construction and operational emissions presented in Table 3.2-4 are below BAAQMD's significance thresholds. Because the project would not exceed any thresholds established for evaluating cumulative impacts on air quality, the projects contribution to cumulative air quality impacts would be less than significant.

**Biological Resources**
The project could result in localized temporary construction impacts on special status species and migratory birds. Mitigation measures would be implemented to reduce the impacts on special status species so that the localized and temporary impacts of construction would not result in a cumulatively considerable impact on any special status species, and the cumulative impact would be less than significant with the project mitigation included in Section 3.2.4.

**Hydrology and Water Quality**
The project's potential impacts on groundwater supply are specific to the project and not a cumulative impact. Impacts from sedimentation in Lagunitas Creek is a cumulative impact that is addressed through the TMDL. The project would not conflict with implementation of the TMDL, and the project construction would include implementation of BMPs consistent with the Construction Stormwater General Permit. With implementation of stormwater and erosion control BMPs and installation of the bioretention basins for long-term stormwater management, the project's contribution to a cumulatively significant impact on sedimentation in Lagunitas Creek would be less than significant.

**Public Services and Utilities and Service Systems**
No cumulative projects are proposed in the project vicinity. While the project would reintroduce residents to the project area, the additional residents would not create a significant cumulative impact on public services as no other projects are proposed in the area that would contribute to a cumulative impact on public services or utilities and service systems.

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

This IS/MND identifies potentially significant impacts related to Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Hazards and Hazardous Materials,

Hydrology and Water Quality, Transportation, Tribal Cultural Resources, and Utilities and Service Systems. Mitigation measures have been identified in the resource impact discussions of this IS/MND to reduce all potentially significant impacts to a less-than-significant level. Impact determinations of "no impact" or "less-than-significant impact" were made for the following environmental issues: Aesthetics, Agriculture and Forestry Resources, Energy, Greenhouse Gases, Land Use and Planning, Mineral Resources, Noise, Population and Housing, Public Services, Recreation, and Wildfire. Repurposing of the existing housing units at the project site would have a beneficial impact on human beings by creating new housing units that would address regional issues of homelessness. As discussed in Hydrology and Water Quality, the wastewater treatment system would produce very high quality of effluent, and the system would be subject to monitoring in compliance with State of California requirements and permits that would ensure the effluent would not adversely affect humans. The project would not result in substantial adverse direct or indirect effects on any human beings.

**Mitigation Measures**

Mitigation Measures BIO-1 through BIO-15 (see Section 3.2.4)

# 4 List of Preparers

## 4.1 Marin County

Rachel Reid, Environmental Coordinator

Tammy Taylor, Senior Environmental Planner

Robin Fies, Environmental Planning Technician and Staff Archaeologist

Michelle Levenson, Principal Planner

Leelee Thomas, Deputy Director of Housing and Federal Grants

Aline Tanielian, Affordable Housing Planner

## 4.2 Consultants

| Name, Title, Firm | Role |
|---|---|
| Susanne Heim, Principal, Panorama Environmental | Quality Assurance/Quality Control, Hydrology and Water Quality |
| Regina Ochoa, Senior Planner, Panorama Environmental | Aesthetics, Agricultural and Forestry Resources, Greenhouse Gases, Land Use and Planning, Population and Housing, Public Services, Recreation, Transportation |
| Garett Peterson, Environmental Planner III, Panorama Environmental | Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Mineral Resources, Noise, Tribal Cultural Resources, Utilities and Service Systems, Mandatory Findings of Significance |
| Rachel Durben, Senior Biologist | Biological Resources and Hydrology |
| Jennifer Kidson, Senior Planner | Air Quality (CalEEMod) |
| Sally Evans, Archaeologist, Evans DeShazo | Cultural Resources and Tribal Cultural Resources |
| Gretchen Boyce, Historian, Groundwork Preservation | Cultural Resources |

# 4 LIST OF PREPARERS

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# 6 PROJECT SPONSOR'S INCORPORATION OF MITIGATION MEASURES

Acting on behalf of the project sponsor or the authorized agent of the project sponsor, I (undersigned) have reviewed the Initial Study for the Point Reyes Station USCG Coastal Permit and Conditional Use Permit and have particularly reviewed the mitigation measures and monitoring programs identified herein. I accept the findings of the Initial Study, including the recommended mitigation measures, and hereby agree to modify the proposed project applications now on file with Marin County to include and incorporate all mitigation measures and monitoring programs set out in this Initial Study.

Corey Ohama

*(Project Sponsor's Name or Representative)*

Aruna Doddapaneni

*(Project Sponsor's Name or Representative)*

COhama — 4-15-2024

*(Project Sponsor's signature)* — Date

4/17/2024

*(Project Sponsor's signature)* — Date

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# 7 Environmental Determination

(Completed by Marin County Environmental Planning Manager). Pursuant to Sections 15081 and 15070 of the State Guidelines, the forgoing Initial Study evaluation, and the entire administrative record for the Project:

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

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

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

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

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

| Rachel Reid | Environmental Planning Manager | April 18, 2024 |
|---|---|---|
| Signature | Name/Title | Date |

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# APPENDIX A

## FEDERAL EMERGENCY MANAGEMENT AGENCY

## LETTER OF MAP REVISION FLOODWAY DETERMINATION DOCUMENT

# Federal Emergency Management Agency

Washington, D.C. 20472

# LETTER OF MAP REVISION FLOODWAY DETERMINATION DOCUMENT (REMOVAL)

| COMMUNITY AND MAP PANEL INFORMATION | | LEGAL PROPERTY DESCRIPTION |
|---|---|---|
| COMMUNITY | MARIN COUNTY, CALIFORNIA (Unincorporated Areas) | A parcel of land, as described in the Quitclaim Deed recorded as Document No. 2019-0047097, in the Office of the Recorder, Marin County, California<br><br>The portion of property is more particularly described by the following metes and bounds: |
| | COMMUNITY NO.: 060173 | |
| AFFECTED MAP PANEL | NUMBER: 06041C0233D | |
| | DATE: 5/4/2009 | |
| FLOODING SOURCE: LAGUNITAS CREEK | | APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY:38.068018, -122.799964<br>SOURCE OF LAT & LONG: LOMA LOGIC DATUM: NAD 83 |

## DETERMINATION

| LOT | BLOCK/ SECTION | SUBDIVISION | STREET | OUTCOME WHAT IS REMOVED FROM THE SFHA | FLOOD ZONE | 1% ANNUAL CHANCE FLOOD ELEVATION (NAVD 88) | LOWEST ADJACENT GRADE ELEVATION (NAVD 88) | LOWEST LOT ELEVATION (NAVD 88) |
|---|---|---|---|---|---|---|---|---|
| -- | -- | -- | 100 Commodore Webster Drive | Portion of Property | X (shaded) | -- | -- | 23.5 feet |

**Special Flood Hazard Area (SFHA)** - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

ADDITIONAL CONSIDERATIONS (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

LEGAL PROPERTY DESCRIPTION
INADVERTENT INCLUSION FLOODWAY 1
PORTIONS REMAIN IN THE SFHA
SUPERSEDES PREVIOUS DETERMINATION
STATE LOCAL CONSIDERATIONS

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Revision for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the
property(ies) is/are not located in the NFIP regulatory floodway or the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document revises the effective NFIP map to remove the subject property from the NFIP regulatory floodway and the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

# LETTER OF MAP REVISION FLOODWAY DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

**LEGAL PROPERTY DESCRIPTION (CONTINUED)**

BEGINNING AT THE FOUND 3/4" IRON PIPE & TAG LS 7112 ON WESTERN LINE, 0.25' FROM THE NORTHERNMOST POINT OF THE BOUNDARY BETWEEN THE PROPERTY AND 1ST STREET OF POINT REYES STATION, CALIFORNIA: THENCE (1) South 49°48'00" East, 384.47 feet to the BEGINNING POINT of the Portion of the Parcel Above 23.5 Feet in Elevation; THENCE (2) South 63°50'44" East, 52.46 feet; THENCE (3) North 68°58'51" East, 19.38 feet; THENCE (4) North 78°48'04" East, 6.93 feet; THENCE (5) North 66°52'14" East, 16.67 feet; THENCE (6) North 57°50'53" East, 17.94 feet; THENCE (7) North 58°35'08" East, 12.76 feet; THENCE (8) North 43°20'47" East, 6.80 feet; THENCE (9) North 45°05'20" East, 16.62 feet; THENCE (10) North 55°02'01" East, 5.51 feet; THENCE (11) North 51°35'35" East, 10.33 feet; THENCE (12) North 52°33'28" East, 18.65 feet; THENCE (13) North 47°18'34" East, 10.55 feet; THENCE (14) North 50°04'35" East, 15.40 feet; THENCE (15) North 49°12'03" East, 14.41 feet; THENCE (16) North 45°17'00" East, 18.15 feet; THENCE (17) North 43°33'22" East, 12.63 feet; THENCE (18) North 51°40'31" East, 5.57 feet; THENCE (19) North 52°19'23" East, 19.03 feet; THENCE (20) North 56°26'54" East, 13.82 feet; THENCE (21) North 59°50'16" East, 19.29 feet; THENCE (22) North 63°39'50" East, 12.98 feet; THENCE (23) North 62°30'24" East, 12.39 feet; THENCE (24) North 70°29'47" East, 11.01 feet; THENCE (25) North 79°10'42" East, 13.62 feet; THENCE (26) North 79°16'52" East, 12.35 feet; THENCE (27) North 78°04'02" East, 13.59 feet; THENCE (28) North 76°29'09" East, 14.18 feet; THENCE (29) North 75°21'49" East, 13.21 feet; THENCE (30) North 74°48'42" East, 14.27 feet; THENCE (31) North 71°47'25" East, 13.24 feet; THENCE (32) North 71°40'02" East, 6.74 feet; THENCE (33) North 70°33'31" East, 10.04 feet; THENCE (34) North 71°41'57" East, 18.96 feet; THENCE (35) North 73°46'22" East, 13.96 feet; THENCE (36) North 62°44'34" East, 13.88 feet; THENCE (37) North 51°23'53" East, 15.58 feet; THENCE (38) North 38°55'50" East, 14.85 feet; THENCE (39) North 71°28'11" East, 8.85 feet; THENCE (40) North 54°42'47" East, 17.69 feet; THENCE (41) North 76°42'03" East, 14.70 feet; THENCE (42) South 71°02'20" East, 11.47 feet; THENCE (43) South 88°43'47" East, 12.97 feet; THENCE (44) South 77°23'08" East, 7.44 feet; THENCE (45) South 54°42'23" East, 11.41 feet; THENCE (46) North 68°02'38" East, 17.17 feet; THENCE (47) North 75°10'15" East, 10.46 feet; THENCE (48) South 0°57'02" East, 19.02 feet; THENCE (49) South 46°12'15" East, 6.70 feet; THENCE (50) North 79°02'17" East, 13.08 feet; THENCE (51) North 80°04'59" East, 21.01 feet; THENCE (52) South 78°15'58" East, 16.33 feet; THENCE (53) South 76°23'16" East, 11.34 feet; THENCE (54) South 79°32'12" East, 5.76 feet; THENCE (55) South 67°20'23" East, 16.41 feet; THENCE (56) South 65°23'03" East, 18.18 feet; THENCE (57) South 83°11'39" East, 17.94 feet; THENCE (58) South 73°01'08" East, 7.43 feet; THENCE (59) South 88°02'57" East, 14.20 feet; THENCE (60) North 79°28'42" East, 6.80 feet; THENCE (61) North 87°46'03" East, 17.51 feet; THENCE (62) North 77°16'39" East, 14.62 feet; THENCE (63) North 77°36'25" East, 5.22 feet; THENCE (64) North 80°27'21" East, 13.20 feet; THENCE (65) North 83°46'21" East, 10.93 feet; THENCE (66) South 89°02'07" East, 14.58 feet; THENCE (67) South 81°34'30" East, 16.15 feet; THENCE (68) South 66°07'42" East, 5.26 feet; THENCE (69) South 68°26'30" East, 7.12 feet; THENCE (70) South 67°18'34" East, 16.52 feet; THENCE (71) South 60°47'05" East, 13.70 feet; THENCE (72) South 71°41'15" East, 14.42 feet; THENCE (73) North 60°37'27" East, 4.77 feet; THENCE (74) North 55°57'09" East, 9.89 feet; THENCE (75) North 66°46'57" East, 20.80 feet; THENCE (76) North 64°11'52" East, 6.00 feet; THENCE (77) North 57°19'27" East, 17.36 feet; THENCE (78) North 42°36'48" East, 20.05 feet; THENCE (79) North 42°07'08" East, 13.86 feet; THENCE (80) North 41°24'17" East, 16.40 feet; THENCE (81) North 39°09'03" East, 4.30 feet; THENCE (82) North 33°55'17" East, 11.27 feet; THENCE (83) North 33°20'14" East, 15.14 feet; THENCE (84) North 34°52'05" East, 13.48 feet; THENCE (85) North 33°29'33" East, 16.81 feet; THENCE (86) North 18°14'28" East, 10.65 feet; THENCE (87) North 10°55'55" East, 4.70 feet; THENCE (88) North 21°11'02" East, 15.35 feet; THENCE (89) North 1°33'10" East, 13.08 feet; THENCE (90) North 16°59'58" East, 13.77 feet; THENCE (91) North 33°59'13" East, 10.36 feet; THENCE (92) North 34°23'23" East, 7.25 feet; THENCE (93) North 38°31'38" East, 17.65 feet; THENCE (94) North 38°14'02" East, 12.07 feet; THENCE (95) North 34°08'51" East, 14.05 feet; THENCE (96) North 30°43'17" East, 11.93 feet; THENCE (97) North 29°19'39" East, 12.93 feet; THENCE (98) North 22°07'45"

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

# LETTER OF MAP REVISION FLOODWAY DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

East, 7.45 feet; THENCE (99) North 11°25'33" East, 16.67 feet; THENCE (100) North 6°38'56" West, 3.39 feet; THENCE (101) North 2°17'33" East, 9.84 feet; THENCE (102) North 28°31'06" East, 4.06 feet; THENCE (103) North 37°31'45" East, 11.12 feet; THENCE (104) North 20°23'40" East, 16.13 feet; THENCE (105) North 19°21'23" East, 13.70 feet; THENCE (106) North 6°35'23" East, 10.99 feet; THENCE (107) North 8°05'12" West, 20.09 feet; THENCE (108) North 4°31'00" West, 16.48 feet; THENCE (109) North 0°59'12" West, 12.23 feet; THENCE (110) North 5°34'36" West, 12.16 feet; THENCE (111) North 18°26'03" East, 4.73 feet; THENCE (112) North 5°41'35" West, 13.98 feet; THENCE (113) North 0°44'12" West, 8.77 feet; THENCE (114) North 3°15'04" West, 17.37 feet; THENCE (115) North 7°04'11" East, 4.08 feet; THENCE (116) North 4°29'32" East, 14.61 feet; THENCE (117) North 0°12'42" East, 17.01 feet; THENCE (118) North 5°31'02" East, 12.57 feet; THENCE (119) North 25°34'37" East, 9.99 feet; THENCE (120) North 29°27'20" East, 14.38 feet; THENCE (121) North 34°25'31" East, 4.29 feet; THENCE (122) North 26°59'24" East, 11.62 feet; THENCE (123) North 15°15'57" West, 15.36 feet; THENCE (124) North 16°48'14" East, 10.19 feet; THENCE (125) North 20°15'51" East, 6.07 feet; THENCE (126) North 6°47'25" East, 20.03 feet; THENCE (127) North 2°42'44" West, 4.50 feet; THENCE (128) North 6°00'07" West, 12.92 feet; THENCE (129) North 4°58'56" West, 21.55 feet; THENCE (130) North 8°06'10" East, 13.63 feet; THENCE (131) North 0°26'03" East, 8.63 feet; THENCE (132) North 6°15'18" East, 17.90 feet; THENCE (133) North 12°56'36" East, 14.70 feet; THENCE (134) North 9°12'26" East, 11.21 feet; THENCE (135) North 3°06'11" East, 15.74 feet; THENCE (136) North 10°51'01" East, 4.26 feet; THENCE (137) North 8°12'29" West, 15.46 feet; THENCE (138) North 0°10'11" East, 11.87 feet; THENCE (139) North 4°06'45" West, 23.44 feet; THENCE (140) North 15°21'10" West, 15.72 feet; THENCE (141) North 6°44'10" West, 14.29 feet; THENCE (142) North 16°47'28" West, 16.37 feet; THENCE (143) North 10°34'04" West, 9.11 feet; THENCE (144) North 6°41'41" West, 6.91 feet; THENCE (145) North 3°47'08" West, 13.60 feet; THENCE (146) North 1°46'50" West, 11.13 feet; THENCE (147) North 3°21'53" West, 12.86 feet; THENCE (148) North 1°20'14" West, 11.57 feet; THENCE (149) North 0°06'18" West, 17.76 feet; THENCE (150) North 13°25'16" East, 13.46 feet; THENCE (151) North 7°58'17" East, 7.05 feet; THENCE (152) North 4°37'55" West, 13.21 feet; THENCE (153) North 7°59'23" West, 20.90 feet; THENCE (154) North 12°09'13" West, 17.25 feet; THENCE (155) North 19°01'05" West, 8.28 feet; THENCE (156) North 15°18'42" West, 21.34 feet; THENCE (157) North 15°30'36" West, 18.87 feet; THENCE (158) North 25°55'28" West, 11.88 feet; THENCE (159) North 22°36'47" West, 12.07 feet; THENCE (160) North 23°32'47" West, 6.18 feet; THENCE (161) South 89°29'28" West, 59.79 feet; THENCE (162) South 0°07'46" East, 0.28 feet to the beginning of a curve concave northwesterly, said curve has a radius of 1,067.00 feet; THENCE (163) southwesterly along said curve through a central angle of 61°11'11" an arc distance of 1,139.45 feet; THENCE (164) South 61°03'29" West, 496.08 feet to return to the POINT OF BEGINNING.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick "Rick" F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

Federal Emergency Management Agency
Washington, D.C. 20472

# LETTER OF MAP REVISION FLOODWAY DETERMINATION DOCUMENT (REMOVAL)

ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

**INADVERTENT INCLUSION IN THE FLOODWAY 1 (PORTIONS OF THE PROPERTY REMAIN IN THE FLOODWAY) (This Additional Consideration applies to the preceding 1 Property.)**

A portion of this property is located within the National Flood Insurance Program (NFIP) regulatory floodway for the flooding source indicated on the Determination Document, while the subject of this determination is not. The NFIP regulatory floodway is the area that must remain unobstructed in order to prevent unacceptable increases in base flood elevations. Therefore, no construction may take place in an NFIP regulatory floodway that may cause an increase in the base flood elevation, and any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management. The NFIP regulatory floodway is provided to the community as a tool to regulate floodplain development. Therefore, the NFIP regulatory floodway modification described in the Determination Document, while acceptable to the Federal Emergency Management Agency (FEMA), must also be acceptable to the community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations. Any proposed revision to the NFIP regulatory floodway must be submitted to FEMA by community officials. The community should contact either the Regional Director (for those communities in Regions I-IV, and VI-X), or the Regional Engineer (for those communities in Region V) for guidance on the data which must be submitted for a revision to the NFIP regulatory floodway. Contact information for each regional office can be obtained by calling the FEMA Mapping and Insurance eXchange toll free at (877) 336-2627 (877-FEMA MAP) or from our web site at http://www.fema.gov/about/regoff.htm.

**PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 1 Property.)**

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

**SUPERSEDES OUR PREVIOUS DETERMINATION (This Additional Consideration applies to all properties in the LOMR-FW DETERMINATION DOCUMENT (REMOVAL))**

This Determination Document supersedes our previous determination dated 4/14/2023, for the subject property.

**STATE AND LOCAL CONSIDERATIONS (This Additional Consideration applies to all properties in the LOMR-FW DETERMINATION DOCUMENT (REMOVAL))**

Please note that this document does not override or supersede any State or local procedural or substantive provisions which may apply to floodplain management requirements associated with amendments to State or local floodplain zoning ordinances, maps, or State or local procedures adopted under the National Flood Insurance Program.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Mapping and Insurance eXchange (FMIX) toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, LOMC Clearinghouse, 3601 Eisenhower Avenue, Suite 500, Alexandria, VA 22304-6426.

Patrick “Rick” F. Sacbibit, P.E., Branch Chief
Engineering Services Branch
Federal Insurance and Mitigation Administration

# APPENDIX B

## BIOLOGICAL SITE ASSESSMENT REPORT, IPAC RESOURCE LIST, AND CALIFORNIA NATIVE PLANT SOCIETY PLANT LIST

# BIOLOGICAL SITE ASSESSMENT REPORT

## U.S. COAST GUARD HOUSING FACILITY REDEVELOPMENT PROJECT

## POINT REYES STATION, MARIN COUNTY, CALIFORNIA









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March 2023

ENVIRONMENTAL CONSULTANTS

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## EXECUTIVE SUMMARY

This report details the regulatory background, methods, results, and recommendations of a Biological Site Assessment (BSA) for the proposed redevelopment of the former U.S. Coast Guard (USCG) housing site property located at 101 Commodore Webster Drive, Point Reyes Station, Marin County, California (Study Area; APNs #119-240-73, 119-236-10) (Figure A-1, Appendix A). The assessment and survey are required by the County of Marin for a proposed affordable housing project, which will rehabilitate facilities and features that currently exist on the property, some of which were formerly used by the USCG. WRA, Inc. performed the assessment and surveys on behalf of the Applicant, the Community Land Trust Association of West Marin (CLAM) and Eden Housing, Inc. (Eden), on several site visits throughout 2021. Following the surveys, WRA helped the client to develop a Project that avoids and/or minimizes potential impacts to sensitive natural resources to the maximum extent feasible.

During the site visits, WRA identified several Environmentally Sensitive Habitat Areas (ESHA), including aquatic and terrestrial within the Study Area. The Project Area (Project Area is defined on Page iii, below) itself does not contain ESHAs. The Project Area does contains existing nonconforming structures/uses that are located within aquatic and terrestrial ESHA buffers. Therefore, avoidance of ESHA buffers is not feasible to complete the project. The development of the project will variably repair existing nonconforming structures, replace structures within the ESHA buffers with water quality enhancement features, or remove existing nonconforming structures/uses where possible, and restore those areas with native vegetation. A reduced buffer analysis was performed in this report where necessary development is proposed within ESHA buffers. Best management practices and avoidance measures are included as part of the project and provided herein to ensure that wetlands, streams, and riparian habitats (aquatic resources collectively), and sensitive terrestrial resources (e.g., upland native grassland) within the Project are protected. The work which will occur within ESHA buffers is expected to result in a net environmental improvement over existing conditions, by reducing improving water quality, eliminating on-site invasive species, and increasing native vegetation cover. A complete listing of sensitive natural resources or potential ESHA within the Project Area is included in Section 5.0 below. The report was updated in December 2022 to address the County of Marin Community Development Agency and California Coastal Commission (CCC) comments on the BSA report and Coastal Permit and Use Permit. Updated text is shown in bold.

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## LIST OF PREPARERS

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Michael Rochelle – GIS Analyst

## DEFINITIONS

Study Area: The area throughout which the assessment was performed; the area composing the former USCG property at 101 Commodore Webster Drive (APN 119-240-73 and 119-236-10), totaling 33.59 acres.

Project Area: The area encompassing the proposed residential redevelopment project (grading limit); the area evaluated for potential impacts to sensitive biological resources, totaling 8.15 acres.

## LIST OF ABBREVIATIONS & ACRONYMS

| | |
|---|---|
| BIOS | Biogeographic Information and Observation System |
| BSA | Biological Site Assessment |
| CCA | California Coastal Act |
| CCC | California Coastal Commission |
| CCH | Consortium of California Herbaria |
| CCR | California Code of Regulations |
| CDFG | California Department of Fish and Game (now CDFW) |
| CDFW | California Department of Fish and Wildlife |
| CESA | California Endangered Species Act |
| CEQA | California Environmental Quality Act |
| CFGC | California Fish and Game Code |
| CFR | Code of Federal Regulations |
| CLAM | Community Land Trust Association of West Marin |
| CNDDB | California Natural Diversity Database |
| CNPPA | California Native Plant Protection Act |
| CNPS | California Native Plant Society |
| County | County of Marin |
| Corps | U.S. Army Corps of Engineers |
| CRLF | California Red-legged Frog |
| CSRL | California Soils Resources Lab |
| CWA | Clean Water Act |
| Eden | Eden Housing, Inc. |
| EFH | Essential Fish Habitat |
| EIR | Environmental Impact Report |
| EPA | U.S. Environmental Protection Agency |
| ESA | (Federal) Endangered Species Act |
| ESHA | Environmentally Sensitive Habitat Area |
| LCP | Marin County Amended Local Coastal Program |
| LCP-IP | Marin County Amended Local Coastal Program Implementation Plan |
| LUP | Land Use Plan |
| MBTA | Migratory Bird Treaty Act |
| NMFS | National Marine Fisheries Service |
| NRCS | Natural Resource Conservation Service |
| NWI | National Wetland Inventory |
| OHWM | Ordinary High Water Mark |
| Rank | California Rare Plant Ranks |
| RWQCB | Regional Water Quality Control Board |
| SCA | Stream Conservation Area |
| SSC | Species of Special Concern |
| SFP | State Fully Protected Species |
| SWRCB | State Water Resource Control Board |
| TOB | Top of Bank |
| USCG | U.S. Coast Guard |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |

| | |
|---|---|
| USGS | U.S. Geological Survey |
| WBWG | Western Bat Working Group |
| WCA | Wetland Conservation Area |
| WRA | WRA, Inc. |
| WUI | Wildland Urban Interface |

# 1.0 INTRODUCTION

On January 20, April 4, and June 4, 2021 WRA, Inc. (WRA) performed an assessment of biological resources at the site of the former U.S. Coast Guard (USCG) housing facility at 101 Commodore Webster Drive, Point Reyes Station, Marin County, California (APNs #119-240-73, and 119-236-10; hereafter Study Area) (Figure A-1, Appendix A).

## 1.1 Overview and Purpose

The purpose of this study was to gather the information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) and the requirements of the Marin County Community Development Agency, Planning Division.

A biological site assessment (BSA) provides general information on the presence, or potential presence, of sensitive species and habitats. These survey(s) contain the results of a focused protocol-level survey for listed plant species in the Study Area; however, protocol-level surveys for wildlife may or may not be included as part of the survey. This survey is not a formal wetland delineation; in instances where such a delineation may be required for project approval by local, state, or federal agencies, results would be reported herein, but may be presented elsewhere in separate reports. This survey is based on information available at the time of the study and on-site conditions that were observed on the date(s) the site was visited.

This report describes the results of the site visit, which assessed the Study Area for (1) the presence of sensitive land cover types, (2) the potential for land cover types on the site to support special-status plant and wildlife species, and (3) the presence of any other sensitive natural resources protected by local, state, or federal laws and regulations. Special-status species observed during the site assessment were documented and their presence is discussed herein. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys or other studies be conducted; recommendations for additional studies are provided, if necessary. WRA completed a draft BSA report associated with the initial Coastal Permit and Use Permit application submitted by the Project Applicant (defined below) in August 2022. This revised report addresses comments received from the County of Marin Community Development Agency, Planning Division, in a letter dated September 16, 2022, and comments received from the CCC in a letter dated September 14, 2022.

## 1.2 Project Description

The Community Land Trust Association of West Marin (CLAM), its partner, Eden Housing (Eden) ('Applicant', collectively) are seeking approval of the USCG Housing Facility Redevelopment Project (Project) which proposes to rehabilitate 36 existing townhomes to affordable housing, redevelop a former barracks building into 15 additional units of affordable housing, and convert an office and maintenance building into 3 units of affordable housing.

During the site visits, WRA identified several Environmentally Sensitive Habitat Areas (ESHA), including aquatic and terrestrial ESHAs. The Project Area contains existing nonconforming structures/uses that are located within aquatic and terrestrial ESHA buffers, and the development of the project will variably repair

existing nonconforming structures, repair structures within the reduced ESHA buffers, or remove existing nonconforming structures/uses where possible. A reduced buffer analysis was performed in this report where development is proposed within ESHA buffers. Best management practices and avoidance measures are included as part of the project and provided herein to ensure that wetlands, streams, and riparian habitats (aquatic resources collectively), and sensitive terrestrial resources (e.g. upland native grassland) within the Project are protected. The work which will occur within ESHA buffers is expected to create a net environmental improvement over existing conditions, by improving water quality, elimination of on-site invasive species, and increasing native vegetation cover. A complete listing of sensitive natural resources or potential ESHA within the Project Area is included in Section 5.0 below.

The affordable housing project includes the rehabilitation of 36 townhomes and adaptive reuse of Building 50 into 15 affordable housing units; the rehab of Building 100A into 3 affordable housing units, and the conversion and expansion of Building 1 into property management and resident services office space; the construction of a new playground at the center of the site; and the development of an on-site wastewater treatment system. Building 100C will be minimally updated, with no change in use as a mechanical shop and storage. The Project also proposes the removal of certain features such as a playground, and habitat restoration in those areas which would improve site drainage.

The existing hardscape areas around Building 1, including the small parking area, tennis court and other paved surfaces, will be removed and replaced with pervious surface or improved and repurposed to allow for better pedestrian flow, use and drainage.

The Project will remove 36 mature trees, all of which are non-native ornamental species, and none of which are on the Marin County Local Coastal Program-Implementation Plan (LCP-IP) list of Heritage or Protected Trees. Trees that will be removed are predominantly eucalyptus (*Eucalyptus grandis, E. globulus, E. g. 'compacta', E. nicholii, E. viminalis,* etc.), dead trees, and other ornamental trees which will be in the direct line of construction. Ten (10) of the aforementioned non-native eucalyptus trees to be removed, and one Leyland cypress (*Cupressus x leylandii*) to be removed are located within aquatic ESHA buffers, and are therefore subject to coastal development permitting requirements.

Based on section 24.04.625 (d) of the Marin County Municipal Code, grading is prohibited during the rainy season defined as October 15 through April 15 without an exception requested and granted. All grading and excavation will be conducted between April 16 and October 14.

As all major grading and excavation work will occur between April 16 and October 14, it is expected that initial grubbing and grading (including tree removal and initial grading) may occur during the nesting bird season, defined as: February 1 through August 31. To avoid impacts to nesting birds, WRA recommends that all vegetation removal (including tree trimming, if relevant) be performed from September 1 to January 31, outside of the general nesting bird season. If such timing is not feasible, a pre-construction nesting bird survey by a qualified biologist will be performed no more than 14 days prior to the initiation of tree removal. The survey should cover the tree removal areas and surrounding areas (as accessible) within 250 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer will be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer. This will result in no impact to nesting birds in the Project Area.

## 2.0 REGULATORY BACKGROUND

This report is intended to facilitate conformance of the proposed Project with the standards outlined in the Marin County Code and General Plan. In addition to the requirements of Marin County, the proposed Project may also be subject to several federal and state regulations designed to protect sensitive natural resources. Full analysis of these requirements in the context of the Project are addressed herein.

### 2.1 Federal and State Regulatory Setting

#### *2.1.1 Sensitive Land Cover Types*

Land cover types are herein defined as those areas of a particular vegetation type, soil or bedrock formation, aquatic features, and/or other distinct phenomenon. Typically, land cover types have identifiable boundaries that can be delineated based on changes in plant assemblages, soil or rock types, soil surface or near-surface hydroperiod, anthropogenic or natural disturbance, topography, elevation, etc. Many land cover types are not considered sensitive or otherwise protected under the environmental regulations discussed here. However, these land cover types typically provide essential ecological and biological functions for plants and wildlife, including, frequently, special-status species. Those land cover types that are considered or protected under one or more environmental regulations are discussed below.

Waters of the United States: The United States Army Corps of Engineers (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 waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the Corps Wetlands Delineation Manual (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark (OHWM). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the United States generally requires an individual or nationwide permit from the Corps under Section 404 of the CWA.

Waters of the State: 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 Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat: Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction 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 California Code of Regulations (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). In addition, 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" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is 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.

Sensitive Natural Communities: Sensitive natural communities not discussed above 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" (CDFG 2010, CDFW 2018a) and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2022a). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2018) methodology, with those alliances 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 (CCR Title 14, Div. 6, Chap. 3, Appendix G).

### *2.1.2 Special-status Species*

Plants: Special-status plants include taxa that have been listed as endangered or threatened, or are formal candidates for such listing, under the federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA). The California Native Plant Protection Act (CNPPA) lists 64 "rare" or "endangered" and prevents "take", with few exceptions, of these species. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1, 2, and 3 are also considered special-status plant species and must be considered under CEQA. 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. A description of the CNPS Ranks is provided in Appendices B and C.

Wildlife: As with plants, special-status wildlife includes species/taxa that have been listed or are formal candidates for such under ESA and/or CESA. 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 ESA. The CFGC designates some species as Fully Protected (SFP), which indicates that take of that species cannot be authorized through a state permit. Additionally, CDFW Species of Special Concern (species that face extirpation in California if current population and habitat trends continue) are given special consideration under CEQA, and are therefore considered special-status species. 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 (MBTA) 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.

Critical Habitat, Essential Fish Habitat, and Wildlife Corridors: Critical habitat is a term defined in the ESA as a specific and formally-designated geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. Note that designated critical habitat areas that are currently unoccupied by the species but which are deemed necessary for the species' recovery are also protected by the prohibition against adverse modification.

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) provides for conservation and management of fishery resources in the U.S. 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.

Movement and migratory corridors for native wildlife (including aquatic corridors) as well as wildlife nursery sites are given special consideration under CEQA.

## 2.2 Marin County Regulatory Setting

In Marin County, a sensitive resource includes "jurisdictional wetlands, occurrences of special-status species, occurrences of sensitive natural communities, wildlife nurseries and nesting areas, and wildlife movement corridors. The County development review process typically requires a site assessment by qualified professionals to confirm whether any sensitive resources could be affected . . ." Furthermore, The California Coastal Act (CCA) defines environmentally sensitive habitat area (ESHA) under Section 30107.5 and protected under section 30240 and include wetlands, rivers, streams and lakes, and riparian areas. For the purposes of this report, WRA has taken into consideration any areas that may meet the definition of any ESHA defined by the CCA, listed in the *Statewide Interpretive Guidelines for Identifying and Mapping Wetlands and Other Wet Environmentally Sensitive Habitat Areas* ("California Coastal Commission guidelines", CCC 1981), or the Marin County Amended Local Coastal Program (LCP) Land Use Plan (LUP) (Marin County 2016).

The CCA defines an ESHA as follows:

> *"Environmentally sensitive habitat area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an*

*ecosystem and which could be easily disturbed or degraded by human activities and developments. "*

The CCC Guidelines discuss the various definitions for specific types of ESHAs, including wetlands, streams and riparian areas. Many of these definitions are synonymous with the definitions described above. Additional definitions are provided below.

Coastal Act Wetlands

The Coastal Act defines wetlands as:

"*Wetland means land within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens".*

(Public Resources Code § 30121)

CCC Administrative Regulations (Section 13577 (b)) provide a more explicit definition:

*"Wetlands are lands where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salt or other substance in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deepwater habitats."*

The Coastal Act defines the upland limit of wetlands as:

*(1) the boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover; (2) the boundary between soil that is predominantly hydric and soil that is predominantly non-hydric; or (3) in the case of wetlands without vegetation or soil, the boundary between land that is flooded or saturated at some time each year and land that is not."*

Coastal Act Streams and Rivers: The Marin County LCP provides special protections for USGS blue-line streams, and establishes buffers to protect streams from the impacts of adjacent uses including development impacts from construction and post-construction activities within the LCP Unit II Area. Stream buffers are defined by the LCP as: "the area covered by riparian vegetation on both sides of the stream and the area 50 feet landward from the edge of the riparian vegetation." The LCP states that the buffer shall be the wider of the following on both sides of the stream: (a) the area 50 feet landward from the other edge of the riparian vegetation; or (b) the area 100 feet landward from the top of the stream banks; or (c) as recommended by the biological assessment."

Coastal Act Riparian Habitats: While riparian vegetation is not defined specifically in the California Coastal Act, it is defined by the LCP as the stream itself and the riparian vegetation growing adjacent to it. Common plant genera associated with this vegetation type in Unit II of the Coastal Zone within Marin

County include maple (*Acer* spp.), alder (*Alnus* spp.), ash (*Fraxinus* ssp.), and willow (*Salix* spp.). For the purposes of determination of status under the Coastal Act, we define riparian habitat as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). This definition is synonymous with the CDFW definition described above.

Coastal Act Terrestrial ESHA: The Marin County LCP/LUP defines terrestrial (non-aquatic) ESHA as habitats of plant and animal species listed under the Federal or California Endangered Species Act and existing populations of the plants listed as 1B or 2 by the California Native Plant Society; coastal dunes; groves of trees that provide colonial nesting and roosting habitat for butterflies or other wildlife; and riparian vegetation that is not associated with watercourse. Buffers for terrestrial ESHA shall be 50 feet Buffers for terrestrial ESHA shall be 50 feet, a width that may be adjusted by the County as appropriate to protect the habitat value of the resource, but in no case shall be less than 25 feet.

Marin County Stream Conservation Areas: In Marin County, a Stream Conservation Area (SCA) is designated along perennial, intermittent, and some ephemeral streams. The SCA consists of the watercourse itself between the tops of the banks and a strip of land extending laterally outward from the top of both banks equaling 100 feet from TOB or 50 feet from edge of riparian, whichever is greater. With regard to ephemeral streams, such streams are subject to the SCA policies if it (a) supports riparian vegetation for a length of 100 feet or more, and/or (b) supports special status species and/or a sensitive natural community type, such as native grasslands, regardless of the extent of riparian vegetation associated with the stream. For those ephemeral streams that do not meet these criteria, a minimum 20-foot development setback shall be required. Development activities that may occur within a SCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

Marin County Wetland Conservation Areas: In Marin County, a Wetland Conservation Area (WCA) is designated around all Corps jurisdictional wetlands. The WCA consists of the wetland itself and a strip of land extending laterally outward from the wetland for a distance of 100 feet or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. Development activities that may occur within a WCA are closely regulated by the County and require consideration of impacts of proposed developments on species and habitats during the environmental review process.

Marin County Protected and Heritage Trees : The Marin County Local Coastal Plan – Implementation Plan defines "protected" and "heritage" which are comprised of native tree species including but not limited to: native oaks (*Quercus* spp.), willows (*Salix* spp.), Sargent cypress (*Hesperocyparis sargentii* [*Cupressus* s.]), and madrone (*Arbutus menziesii*) with a minimum diameter at breast height (DBH; measured 4.5 feet above grade) of six inches, and most other native tree species, including but not limited to Douglas fir (*Pseudotsuga menziesii*) and California bay (*Umbellularia californica*) with a minimum DBH of 10 inches. Heritage trees are defined as native oaks, willows, Sargent cypress, and madrone with a minimum DBH of 18 inches, and most other native tree species with a minimum DBH of 30 inches[1]. Removal of protected and/or heritage trees as defined above are subject to coastal development permitting requirements.

[1] Marin LCP Protected and Heritage Tree list treats the same species and sizes of trees as Protected and Heritage Trees.

## 3.0 ENVIRONMENTAL SETTING

The approximately 33.59-acre Study Area is set across two parcels including the former USCG housing facility and one additional parcel. It is located in western Marin County, on the southeastern edge of the unincorporated community of Point Reyes Station. Detailed descriptions of the local setting are below.

### 3.1 Topography and Soils

The overall topography of the Study Area is flat in previously developed areas, transitioning to a moderately-steep hill slope in the northwest portion of the Study Area, and undulating to flat topography associated with the Lagunitas Creek stream terrace. Elevations within the Study Area range from approximately 6 to 81 feet above sea level.

According to the *Soil Survey of Marin County* (USDA 1985), the Study Area is underlain by five soil mapping units: Blucher-Cole complex, 2 to 5 percent slopes; Cortina gravelly sandy loam, 0 to 5 percent slopes; Olompali loam, 2 to 9 percent slopes; Saurin-Bonnydoon complex, 2 to 15 percent slopes; and Xerothents, fill. The Study Area's soil mapping units are described below.

Blucher-Cole complex, 2 to 5 percent slopes. This soil mapping unit is very deep, and somewhat poorly drained silt loam to clay loam formed in alluvium from various types of rock. It consists of approximately 40 percent Blucher silt loam, and 30 percent Cole clay loam (USDA 1985). This map unit is located in basins and on alluvial fans at elevations between 0 and 500 feet above sea level. The native vegetation is typically dominated by annual grasses and forbs (USDA 1985).

Cortina gravelly sandy loam, 0 to 5 percent slopes. This soil mapping unit is very deep, and somewhat excessively drained gravelly sandy loam formed in alluvium derived from various kinds of rock. The mapping unit is located on valley floors and along streams at elevations between 25 and 300 feet above sea level. It consists of approximately 40 percent Blucher silt loam, and 30 percent Cole clay loam (USDA 1985). The native vegetation is typically dominated by annual grasses and forbs (USDA 1985).

Olompali loam, 2 to 9 percent slopes. This soil mapping unit is deep, and somewhat poorly drained loam formed in alluvium derived from various kinds of rock. The mapping unit is located on coastal terraces at elevations between 50 and 800 feet above sea level. This soil mapping unit consists predominantly of Olompali loam with limited inclusions of various other soils at upper ends of slopes, and along drainageways (USDA 1985). The native vegetation is typically dominated by annual grasses, forbs, and rushes (USDA 1985).

Saurin-Bonnydoon complex, 2 to 15 percent slopes. This soil mapping unit is moderately deep, and well drained clay loam to gravelly loam formed in material derived from sandstone and shale. The mapping unit is located on rolling uplands with complex slopes at elevations between 50 and 1,500 feet above sea level. This soil mapping unit consists of 50 percent Saurin clay loam, and 30 percent gravelly loam with inclusions of various other soil types (USDA 1985). The native vegetation is mainly annual grasses, forbs, and scattered brush (USDA 1985).

Xerothents, fill. This mapping unit consists of soil material that has been moved mechanically and mixed. Most of this unit is in urban areas that have been developed previously. Varying amounts of rock, concrete, asphalt and other material are typically present within this mapping unit (USDA 1985).

### 3.2 Climate and Hydrology

The Study Area is located within the coastal fog belt of Marin County where summer temperatures are buffeted by fog and fog drip contributes to annual rainfall totals. Winter "tule" fog is common in the Study Area, and summer "coastal" fog emerges with increased interior temperatures. The average annual maximum temperature at the Point Reyes Lighthouse Station (CA047027), located approximately 13 miles west-southwest (WSW) of the Study Area, is 56.7 degrees Fahrenheit, while the average monthly minimum temperature is 48.1 degrees Fahrenheit. Predominantly, precipitation falls as rainfall with a monthly average of 17.05 inches. Precipitation bearing weather systems are predominantly from the west and south with the majority of rain falls between November and March (WRCC 2022).

The local watershed is Tomales Bay (HUC 12: 180500050304). Lagunitas Creek, a perennial stream, is located along the eastern border of the Study Area and is the prominent aquatic feature in the Study Area vicinity. Precipitation, overland sheet flow, rare flooding from Lagunitas Creek, and a rising-lowering shallow water table are the primary hydrologic sources. Local hydrology drains to the south into Lagunitas Creek and on towards Tomales Bay to the west.

### 3.3 Land Cover and Land Use

The Study Area consists of a former USCG housing facility, and undeveloped areas consisting of a perennial stream, Lagunitas Creek, adjacent floodplain/riparian habitat, and ungrazed grasslands. Historic aerial imagery (NETR 2022) indicates that the site was developed by the USCG some time between 1971 and 1983. The site, which has been vacant for several years, has recently been used by local fire departments for training and wildfire emergency staging.

This re-development project is located on the southeastern edge of the unincorporated town of Point Reyes Station. Regional land uses include rural residential, livestock grazing, and protected open space (Google Earth 2022).

## 4.0 ASSESSMENT METHODS

Prior to the site visit, WRA biologists reviewed the following literature and performed database searches to assess the potential for sensitive natural communities (e.g., wetlands) and special-status species (e.g., endangered plants):

- *Soil Survey of Marin County, California* (USDA 1985)
- Inverness 7.5-minute quadrangle (USGS 2022)
- Contemporary aerial photographs (Google Earth 2022)
- Historical aerial photographs (NETR 2022)
- National Wetlands Inventory (NWI, USFWS 2022a)
- California Natural Diversity Database (CNDDB, CDFW 2022a)
- CDFW Biogeographic Information and Observation System (BIOS) (CDFW 2022b)
- California Native Plant Society Electronic Inventory (CNPS 2022a)
- Consortium of California Herbaria (CCH 2021)

- CDFW Publication, *California Bird Species of Special Concern in California* (Shuford and Gardali 2008)
- CDFW and University of California Press publication *California Amphibian and Reptile Species of Special Concern* (Thomson et al. 2016)
- *The Marin County Breeding Bird Atlas* (Shuford 1993)
- *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003)
- *eBird* Online Database (eBird 2022)
- *Marin Flora* (Howell et al. 2007)
- *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009)
- *A Manual of California Vegetation Online* (CNPS 2022b)
- *Preliminary Descriptions of the Terrestrial Natural Communities* (Holland 1986)
- *California Natural Community List* (CDFW 2018a)

Database searches for special-status species (i.e., CNDDB, CNPS) focused on the Inverness, Drakes Bay, Tomales, Point Reyes NE, Petaluma, San Geronimo, Bolinas, and Double Point USGS 7.5-minute quadrangles for special-status plants. Appendix A contains observations of special-status species documented within a five-mile radius of the Study Area.

Following the remote assessment, a botanist with 40-hour Corps wetland delineation and wildlife biologist training traversed the entire Study Area on foot to document: (1) land cover types (e.g., terrestrial communities, aquatic resources), (2) if and what type of aquatic natural communities (e.g., wetlands) are present, (3) existing conditions and to determine if such provide suitable habitat for any special-status plant or wildlife species, and (4) if special-status species are present[2]. Site visits were conducted on several dates throughout 2021, including January 20, April 4, and June 4.

## 4.1 Land Cover Types

### *4.1.1 Terrestrial Land Cover Types*

Terrestrial land cover types were mapped across the Study Area and evaluated to determine if such areas have the potential to support special-status plants or wildlife. In most instances, communities are delineated based on distinct shifts in plant assemblage (vegetation), and follow the *California Natural Community List* (CDFW 2018a), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), *A Manual of California Vegetation, Online Edition* (CNPS 2022b). In some cases, it may be necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature; should an undescribed variant be used, it will be 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), were evaluated as sensitive as part of this evaluation.[3]

### *4.1.2 Aquatic Resources*

Aquatic resources include Waters of the U.S., Waters of the State, and Streams, Lakes, and Riparian Habitat as defined in the CWA, Porter-Cologne Act, and CFGC, respectively. Marin County mandates

[2] Due to the timing of the assessment, it may or may not constitute protocol-level species surveys; see Section 4.2 if the site assessment would constitute a formal or protocol-level species survey.

[3] Ranking of CDFW List of Vegetation Alliances is based on NatureServe Rankings (NatureServe 2018)

setbacks from these aquatic resources, and therefore requires mapping of the outward extent of such features.

This site assessment does not constitute a formal wetland delineation; however, the surveys looked for superficial indicators of wetlands such as hydrophytic vegetation (i.e., plant communities dominated by wetland species), evidence of inundation or flowing water, saturated soils and seepage, and topographic depressions/swales. If sample points were taken, WRA followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008).

If streams potentially jurisdictional under the CWA and/or the CFGC are noted on a site, they are delineated using a mix of surveyed topography data, high resolution aerial photographs, and a sub-meter GPS unit. The ordinary high water mark would be used to determine the extent of potential Section 404 jurisdiction, while the top-of-bank would be used to determine the extent of CFGC Section 1602 and 401. Streams with associated woody vegetation were assessed to determine if these areas would be considered riparian habitat by the CDFW following *A Field Guide to Lake and Streambed Alteration Agreements, Section 1600-1607, California Fish and Game Code* (CDFG 1994). Finally, all streams were assessed to determine if they meet the criteria of an SCA per the Marin CWP.

## 4.2 Special-status Species

### *4.2.1 General Assessment*

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the greater vicinity through a literature and database review. Database searches for known occurrences of special-status species focused on the 7.5-minute USGS quadrangles mentioned above for special-status species.

A preliminary site visit was made on January 20, 2021 to evaluate the presence of suitable habitat for special-status species. Suitable habitat conditions are based on physical and biological conditions of the site, 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 site 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 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.

- Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site in the recent past.

If a more thorough assessment was warranted, a targeted or protocol-level assessment or survey was conducted or recommended as a future study. Additional targeted protocol-level surveys for special-status plants were conducted on April 4, and June 4, 2021. Methods for the assessments are described below. If a special-status species was observed during the site visit, its presence was recorded and discussed below in Section 5.2.

### *4.2.2 Special-status Plants*

A general botanical assessment was performed on January 20, 2021, and a follow up protocol-level rare plant survey was conducted on April 4, and June 4. The assessments consisted of traversing the entirety of the Study Area on foot and identifying all observed plant species to the taxonomic level necessary to determine whether or not they were sensitive. Habitat elements required or associated with certain species or species groups were searched for and noted. Such habitat elements include, but are not limited to: plant assemblages and vegetation structure; soil texture, parent material, and hydroperiod; surface and subsurface hydroperiods; topography, aspect, slope, and elevation; site management, including vegetation management; distance to documented occurrences of special-status plants; etc.

To determine the presence or absence of special-status plant species, focused surveys were conducted within the Study Area on April 4, and June 4, 2021. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. The field surveys were conducted by a WRA botanist familiar with the flora of Marin and surrounding counties. The surveys were performed in accordance with guidance described by resource experts and agencies (CNPS 2001, CDFW 2018c, USFWS 1996). Plants were identified using *The Jepson Manual, 2nd Edition* (Baldwin et. al. 2012) and Jepson Flora Project (eFlora 2022), to the taxonomic level necessary to determine whether or not they were sensitive. Plant names follow those of Jepson Flora Project (eFlora 2021), unless otherwise noted.

### *4.2.3 Special-status Wildlife*

A general wildlife assessment was performed on January 20, 2021. This assessment consisted of traversing the entirety of the Study Area as well as substantial portions of the Subject Property. Habitat elements required or associated with certain species (e.g., northern spotted owl) or species groups (e.g., bats, anadromous fish) were searched for and noted. Such habitat elements include, but are not limited to: plant assemblages and vegetation structure; stream depth, width, hydro-period, slope, and bed-and-bank structure; rock outcrops, caves, cliffs, overhangs, and substrate texture and rock content; history of site alteration and contemporary disturbances; etc.

### *4.2.4 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors*

Prior to the site visit the USFWS Critical Habitat Mapper (USFWS 2022b) and the NMFS Essential Fish Habitat Mapper (NMFS 2022) were queried to determine if critical habitat for any species or EFH, respectively, occurs within the Study Area. To account for potential impacts to wildlife movement/migratory corridors, biologists reviewed maps from the California Essential Connectivity Project (CalTrans 2010), habitat connectivity data available through the CDFW Biogeographic Information

and Observation System (BIOS) (CDFW 2022b). Additionally, aerial imagery (Google 2022) 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.

# 5.0 ASSESSMENT RESULTS

## 5.1 Land Cover Types

WRA observed nine land cover types and aquatic resources within the Study Area with only developed/landscaped, and non-native annual grassland occurring in the Project Area (Appendix A, Figure 4). The Project Area has been intentionally sited to avoid direct impacts to all sensitive terrestrial land cover types, and aquatic resources. All terrestrial land cover types and aquatic resources observed in the Study Area are described in detail below.

### *5.1.1 Terrestrial Land Cover Types*

The Study Area contains four terrestrial land cover types, including: developed/landscaped areas, non-native annual grassland, purple needlegrass grassland, and California bay forest. Of these terrestrial land cover types, only purple needlegrass grassland classifies as a terrestrial ESHA. Terrestrial land cover types in the Study Area are described in detail below.

Developed/Landscaped Area (no vegetation alliance). No Rank. The Study Area contains approximately 9.66 acres of previously developed/landscaped areas. Within the Study Area, developed/landscaped portions are composed of the former USCG barracks, buildings, associated infrastructure (e.g. roads, parking lots, and sidewalks), and ornamental trees and shrubs. The topography of the developed/landscaped area has been altered from its original form, graded to accommodate development. The vegetation is highly altered, consisting of non-native ornamental trees and shrubs, and disturbance tolerant herbs. Species include Deodar cedar (*Cedrus deodara*), Monterey pine (*Pinus radiata*), Mexican fan palm (*Washingtonia robusta*), slim oat (*Avena barbata*), English lawn daisy (*Bellis perennis*), and bristly ox-tongue (*Helminthotheca echioides*). This community is not considered sensitive by Marin County, CDFW, or any other regulatory entity.

Non-native annual grassland (various vegetation alliances; xeric, non-wetland). No Rank. The Study Area contains approximately 7.77 acres of xeric (non-wetland) non-native annual grassland composed of several alliances of annual and perennial non-native grasses. Vegetative cover within this community is typically dominated by dense non-native invasive grasses and forbs including slim oat (*Avana barbata*), ripgut brome (*Bromus diandrus*), reed fescue (*Festuca arundinacea*), and purple false brome (*Brachypodium distachyon*). This community borders and intergrades with adjacent stands of native purple needlegrass grassland on slopes, and it borders mesic grassland, and seasonal wetlands on low-lying flats and depressions. Commonly observed forbs within non-native annual grassland included coastal heron's bill (*Erodium cicutarium*), sheep sorrel (*Rumex acetosella*), lupine (*Lupinus bicolor*), and hairy cat's ear (*Hypochaeris radicata*). This community is not considered sensitive by Marin County, CDFW, or any other regulatory entity.

Purple needlegrass grassland (Needlegrass – melic grass grassland (*Stipa* [*Nassella*] spp. – *Melica* spp. Herbaceous Alliance) G4, S4. The Study Area contains approximately 0.61 acre of purple needlegrass grassland. This vegetation community occupies portions of the uppermost slope in the northern portion of the Study Area, as well as a small area in the southern portion of the Study Area. This community within the Study Area occurs in upland (xeric) areas on slopes. This alliance was mapped following CNPS (2022b) in areas containing purple needlegrass (*Stipa pulchra*) with greater than 10 percent relative cover. Within the Study Area, this community contains 10 to 40 percent relative cover of purple needlegrass. Other species observed include slim oat, purple false brome, California oatgrass (*Danthonia californica*), lupine, blue eyed grass (*Sisyrinchium bellum*), and flax (*Linum bienne*). Although purple needlegrass grassland was recently lumped by CDFW into the needlegrass – melic grassland alliance which is considered apparently secure globally, and in California (i.e. G4, S4), purple needlegrass grassland within the Study Area fits within the membership rules of the *Stipa* [*Nassella*] *pulchra* – *Bromus* spp. Association, which is considered sensitive by CDFW (CDFW 2018a). Therefore, this community is considered a terrestrial ESHA subject to a 50-foot, or minimum (reduced) 25-foot development setback. A reduced buffer analysis would be required when adjusting the buffer to less than 50 feet. However, the Project avoids all terrestrial ESHA by more than 50 feet. Thus, no reduced buffer analysis is required or provided for terrestrial ESHAs.

California bay forest (*Umbellularia californica* Forest Alliance) G4, S3. The Study Area contains approximately 1.13 acres of California bay forest in the northern portion of the Study Area. California bay is a native, evergreen broadleaf tree which is common and widespread throughout Marin County (Howell et al. 2007). This alliance was mapped following CNPS (2019b) as containing California bay greater than 50 percent relative cover in the tree canopy. Within the Study Area, this community borders the arroyo willow thicket riparian community, on upland slopes above the riparian zone. The canopy is dominated California bay, with inclusions of non-native invasive blue gum eucalyptus (*Eucalyptus globulus*), and coast live oak (*Quercus agrifolia*). The understory is sparsely dominated by forget me not (*Myosotis latifolia*), lady fern (*Athyrium filix-femina* var. *cyclosorum*), and poison oak (*Toxicodendron diversilobum*). California bay forest is reported by the CDFW with a rarity ranking of G4, S3 (CNPS 2022b), indicating that it is globally secure but vulnerable within California. However, this community is widespread and abundant in Marin County. Due to its locally common distribution, presence of non-native invasive blue gum eucalyptus (*Eucalyptus globulus*), and likely presence of sudden oak death (*Phytophthora ramorum*), as evidenced by dead and dying coast live oak within this community, this community is not considered sensitive locally, nor does it classify as a terrestrial ESHA.

### *5.1.2 Aquatic Resources*

The Study Area contains five aquatic land cover types described in detail below, including: arroyo willow thicket (riparian), perennial stream, ephemeral ditch, CCC seasonal wetland (one or more parameter), and Corps seasonal wetland (three parameter). All aquatic land cover types, besides ephemeral ditch, are considered aquatic ESHAs.

Arroyo willow thicket (riparian) (*Salix lasiolepis* Shrubland Alliance), G4, S4, CDFW Jurisdiction, Aquatic ESHA, SCA. The Study Area contains approximately 11.44 acres of arroyo willow (*Salix lasiolepis*) thicket associated with the stream and floodplain of Lagunitas Creek, a perennial stream located along the eastern border of the Study Area. This alliance was mapped following CNPS (2022b) as containing arroyo willow greater than 50 percent relative cover in the tree canopy. The canopy is dominated arroyo willow

with inclusions of red willow (*Salix laevigata*), red alder (*Alnus rubra*), Oregon ash (*Fraxinus latifolia*), and box elder (*Acer negundo*). The understory is typically dominated by dense cover of California blackberry (*Rubus ursinus*). Arroyo willow thicket is reported by the CDFW with a rarity ranking of G4, S4 (CNPS 2022b), indicating that it is globally secure and secure within California. However, this community is considered riparian vegetation under the jurisdiction of CDFW per Section Sections 1600-1616 of the CFGC. Arroyo willow thicket classifies as an aquatic ESHA subject to a minimum 50-foot development setback.

Perennial stream, Corps, RWQCB, CDFW Jurisdiction, Aquatic ESHA, SCA. The Study Area contains approximately 1.61 acre of perennial stream (Lagunitas Creek). Lagunitas Creek is located mostly outside of the Study Area, but small portions of its western side enter the eastern boundary of the Study Area. Lagunitas Creek in the vicinity of the Study Area is approximately 30 to 60 feet wide between OHWMs, and the stream contained flowing water during the site visits. Lagunitas Creek is bordered by a riparian arroyo willow thicket, and non-native annual grassland described above. Areas mapped as perennial stream are considered jurisdictional under Section 404 of the CWA, the Porter-Cologne Act, and Section 1600-1616 of the CFGC. Areas mapped as perennial stream classify as an aquatic ESHA subject to a buffer which is the wider of the following: (a) 50 feet landward from the outer edge of the riparian vegetation; or (b) the area 100 feet landward from the top of the stream banks; or (c) as recommended by the biological assessment. Since the riparian vegetation extends beyond 50 feet from the top of the stream banks on the Project side, the applicable ESHA buffer is 50 feet landward of the outer edge of riparian vegetation.

Ephemeral ditch, Corps, RWQCB Jurisdiction, non-ESHA. The Study Area contains approximately 0.01 acre of potentially Corps, and RWQCB jurisdictional ephemeral ditch. One ditch is located within the riparian woodland in the north of the site along an historic dirt road. The other ephemeral ditch which is closer to the Project Area originates from a culvert, located in the southern portion of the Study Area, south of the entry road. The ephemeral ditch is approximately 30 feet in length and approximately 2 to 4 feet wide between top of bank (TOB). The ephemeral ditch likely flows only during periods of above average precipitation. This feature flows into an adjacent CCC seasonal wetland (one parameter). Although this feature appears to be manmade, it may be considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act. However, ephemeral drainages do not meet the definition of 'stream' per the LCP-IP, which only includes intermittent and perennial streams. Therefore, the ephemeral ditch is not considered an ESHA, nor does it qualify as an SCA as it is an ephemeral drainage feature, lacking riparian vegetation. Therefore, ephemeral ditch features are subject to a 20 -foot ephemeral drainage setback per development standards.

CCC seasonal wetland (one parameter, mesic grassland), CCC Jurisdiction, Aquatic ESHA. The Study Area contains approximately 0.67 acre of grassland areas dominated by hydrophytic (facultative) grasses, meeting one wetland parameter (hydrophytic vegetation dominance test). CCC seasonal wetlands are located in low lying concave areas in the Lagunitas Creek floodplain, and in one location on the hillslope in the northwest portion of the Study Area, where a slightly mesic area is located. The two CCC seasonal wetlands located in the low-lying concave areas are bordered by more mesic seasonal wetland areas which met three wetland parameters. Areas mapped as CCC seasonal wetland are dominated by facultative grasses including common velvetgrass (*Holcus lanatus*), Italian ryegrass (*Festuca perennis*), and beardless wild rye (*Elymus triticoides*). These areas were investigated for indicators of hydrology and hydric soils, and hydric soils were characteristically absent; indicators of hydrology were occasionally

present. Areas mapped as CCC seasonal wetland are not jurisdictional to the Corps or RWQCB, but are considered jurisdictional to the CCC, and are considered aquatic ESHA requiring a 100 foot buffer, or minimum 50-foot development setback. Reduction of the wetland buffer to less than 100 feet requires a buffer adjustment analysis (provided in section 6.1.2, below) and cannot be reduced to a width of less than 50 feet from the edge of wetland vegetation. CCC seasonal wetlands do not qualify as WCAs as they lack more than two wetland parameters.

Seasonal wetland, Corps, RWQCB Jurisdiction, Aquatic ESHA, WCA. The Study Area contains approximately 0.69 acre of seasonal wetland, meeting three wetland parameters (hydrophytic vegetation, hydric soils, and hydrology). Seasonal wetlands within the Study Area are located in low-lying flat to concave areas in the Lagunitas Creek floodplain, and along the hillslope in the northwest portion of the site in a seep location. Dominant vegetation within seasonal wetlands included Mexican rush (*Juncus mexicanus*), Italian ryegrass, common velvetgrass, and barley (*Hordeum marinum* ssp. *gussoneanum*), with subdominance by brown headed rush (*Juncus phaeocephalus*), waxy mannagrass (*Glyceria declinata*), and tall cyperus (*Cyperus eragrostis*). Areas mapped as seasonal wetland, also contained indicators of wetland hydrology (including saturation, high water table) and hydric soils (including redox dark surface, or depleted matrix). Areas mapped as seasonal wetland are likely considered jurisdictional under Sections 401 and 404 of the CWA, the Porter-Cologne Water Quality Control Act, and would therefore classify as an aquatic ESHA, requiring a 100 foot buffer, or minimum 50-foot development setback. Reduction of the wetland buffer to less than 100 feet requires a buffer adjustment analysis (provided in section 6.1.2, below) and cannot be reduced to a width of less than 50 feet from the edge of wetland vegetation.

## 5.2 Special-status Species

### *5.2.1 Special-status Plant Species*

Based upon a review of the resource databases listed in Section 4.0, 112 special-status plant species have been documented in the vicinity of the Study Area. Twenty-five of these plants have the potential to occur in the Study Area; however only one of these plants, congested-headed hayfield tarplant is considered to have potential to occur in the Project Area. The remaining 87 special-status plants documented from the greater vicinity are unlikely or have no potential to occur for one or more of the following:

- Hydrologic conditions (e.g., tidal) 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

- Land use history and contemporary management (e.g., previous development of Coast Guard housing site) has degraded the localized habitat necessary to support the special-status plant species

Focused surveys for special-status plants determined to have a potential to occur in the Study Area were conducted on January 20, April 9, and June 4, 2021, and no special-status plants were identified in the Study Area or Project Area. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. Therefore, special-status plants are considered absent from the Study Area and Project Area. The following species were initially determined to have potential to occur in the Study Area:

- Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*), FE, Rank 1B.1
- Bent-flowered fiddleneck (*Amsinckia lunaris*), Rank 1B.2
- Swamp harebell (*Campanula californica*), Rank 1B.2
- Buxbaum's sedge (*Carex buxbaumii*), Rank 4.2
- Bristle-stalked sedge (*Carex leptalea*), Rank 2B.2
- Johnny-nip (*Castilleja ambigua* var. *ambigua*), Rank 4.2
- Western leatherwood (*Dirca occidentalis*), Rank 1B.2
- California bottle-brush grass (*Elymus californicus*), Rank 4.3
- Supple daisy (*Erigeron supplex*), Rank 1B.2
- Marin checker lily (*Fritillaria lanceolata* var. *tristulis*), Rank 1B.1
- Fragrant fritillary (*Fritillaria liliacea*), Rank 1B.2
- Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*), Rank 1B.2
- Short-leaved evax (*Hesperevax sparsiflora* var. *brevifolia*), Rank 1B.2
- Point Reyes horkelia (*Horkelia marinensis*), Rank 1B.2
- Thin-lobed horkelia (*Horkelia tenuiloba*), Rank 1B.2
- Harlequin lotus (*Hosackia gracilis*), Rank 4.2
- Coast iris (*Iris longipetala*), Rank 4.2
- Bristly leptosiphon (*Leptosiphon acicularis*), Rank 4.2
- Coast lily (*Lilium maritimum*), Rank 1B.1
- Point Reyes meadowfoam (*Limnanthes douglasii* ssp. *sulphurea*), SE, Rank 1B.2
- Marsh microseris (*Microseris paludosa*), Rank 1B.2
- Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), Rank 4.2
- North Coast semaphore grass (*Pleuropogon hooverianus*), ST, Rank 1B.2
- Nodding semaphore grass (*Pleuropogon refractus*), Rank 4.2
- Two-fork clover (*Trifolium amoenum*), FE, Rank 1B

### *5.2.2 Special-status Wildlife Species*

A total of 47 special-status wildlife species have been documented in the vicinity of the Study Area (CDFW 2022a, other sources). Fifteen of these species are considered present or have the potential to occur in the Study Area. The remaining 32 species are unlikely or have no potential to occur due to one or more of the following reasons:

- Aquatic habitats (e.g., marine waters, estuaries, vernal pools) necessary to support the special-status wildlife species are not present in the Study Area
- Vegetation habitats (e.g., coast redwood forest, coastal prairie) that provide nesting and/or foraging resources necessary support the special-status wildlife species are not present in the Study Area
- Physical structures and vegetation (e.g., mines, old-growth native coniferous trees) necessary to provide nesting, cover, and/or foraging habitat to support the special-status wildlife species are not present in the Study Area
- Host plants (e.g., violets [*Viola*]) necessary to provide larval and nectar resources for the special-status wildlife species are not present in the Study Area
- The Study Area is outside (e.g., north of, west of) of the special-status wildlife species documented nesting range.

The following special-status wildlife species are considered present or have the potential to occur in the Study Area.

*Listed species*

California red-legged frog (*Rana draytonii*). Federal Threatened, CDFW Species of Special Concern. Moderate Potential (Presence Unknown). The California red-legged frog (CRLF is the only native "pond frog" with a historic range throughout much of California. It is primarily aquatic; suitable breeding habitat is characterized by deep and still or slow-moving water associated with emergent marsh and/or overhanging/flooded riparian vegetation (USFWS 2010). Such habitats must typically hold water for a minimum of 20 weeks for successful reproduction to occur, and include ponds (perennial and temporary), backwaters in streams/creeks, marshes, lagoons, and dune ponds. Breeding typically occurs from November through April. Dependent upon local conditions, individuals may complete the entire life cycle in a particular habitat patch (e.g., a perennial pond suitable for all life stages), or utilize multiple habitat types. In aquatic features that dry down seasonally, CRLFs often undergo aestivation (a period of inactivity) during the dry months, over-summering in small mammal burrows, moist leaf litter, incised stream channels, or large cracks in the bottom of dried ponds (Thomson et al. 2016). During terrestrial dispersals and movements, frogs can travel greater than 1 mile over a variety of topographic and habitat types (Bulger et al. 2003). Upland movements habitats are variable and typically include riparian corridors, grasslands, and oak savannas.

As per documented occurrences in CNDDB (CDFW 2022a), CRLF is present in the vicinity of the Study Area. The nearest documented aquatic breeding occurrence is located approximately 0.2 mile to the south, and there are six additional occurrence locations within 1 mile (CDFW 2022a). CRLF breeding within the Study Area is unlikely overall, given the lack of ponds or isolated, deeper stream channels. However, there is potential for the species to occur in non-breeding aquatic habitat (e.g., inundated riparian side channels and backwaters) within and adjacent to the Study Area, and also to use uplands and other portions of the Study Area for movement and dispersal. Aestivation in suitable refugia (e.g., burrows) also has some potential to occur there.

Listed salmonids. Present (Lagunitas Creek only). As per Leidy et al. (2005) and CDFW (2022a), the following listed salmonid species are considered present in waters of Lagunitas Creek, including the limited portions of the stream within the Study Area:

- Steelhead (*Oncorhynchus mykiss irideus*) - Central California Coast DPS. Federal Threatened
- Coho salmon (*O. kisutch*) - Central California Coast ESU. Federal Endangered, State Endangered

Though natural history details differ between the two species, both spend the majority of their life cycle in the ocean but spawn and rear perennial to near-perennial freshwater streams with cool to clear water, high dissolved oxygen levels and strong flows. The reach of the creek within (and adjacent to) the Study Area provides in- and out-migration habitat and may also provide some degree of rearing support (e.g., within pools) depending on hydrological conditions in a given year. Lagunitas Creek is also designated as critical habitat for both species (see below).

California freshwater shrimp (*Syncaris pacifica*). Federal Endangered, State Endangered. Present (Laugnitas Creek only). The California freshwater shrimp is endemic to Marin, Sonoma, and Napa Counties. This species occurs in perennial streams, namely low-elevation and low-gradient stream reaches where the banks are structurally diverse, containing undercuts, exposed roots, overhanging woody debris, and/or overhanging vegetation. Lagunitas Creek is known to be occupied, and as per CDFW (2022a), surveys in 1998-1999 found the species "to Point Reyes Station" from an upstream location. Presence and abundance within the focal reach of the stream presumably varies dependent on current hydrological and other habitat conditions.

*Other species*

American badger (*Taxidea taxus*). CDFW Species of Special Concern. Moderate Potential (Remnant burrows observed). The American badger is a large, semi-fossorial member of the Mustelidae (weasel family). It is found uncommonly within the region in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. Badgers are typically solitary and nocturnal, digging burrows to provide refuge during daylight hours. Burrow entrances are usually elliptical (rather than round), and each burrow generally has only one entrance. Young are born in the spring and independent by the end of summer. Badgers are carnivores, preying on a variety of fossorial mammals (especially ground squirrels) and occasionally other vertebrates and their eggs. Home ranges for this species to be large, depending on the habitat available; population density averages one badger per square mile in prime open country (Long 1973).

Several remnant burrow entrances appearing to have been made by badgers were observed on the June 4, 2021 site visit. All of these were located in the open grassland area in the northern portion of the Study Area, and exhibited large holes and an elliptical shape, often with claw marks on the lateral sides of the entrances. None of the burrows examined appeared recently constructed or in active use by badgers. When present, soil throw piles were desiccated (not fresh), and the burrows featured cobwebs across the entrances, collapsed tunnels, or were in an otherwise clear state of degraded integrity. Though development is in close proximity, the area remains suitable for use by badgers under existing conditions (including the non-occupied status of buildings). Badger use of the area likely varies across years, and individuals have the potential to be present in the future.

Special-status bats. Moderate Potential. The following special-status bat species have CNDDB occurrences in the vicinity (CDFW 2021a) and the potential to be present within the Study Area:

- Pallid bat (*Antrozous pallidus*). CDFW Species of Special Concern, WBWG High Priority

- Townsend's big-eared bat (*Corynorhinus townsendii*). CDFW Species of Special Concern, WBWG High Priority

Within the Study Area both species are most likely to use building interiors for roosting, including maternity (breeding) roosting if conditions are favorable. Suitable substrates would include false ceilings, attics, or simply undisturbed/secluded spaces that retain warmth and have ingress/egress points accessible to bats. Other non-special-status bat species also have the potential to roost within these areas.

Grasshopper sparrow (*Ammodramus savannarum*). CDFW Species of Special Concern. Moderate Potential. The grasshopper sparrow is a summer resident in California, breeding in open grassland and prairie-like habitats with short- to moderate-height vegetation, and often scattered shrubs (Shuford and Gardali 2008). Both perennial and annual (non-native) grasslands are used. Nests are placed on the ground and well concealed, often adjacent to grass clumps (Shuford and Gardali 2008). Grasshopper sparrows are secretive and generally detected by voice. Insects comprise the majority of the diet. Though limited in contiguous size, areas of grassland within the Study Area may support breeding by this species, which is known from the vicinity (eBird 2022, Shuford 1993). The likelihood of presence may depend on the current condition (height, density) of on-site herbaceous vegetation.

White-tailed kite (*Elanus leucurus*). CDFW Fully Protected Species. Moderate Potential. White-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nesting occurs in trees, which are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates. Although not observed during site visits, the Study Area and surrounds provide suitable year-round habitat for this species and it may be present in the future.

San Francisco (saltmarsh) common yellowthroat (*Geothlypis trichas sinuos*). CDFW Species of Special Concern. Moderate Potential. This local subspecies of the common yellowthroat is found in freshwater marshes, coastal swales, riparian thickets, brackish marshes, and saltwater marshes. The breeding range extends from Tomales Bay in the north, Carquinez Strait to the east, and Santa Cruz County to the south. This species requires thick, continuous cover such as tall grasses, tule patches, or riparian vegetation down to the water surface for foraging and prefers willows for nesting (Shuford and Gardali 2008). Riparian vegetation with a dense understory may support year-round use by this species, including nesting.

Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*). CDFW Species of Special Concern. Moderate Potential. This subspecies of the common and widespread savannah sparrow is a year-round resident of the coastal California fog belt. It typically occupies upper tidally-influenced habitats, often found where wetland communities merge into grassland. Nesting occurs in vegetation on or near the ground, including along roads, levees, and canals (Shuford and Gardali 2008). Like most sparrows, Bryant's consumes primarily invertebrates and vegetable matter (e.g., seeds). Though limited in contiguous size, areas of grassland within the Study Area may support breeding by this species, which is known from the

vicinity (eBird 2022, Shuford 1993). Similar to grasshopper sparrow (above), the likelihood of presence may depend on the current condition (height, density) of on-site herbaceous vegetation.

(Brewster's) Yellow warbler (*Setophaga petechia brewsteri*). CDFW Species of Special Concern. Moderate Potential. The yellow warbler is a neotropical migrant bird that is widespread in North America, but has declined throughout much of its California breeding range. The Brewster's (*brewsteri*) subspecies is a summer resident and represents the vast majority of yellow warblers that breed in California. West of the Central Valley, typical yellow warbler breeding habitat consists of dense riparian vegetation along watercourses, including wet meadows, with willow growth especially being favored (Shuford and Gardali 2008). Insects comprise the majority of the diet. This species has the potential to nest in riparian woodland along Lagunitas Creek.

Western pond turtle (*Emys marmarota*). CDFW Species of Special Concern. High Potential (Lagunitas Creek). The western pond turtle is the only freshwater turtle native to most of California. This species is highly aquatic, typically inhabiting perennial waters including lakes, ponds/reservoirs, rivers, streams, and canals that provide submerged cover and suitable exposed basking structures such as rocks, logs and mats of emergent vegetation. Nesting usually occurs in spring to early summer, with eggs hatching in the fall; nests are excavated in upland areas with friable soil, usually on unshaded slopes within approximately 300 feet of water (Thomson et al. 2016). Hatchlings require shallow water with relatively dense emergent and aquatic vegetation to provide forage, usually aquatic invertebrates (Thomson et al. 2016). Lagunitas Creek provides perennial aquatic habitat for western pond turtle, and this species is presumably present there at least intermittently. Upland nesting within the Project Area is unlikely given its distance from the stream (approximately 220 feet at the nearest location and mostly greater), the presence of dense herbaceous vegetation between the stream and the Project Area, and the developed/disturbed nature of the portion of the Project Area facing the stream.

Tomales roach (*Lavinia symmetricus* ssp. "2"). CDFW Species of Special Concern. High Potential (Lagunitas Creek only). This local subspecies of the more widespread California roach (*L. symmetricus*), a native minnow, occurs in tributary streams of Tomales Bay. Occupied habitats are varied and include small, intermittent reaches, isolated pools (including those with low oxygen levels), cold, well-aerated streams, and even modified (e.g., channelized) stream environments. This species is likely present in the reach of Lagunitas Creek within the Study Area; abundance presumably varies based on current hydrological and other habitat conditions.

Monarch butterfly (*Danaus plexippus*). Federal Candidate, winter roosts protected by CDFW. Moderate Potential (winter roosting). Monarch butterfly winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts are located in wind-protected tree groves, with nectar and water sources nearby, and are often on south-, southwest-, or west-facing slopes which may provide more favorable temperature regimes and wind protection (Leong et al. 2004). Monarch butterflies typically arrive in mid-October to overwintering sites along the California coast and remain until late February or March (Jepsen et al. 2015). There is no record of monarch roosting within or near the Study Area; the nearest such site in CNDDB is located greater than 8 miles to the west on the Point Reyes peninsula (CDFW 2022a), and the Western Monarch Thanksgiving Count does not include the Study Area or adjacent areas (Xerces Society 2022). However, mature eucalyptus trees (commonly used by wintering monarchs) are

present within the Study Area, including some trees in stands and rough rows, which have some potential to be used by wintering monarchs.

Non-status nesting birds. Present/High Potential. Native birds with baseline protections under the MBTA and CFGC may use a variety of on-site habitats and substrates for nesting; the diversity of such species is presumably highest within the riparian woodland. However, other on-site vegetation (trees, shrubs, landscaping) is also likely used to some degree, as are the exteriors of buildings (under eaves, in crevice-like substrates, etc.). Though netting was installed under the eaves of most buildings during WRA's site visits, presumably to preclude bird nesting in the covered areas, active nests belonging to cliff swallows (*Petrochelidon pyrrhonota*) were observed on one building lacking the exclusion netting, and apparent barn swallow (*Hirundo rustica*) nests were also observed on light fixtures.

### *5.2.3 Critical Habitat, Essential Fish Habitat, and Wildlife Corridors*

The Study Area does not contain any designated critical habitat for USFWS-listed species, but the reach of Lagunitas Creek within and adjacent to the Study Area is designated critical habitat for steelhead and coho salmon (USFWS 2022a, NMFS 2022a). This portion of Lagunitas Creek is also mapped as Essential Fish Habitat for salmonids (NMFS 2022b).

As per CalTrans (2010) and CDFW (2022b), the Study Area is not within a mapped wildlife corridor, but is a very small component of a substantially larger "natural landscape block" which includes most of western Marin County. At a more local scale, Lagunitas Creek and associated riparian woodland provide noteworthy aquatic and terrestrial movement corridors, connecting southern Tomales Bay (and ultimately for some species, the ocean) with interior areas to the east. The remainder of the Study Area is already developed or otherwise bounded by development to the west and north, limiting any corridor functions.

### *5.2.4 Marin County Protected and Heritage Trees*

Per the client's arborist survey (Urban Forestry Associates 2022), the project will remove 36 mature trees, all of which are non-native ornamental species. Trees that will be removed are include several eucalyptus species, dead trees, and other ornamental trees, which will be in the direct line of construction. None of the trees slated for removal are on the LCP-IP protected and heritage tree list. However, trees to be removed regardless of species within ESHA buffers are considered 'major vegetation' removal and are therefore subject to coastal development permitting requirements.

## 6.0 PROJECT ANALYSIS AND RECOMMENDATIONS

### 6.1 Land Cover Types

### *6.1.1 Terrestrial Land Cover Types*

The Study Area contains four terrestrial land cover types, developed/landscaped, non-native annual grassland, California bay forest, and purple needlegrass grassland. Of the four terrestrial land cover types, only purple needlegrass grassland, a native grassland vegetation community, is considered a terrestrial

ESHA. The Proposed Project has been intentionally designed to avoid direct impacts to all ESHAs, including terrestrial and aquatic resources, and purple needlegrass grassland will be avoided by the maximum 50 foot terrestrial ESHA buffer. Therefore, no impacts to terrestrial ESHA are anticipated, and no avoidance and minimization measures are recommended.

### *6.1.2 Aquatic Resources*

The Study Area contains five sensitive aquatic resources including perennial stream, ephemeral ditch, riparian arroyo willow thicket, Corps seasonal wetland (three parameter), and CCC seasonal wetland (one parameter); all but ephemeral ditch are considered aquatic ESHAs. The perennial stream and associated riparian arroyo willow thicket also qualify as an SCA, and Corps seasonal wetlands qualify as WCA per the Marin Countywide Plan. The applicable setback from the perennial stream and associated riparian vegetation is 50 feet from the edge of the riparian vegetation, equaling the reduced ESHA buffer. The appropriate setback applicable to Corps seasonal wetlands is 100 feet or as deemed appropriate by a qualified biologist to avoid impacts and protect the wetland. Analysis provided below describes how a reduced ESHA buffer of 50 feet from aquatic ESHAs will sufficiently protect stream, riparian, and wetlands within the Study Area. Therefore, the reduced 50-foot buffer is deemed appropriate as the WCA buffer.

The Project has been designed to avoid direct impacts to aquatic ESHAs, and to avoid impacts within ESHA buffers to the maximum extent feasible. However, due to the previously developed nature of the Project Area, which includes existing non-conforming structures and uses within minimum ESHA buffers, work can not be avoided within the minimum ESHA buffers. Work on existing non-conforming structures includes upgrades to the building envelope and compliance with Wildland Urban Interface (WUI) codes.

Areas where the Project Area overlap aquatic ESHA boundaries are shown on Figure 4. The perennial stream, Lagunitas Creek, is located far from the Project Area on the eastern and southern border of the Study Area, and perennial stream will be avoided by much greater than the maximum aquatic ESHA buffer. All seasonal wetlands, including Corps, and CCC seasonal wetlands will be avoided by at least the minimum 50-foot aquatic ESHA buffer. The only areas where work will occur within minimum aquatic ESHA buffers include within the riparian ESHA buffer. The work which will occur within the minimum riparian and ephemeral ditch buffers is expected to create a net environmental improvement over existing conditions, by reducing impervious surfaces, and installation of new stormwater treatment facilities, elimination of on-site invasive species (e.g. *Eucalyptus* spp.), and increasing native vegetation cover. Work within ESHA buffers include the following categories:

- Work to remove existing hardscape (e.g. tennis court) to pervious soil, grading and new native vegetation, creating a water quality improvement by reducing impervious surface runoff, and increasing native vegetation cover compared to existing conditions.
- Work to replace existing hardscape (e.g. parking lot) with stormwater basins creating a water quality improvement compared to existing conditions.
- Work to repair existing hardscape (e.g. parking lot).
- Renovation of Building 206, and 100C, removal of concrete pad for landscaping, and new gravel around perimeter of building for fire safety, creating a water quality improvement by reducing impervious surface runoff.
- Removal of non-native trees (classified as 'major vegetation' removal).

Within the wetland buffers, a minor additional 23 square feet of paving is proposed, while 4,849 square feet of stormwater management features are proposed, which are anticipated to improve water quality within the surrounding ESHA areas. Within the coastal stream riparian buffer, a large area of 8,823 square feet of existing paving will be removed, and 1,707 square feet of stormwater management features are proposed, which are anticipated to improve water quality within the surrounding ESHA areas. Tables 1 and 2, below provide square footage estimates for the amount of lot coverage removed, converted, and new lot coverage proposed within the wetland ESHA buffer, and coastal stream riparian buffer areas, respectively.

Table 1. Lot Coverage Estimates within Minimum 50' Wetland ESHA Buffer

| Type | Area (square feet) | | | | |
|---|---|---|---|---|---|
| | Existing to Remain | Removed | Proposed | New Total | Change |
| Building | 1,863 | 0 | 0 | 1,863 | 0 |
| Paving | 1,280 | 0 | 23 | 1,303 | 23 |
| Total Lot Coverage | 3,143 | 0 | 23 | 3,166 | 23 |
| Stormwater Management | 0 | 0 | 4,849 | 4,849 | 4,849 |

Table 2. Lot Coverage Estimates within Minimum 50' Coastal Stream and Riparian ESHA Buffer

| Type | Area (square feet) | | | | |
|---|---|---|---|---|---|
| | Existing to Remain | Removed | Proposed | New Total | Change |
| Building | 1,866 | 0 | 0 | 1,866 | 0 |
| Paving | 5,343 | 8,823 | 0 | 5,343 | -8,823 |
| Total Lot Coverage | 7,209 | 8,823 | 0 | 7,209 | -8,823 |
| Stormwater Management | 0 | 0 | 1,707 | 1,707 | 1,707 |

Per the LCP guidelines, aquatic ESHAs may be adjusted according to Measures C-BIO-19, "Wetland Buffer Adjustments and Exceptions", and C-BIO-25, "Stream Buffer Adjustments and Exceptions".

A buffer adjustment to less than 100 feet may be considered only if it conforms with zoning and:

a. It is proposed on a legal lot of record located entirely within the buffer; or
b. It is demonstrated that permitted development cannot be feasibly accommodated entirely outside the required buffer; or
c. It is demonstrated that the permitted development outside the buffer would have greater impact on the wetland and the continuance of its habitat than development within the buffer; or
d. The wetland was constructed out of dry land for the treatment, conveyance or storage of water, its construction was authorized by a coastal permit (or pre-dated coastal permit requirements), it has no habitat value, and it does not affect natural wetlands.

Per the aforementioned guidelines, due to the previously developed nature of the site, with existing non-conforming uses and/or structures within ESHA buffers, project activities within ESHA buffers are unavoidable. However, the Project will avoid direct impacts to any ESHA itself, and within ESHA buffers, Project work will result in a net environmental benefit by reducing impervious hardscape, improving water quality, and increasing native vegetation.

In addition, a reduced aquatic ESHA buffer shall require measures that create a net environmental improvement over existing conditions. Appropriate measures may include but are not limited to:

a. Retrofitting existing improvements or implementing new measures to reduce the rate or volume of stormwater run-off and improve the quality of stormwater run-off (e.g., use of permeable "hardscape" materials and landscape or site features designed to capture, absorb and filter stormwater; etc.);
b. Elimination of on-site invasive species;
c. Increasing native vegetation cover ( e.g., expand continuous vegetation cover, reduce turf areas, provide native groundcover, shrubs and trees; etc.);
d. Reduction in water consumption for irrigation (e.g., use of drought-tolerant landscaping or high efficiency irrigation systems, etc.); and
e. Other measures that reduce overall similar site-related environmental impacts.

Projects that propose construction with a buffer of less than 100 feet from an aquatic ESHA must provide information that indicates a lesser buffer distance will not have a significant adverse impact on the habitat, and incorporate appropriate measures a through e described above. Table 3 below describes how each of the recommended appropriate measures to reduce aquatic ESHA buffers are met.

Table 3. Aquatic ESHA Reduced Buffer Zone Justification

| Measures Considered to Reduce Aquatic ESHA Buffer Areas | |
|---|---|
| Zoning Code | Assessment |
| *a. Retrofitting existing improvements or implementing new* | As described above, the project improvements within the minimum ESHA buffers are expected to provide a net |

| | |
|---|---|
| *measures to reduce the rate or volume of stormwater run-off and improve the quality of stormwater run-off (e.g., use of permeable "hardscape" materials and landscape or site features designed to capture, absorb and filter stormwater; etc.);* | environmental benefit, by reducing impervious hardscape, and improving water quality. Based on the estimated lot coverage totals provided in the above tables, 8,800 square feet of paving within aquatic ESHA buffers will be removed, and a total of 6,556 square feet of stormwater management features are proposed. The net decrease in paved lot coverage, and increase in stormwater management features represents a net environmental improvement over existing conditions with regards to water quality. |
| *b. Elimination of on-site invasive species;* | The Project will remove 36 mature trees, all of which are non-native ornamental species, and none of which are on the Marin County Local Coastal Program-Implementation Plan (LCP-IP) list of Heritage or Protected Trees. Trees that will be removed are predominantly eucalyptus, dead trees, and other non-native trees. Ten (10) of the aforementioned non-native eucalyptus trees to be removed, and one Leyland cypress (*Cupressus x leylandii*) to be removed are located within aquatic ESHA buffers. Removal of these non-native, and in the case of blue gum eucalyptus, invasive trees within the ESHA buffer will provide an environmental benefit. |
| *c. Increasing native vegetation cover (e.g., expand continuous vegetation cover, reduce turf areas, provide native groundcover, shrubs and trees; etc.);* | Landscape Plans provided by Bay Tree Design (2022), provide for a significant increase in native vegetation cover including approximately 8,999 square feet of irrigated wildflower and grass seed mix, native erosion control mix, and ground cover comprising all California native species within the minimum 50-foot Coastal Stream and Riparian ESHA buffer an. An additional approximately 2,224 square feet of irrigated wildflower and grass seed mix will be utilized in the minimum 50-foot wetland ESHA buffer.<br><br>Part of the aforementioned vegetation cover will replace areas of hardscape including: removing the existing tennis court and regrading in this area to make the landforms appear more natural; removing the concrete drive behind Building 100C and replacing that with native erosion control; removing the playground in the ESHA and relocating it to another area of the site outside of the ESHA zones. |

| | |
|---|---|
| | The current playground includes - concrete curbs, mulch, stairs, retaining walls, play structures and benches. This is all proposed to be replaced with planting. The project will also remove a concrete pad near building 206 to replace with planting. |
| *d. Reduction in water consumption for irrigation (e.g., use of drought-tolerant landscaping or high efficiency irrigation systems, etc.); and* | Per Bay Tree Design (Lisa Howard, pers. comm.) the site plans require tertiary waste water treatment, where all plants are watered daily in order to consume the dispersed water, therefore, water clean water irrigation and reduction was not determined to be a concern. |
| *e. Other measures that reduce overall similar site-related environmental impacts.* | Additional measures will be employed to reduce overall site related impacts, including the use of erosion control measures and other BMPs and through supervision of construction activities by a biological monitor during initial ground disturbance work within minimum ESHA buffers. To minimize potential increased human activity in the riparian corridor of Lagunitas Creek, signage shall be installed along the edge of the riparian arroyo willow thicket that identifies the riparian habitat as an ESHA and reads "Environmentally Sensitive Habitat: Do Not Enter". |

To avoid and minimize potential impacts to ESHAs, grading should occur during the dry season (defined in the Marin County Municipal Code as April 16 through October 14) and should be suspended during unseasonable rainfalls of greater than one-half inch over a 24-hour period. If rainfall is in the forecast, standard erosion control measures (e.g., straw waddles, bales, silt fencing) should be deployed on the development's edge paralleling downslope ESHAs. Construction personnel should be informed of the location of the site's sensitive resources with high-visibility flagging or staking prior to construction, supervision of construction activities by a biological monitor during initial ground disturbance work within reduced ESHA buffers is recommended. No materials or equipment shall be lain down in or near the aquatic resources, and spill prevention materials shall be deployed for all construction equipment. "Environmentally Sensitive Habitat do not enter" along the riparian corridor of the Lagunitas Creek.

Based on the information provided above in Table 1, and the Project proposed BMPs which include erosion control measures in areas of vegetation removal and soil disturbance, and supervision of construction activities by a biological monitor during initial ground disturbance work within reduced ESHA buffers, the Project is not likely to significantly impact terrestrial or aquatic ESHAs, compared to existing conditions.

## 6.2 Special-status Species

### *6.2.1 Special-status Plants*

Based upon a review of the resource databases listed in Section 4.0, 112 special-status plant species have been documented in the vicinity of the Study Area. Twenty-five of these plants have the potential to occur in the Study Area; however only one of these plants, congested-headed hayfield tarplant is considered to have potential to occur in the Project Area.

Focused surveys for special-status plants determined to have a potential to occur in the Study Area were conducted on January 20, April 9, and June 4, 2021, and no special-status plants were identified in the Study Area or Project Area. The surveys correspond to the period sufficient to observe and identify those special-status plants determined to have the potential to occur. Therefore, special-status plants are considered absent from the Study Area and Project Area. Descriptions of special-status plant species initially assessed to have potential to occur in the Study Area are provided in Appendix C.

### *6.2.2 Special-status Wildlife*

The Study Area has the potential to support 15 special-status wildlife species, as well as non-status birds protected under the MBTA and CFGC. The following measures are recommended to avoid or otherwise minimize potential impacts to these species; refinement of these measures may be warranted dependent on specifics of the proposed project.

*Listed Species*

California red-legged frog. Any injury or mortality to CRLFs, including eggs and larvae (if such are present) would constitute "take" under the ESA and also presumably be considered a significant impact under CEQA. The Project Area is largely restricted to already-developed or otherwise disturbed areas, and avoids all aquatic features within the Study Area including the ephemeral ditch (potential non-breeding aquatic habitat for CRLF). As such, the potential for take of CRLF is limited to incidental harm of individuals that may be present within the Study Area, e.g., during dispersal or movement periods. Avoidance and minimization measures would depend on final project specifics; typical measures for this species in the present circumstances include:

- Limiting initial ground disturbance to the dry season, approximately April 16 through October 14, and potentially precluding work (dependent on site conditions) during or immediately following rain events (0.25 inch of rain falling within a 24-hour period);
- Installing an exclusion fence around project activity areas (e.g., building sites, laydown areas);
- A biological sensitivity training for construction staff, including the potential presence of CRLF, identification of the species under field conditions, legal status of the species and the ramifications for take, and the need to stop-work if CRLF is observed in or around the project activity areas;
- And, potentially, the presence of a biological monitor (with stop-work authority) during initial ground-disturbing activities to avoid take.

If there is reasonable concern that these measures will not preclude the potential for take of CRLF during project implementation, consultation with the USFWS may be required.

Listed salmonids, California freshwater shrimp: Steelhead, coho salmon, and California freshwater shrimp all are all considered present in Lagunitas Creek. The Project Area entirely avoids the creek (including perennial to intermittent side channels/features) and directly adjacent riparian woodland/vegetation, effectively precluding any potential for direct impacts or harm to these species. Additional BMPs described above will avoid ground disturbance and reduce/eliminate potential sediment inputs. Note however that the ESA includes protections to habitat elements of listed species, and as such incidental impacts to the waters of the stream (e.g., sediment releases during construction) could constitute ESA violations. If this avoidance of such impacts is somehow not feasible, consultation with NMFS/USFWS and CDFW would presumably be required.

*Other species*

Bat species: Two special-status bats have the potential to occur within the Study Area (pallid bat, Townsend's big-eared bat), including roosting within buildings. Building demolition during the bat maternity season (generally, April through August) could impact bat breeding and potentially result in the take of bats. To avoid impacts to special-status bats, a bat habitat assessment and survey effort (the latter if needed) should be performed by a qualified biologist prior to building demolition to determine if bats are present in the buildings. If no suitable roosting habitat for bats is found, then no further study is warranted. If special-status bat species or bat maternity roosts are detected, then demolition of occupied buildings should be avoided until the end of the maternity roosting season. If this avoidance is not feasible, appropriate species- and roost-specific mitigation measures should be developed in consultation with CDFW. Depending on specifics (bat species, roost size, and others), removal of an occupied bat roost may also warrant additional review under CEQA.

American badger: Remnant badger burrows were observed within the Study Area's open grassland, outside of the Project Area. Although all such burrows appeared degraded or otherwise unoccupied, badgers have some potential to be present within the Study Area in the future. Prior to ground-breaking activities, a qualified biologist should review the Study Area to determine if new badger burrows have been constructed and/or older (remnant) burrows appear to be re-occupied. If such burrows are present, the biologist will determine if young are present in the burrows, and if so, ground-breaking activities will only be allowed within 150 feet until young have are independent (spring through summer). The Project Area is largely restricted to already-developed or otherwise disturbed areas, and therefore is not anticipated to result in any potentially significant impacts to local badger habitat.

Western pond turtle and Tomales roach: While both of these species have the potential to be present within Lagunitas Creek, western pond turtle is unlikely to occur in the Project Area, and Tomales roach is entirely aquatic with no potential for occurrence there. As such, no impacts to these species are anticipated as a result of project implementation and no associated measures are warranted.

Monarch butterfly: Although monarch winter roosting is not known from the Study Area or its immediate vicinity, mature eucalyptus trees with some favorable characteristics for roosting are present within the Study Area, and proposed for removal. As such, WRA recommends that a survey effort for roosting monarchs within the Study Area be performed; this effort should occur during the focal portion of the winter roosting period in November or December when the likelihood of roosting is highest. If a communal winter roost is identified during the assessment/survey, CDFW should be consulted regarding measures to avoid or otherwise minimize impacts to the roost.

All bird species (including non-special-status): In addition to the two special-status bird species discussed above (white-tailed kite, yellow warbler), non-status bird species with baseline protections under the MBTA and CFGC may use vegetation within the Study Area for nesting. WRA recommends that tree/vegetation removal and initial ground disturbance occur from August 16 to January 31, outside of the general bird nesting season. If tree/vegetation removal during this time is not feasible, a pre-construction nesting bird survey should be performed by a qualified biologist no more than 14 days prior to the initiation of tree removal or ground disturbance is recommended. The survey should cover the Project Area (including tree removal areas) and surrounding areas within 500 feet. If active bird nests are found during the survey, an appropriate no-disturbance buffer should be established by the qualified biologist. Once it is determined that the young have fledged (left the nest) or the nest otherwise becomes inactive (e.g., due to predation), the buffer may be lifted and work may be initiated within the buffer.

### *6.2.3 Wildlife Movement*

As stated in Section 5.2.3, the Study Area is not within a mapped wildlife corridor. At a local level, Lagunitas Creek and associated riparian woodland provide noteworthy corridor functions, but these land covers will be avoided by the proposed project. The Project Area is largely restricted to already-developed or otherwise disturbed areas, and project implementation is not anticipated to result in any potentially significant impacts to wildlife movement. As such, no measures related to wildlife movement are warranted.

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Appendix A

Figures

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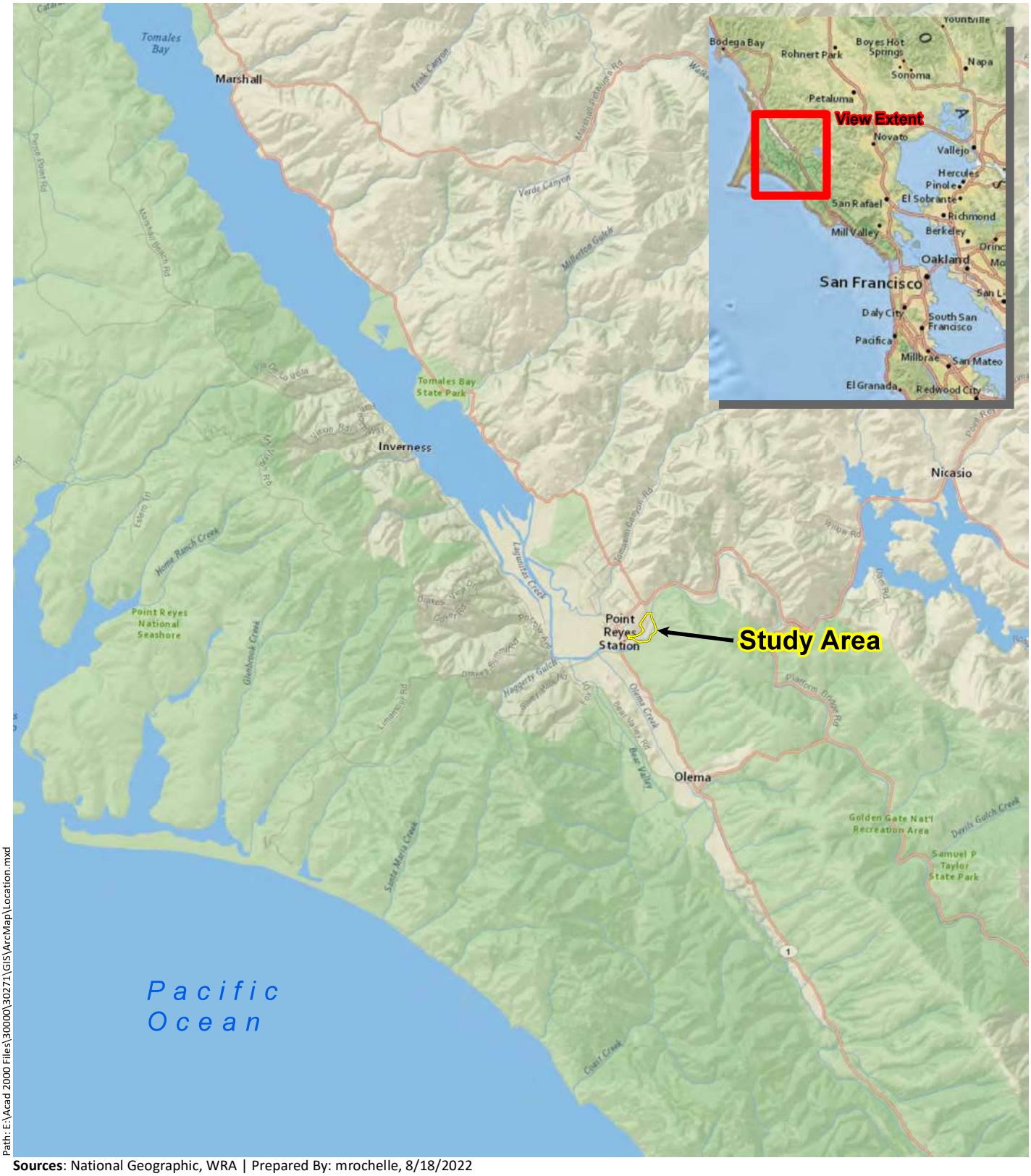


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**Sources**: National Geographic, WRA | Prepared By: mrochelle, 8/18/2022

# Figure 1. Study Area Regional Location Map

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

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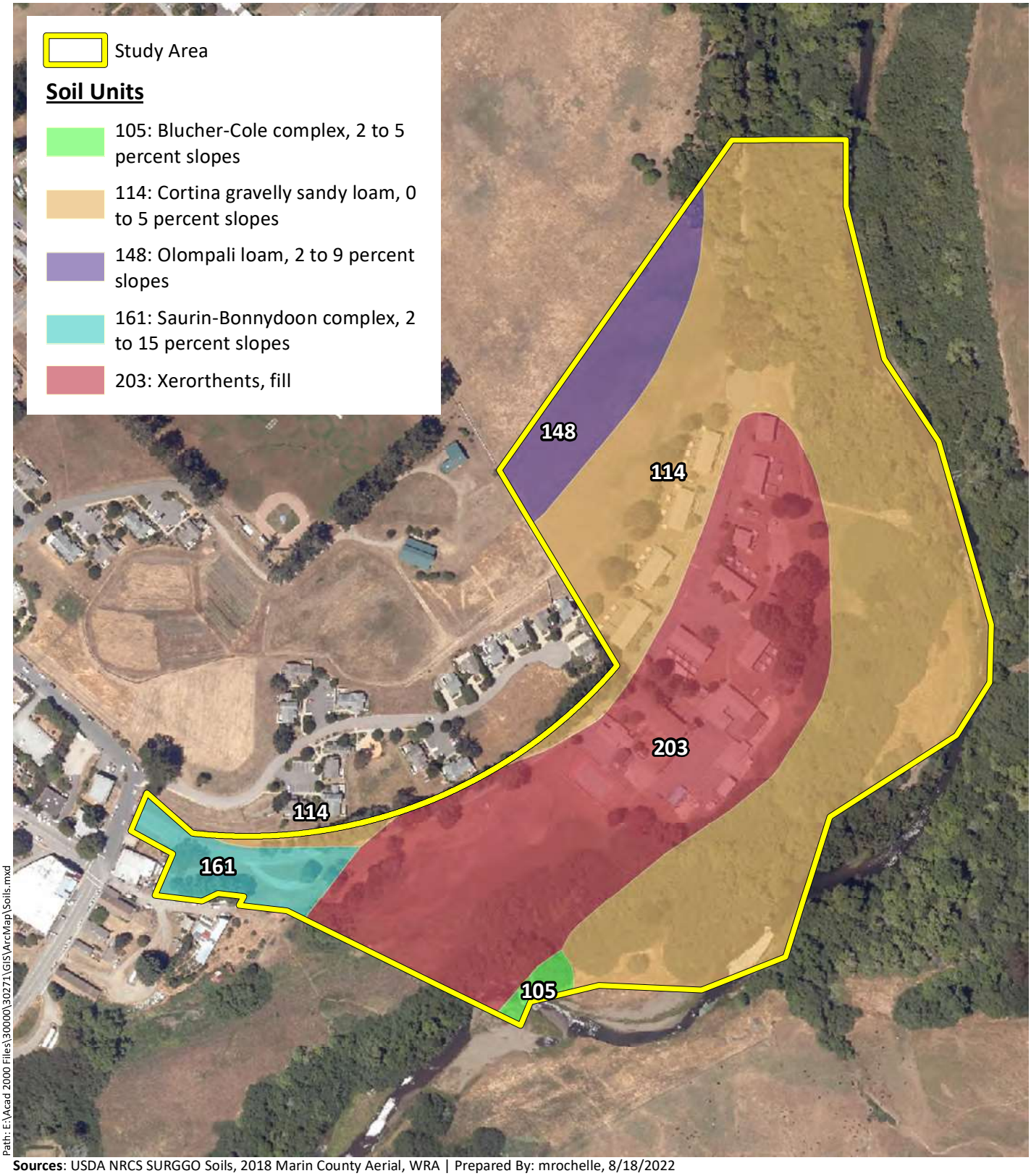


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**Sources**: USDA NRCS SURGGO Soils, 2018 Marin County Aerial, WRA | Prepared By: mrochelle, 8/18/2022

# Figure 2. Soils Map

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

0 250 500 Feet

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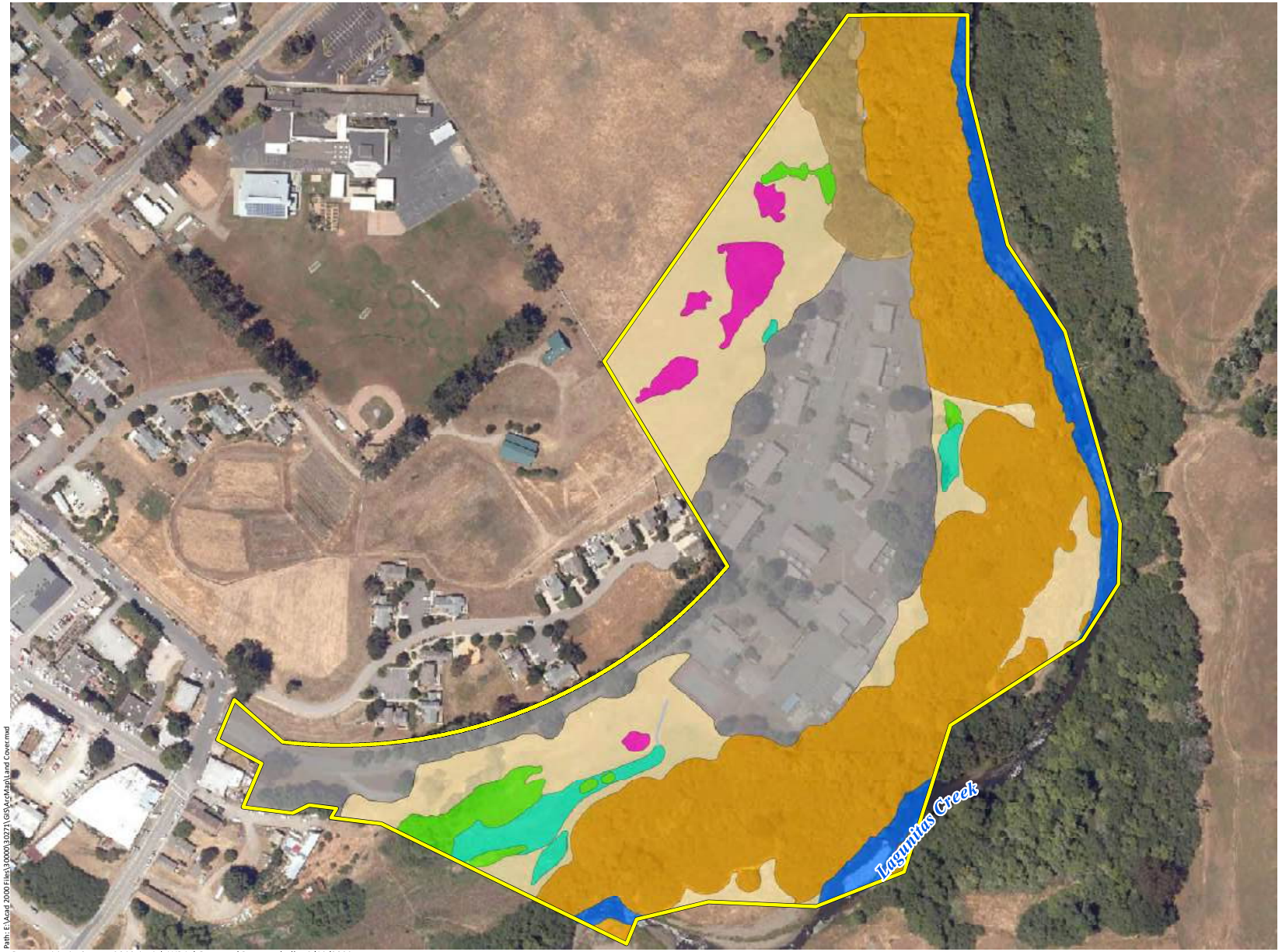



## Figure 3.
## Land Cover Types

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

Study Area - 33.59

**Sensitive Land Cover**

- CCC Seasonal Wetland - 0.67 ac.
- Corps Seasonal Wetland - 0.69 ac.
- Ephemeral Ditch - 0.01 ac.
- Perennial Stream - 1.61 ac.
- Purple Needlegrass Grassland - 0.61 ac.
- Arroyo Willow Thicket - 11.44 ac.

**Non-Sensitive Land Cover**

- California Bay Forest - 1.13 ac.
- Developed/Landscaped - 9.66 ac.
- Non-Native Annual Grassland - 7.77 ac.

N

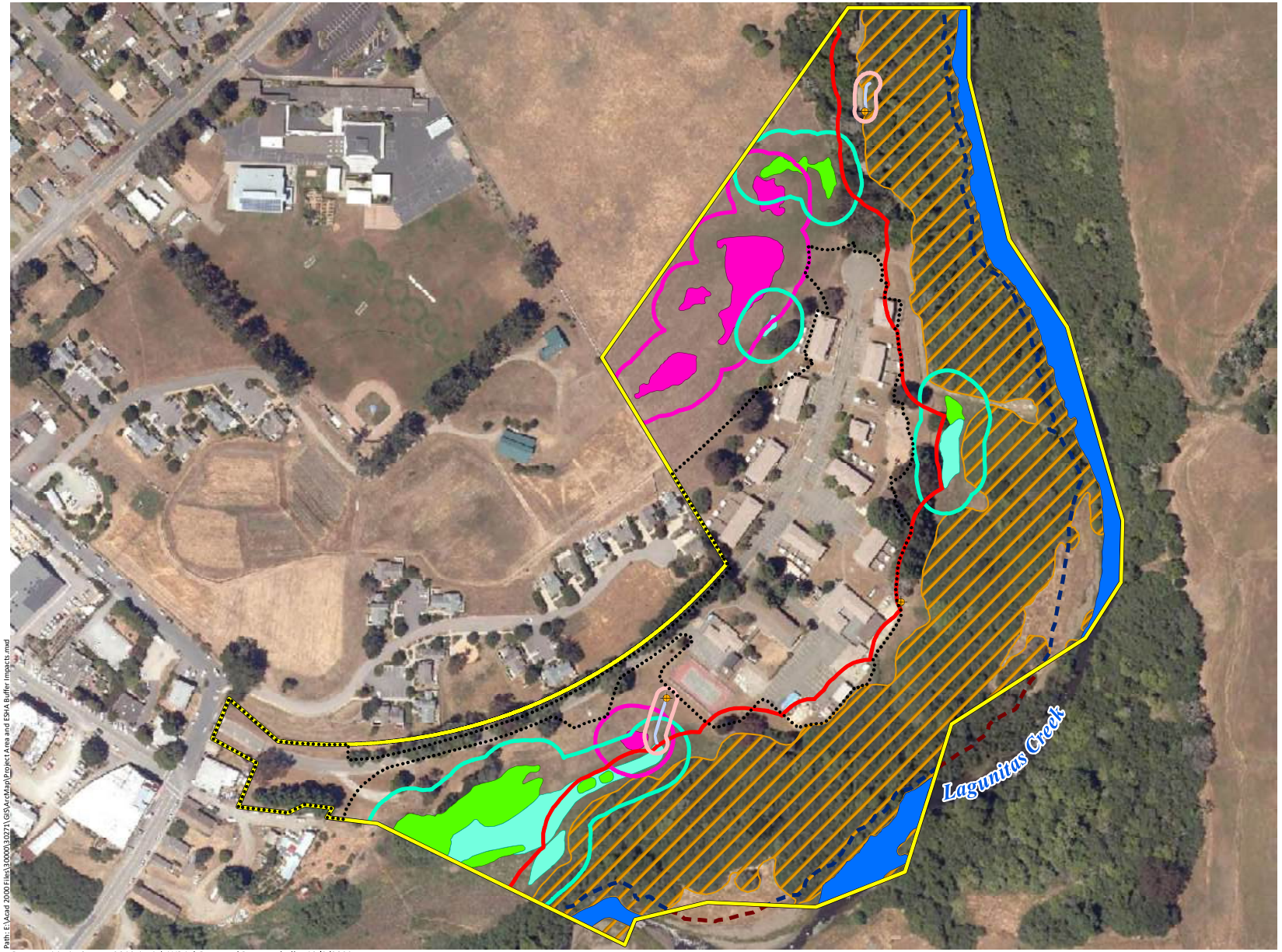
0 200 400

Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: E:\Acad 2000 Files\30000\30271\GIS\ArcMap\Land Cover.mxd

**Sources**: Marin County 2018 Aerial, WRA | Prepared By: mrochelle, 8/18/2022




# Figure 4.
# Project Area and ESHA Buffer Impacts

Point Reyes Station U.S. Coast Guard
Housing Site Redevelopment
Marin County, California

Study Area - 33.59 ac.

Project Area - 8.15 ac.

Culverts

**Non-Environmentally Sensitive Habitat Area, Aquatic**

Ephemeral Ditch - 0.01 ac.

**Environmentally Sensitive Habitat Area, Aquatic**

**Non-Wetland Waters:**

Perennial Stream - OHWM - 1.61 ac.

Perennial Stream - TOB - 3.05 ac.

**Wetlands:**

CCC Seasonal Wetland - 0.67 ac.

Corps Seasonal Wetland - 0.69 ac.

Off-Site Top of Bank

**Riparian:**

Riparian Woodland - 11.27 ac.

**Environmentally Sensitive Habitat Area, Terrestrial**

Purple Nedlegrass Grassland - 0.61 ac.

**Setbacks**

20' Ephemeral Stream Buffer

Reduced Coastal Stream and Riparian ESHA Buffer (50')

Wetland ESHA Buffer (50')

Maximum Terrestrial ESHA Buffer (50')

N

0 200 400

Feet

wra
ENVIRONMENTAL CONSULTANTS

Path: E:\Acad 2000 Files\130000\30271\GIS\ArcMap\Project Area and ESHA Buffer Impacts.mxd

**Sources**: Marin County 2018 Aerial, WRA | Prepared By: mrochelle, 12/8/2022

# Appendix B

## Species Observed in the Study Area

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Appendix B – Plant and wildlife species observed in Study Area, January 20, April 9, and June 4, 2021.

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| **Plants** | | | | | | |
| *Acacia decurrens* | Green wattle | non-native | tree | - | - | - |
| *Acacia melanoxylon* | Blackwood acacia | non-native (invasive) | tree | - | Limited | - |
| *Acer macrophyllum* | Bigleaf maple | native | tree | - | - | FAC |
| *Acer negundo* | Boxelder | native | tree | - | - | FACW |
| *Aesculus californica* | Buckeye | native | tree | - | - | - |
| *Agrostis stolonifera* | Redtop | non-native (invasive) | perennial grass | - | Limited | FACW |
| *Aira caryophyllea* | Silvery hairgrass | non-native (invasive) | annual grass | - | - | FACU |
| *Alnus rubra* | Red alder | native | tree, shrub | - | - | FACW |
| *Anthemis cotula* | Dog fennel | non-native (invasive) | annual herb | - | - | FACU |
| *Artemisia douglasiana* | California mugwort | native | perennial herb | - | - | FAC |
| *Athyrium filix-femina* var. *cyclosorum* | Western lady fern | native | fern | - | - | FAC |
| *Baccharis pilularis* ssp. *consanguinea* | Coyote brush | native | shrub | - | - | - |
| *Bellis perennis* | English lawn daisy | non-native (invasive) | perennial herb | - | - | - |
| *Briza minor* | Little rattlesnake grass | non-native | annual grass | - | - | FAC |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Bromus catharticus* | Rescue grass | non-native | annual, perennial grass | - | - | - |
| *Bromus diandrus* | Ripgut brome | non-native (invasive) | annual grass | - | Moderate | - |
| *Calocedrus decurrens* | Incense cedar | native | tree | - | - | - |
| *Carduus pycnocephalus* ssp. *pycnocephalus* | Italian thistle | non-native | annual herb | - | - | - |
| *Carex densa* | Sedge | native | perennial grasslike herb | - | - | OBL |
| *Cichorium intybus* | Chicory | non-native | perennial herb | - | - | FACU |
| *Cirsium vulgare* | Bullthistle | non-native (invasive) | perennial herb | - | Moderate | FACU |
| *Claytonia perfoliata* | Miner's lettuce | native | annual herb | - | - | FAC |
| *Conium maculatum* | Poison hemlock | non-native (invasive) | perennial herb | - | Moderate | FACW |
| *Convolvulus arvensis* | Field bindweed | non-native (invasive) | perennial herb, vine | - | - | - |
| *Cortaderia jubata* | Andean pampas grass | non-native (invasive) | perennial grass | - | High | FACU |
| *Cynodon dactylon* | Bermuda grass | non-native (invasive) | perennial grass | - | Moderate | FACU |
| *Cynosurus echinatus* | Dogtail grass | non-native (invasive) | annual grass | - | Moderate | - |
| *Cyperus eragrostis* | Tall cyperus | native | perennial grasslike herb | - | - | FACW |
| *Danthonia californica* | California oatgrass | native | perennial grass | - | - | FAC |
| *Datura stramonium* | Jimson weed | non-native | annual herb | - | - | - |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Dittrichia graveolens* | Stinkwort | non-native (invasive) | annual herb | - | Moderate | - |
| *Elymus glaucus* | Blue wildrye | native | perennial grass | - | - | FACU |
| *Elymus triticoides* | Beardless wild rye | native | perennial grass | - | - | FAC |
| *Equisetum hyemale* ssp. *affine* | Giant scouring rush | native | fern | - | - | FACW |
| *Erigeron canadensis* | Canada horseweed | native | annual herb | - | - | FACU |
| *Erodium botrys* | Big heron bill | non-native (invasive) | annual herb | - | - | FACU |
| *Erodium cicutarium* | Coastal heron's bill | non-native (invasive) | annual herb | - | Limited | - |
| *Eschscholzia californica* | California poppy | native | annual, perennial herb | - | - | - |
| *Eucalyptus globulus* | Blue gum | non-native (invasive) | tree | - | Limited | - |
| *Eucalyptus polyanthemos* | Silver dollar gum | non-native | tree | - | - | - |
| *Eucalyptus* spp. | Eucalyptus | non-native | Tree | - | - | - |
| *Eucalyptus viminalis* | Manna gum | non-native | tree | - | - | - |
| *Festuca arundinacea* | Reed fescue | non-native (invasive) | perennial grass | - | Moderate | FACU |
| *Festuca bromoides* | Brome fescue | non-native | annual grass | - | - | FACU |
| *Festuca myuros* | Rattail sixweeks grass | non-native (invasive) | annual grass | - | - | FACU |
| *Festuca perennis* | Italian rye grass | non-native | annual, perennial grass | - | - | FAC |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Foeniculum vulgare* | Fennel | non-native (invasive) | perennial herb | - | High | - |
| *Fraxinus latifolia* | Oregon ash | native | tree | - | - | FACW |
| *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 (invasive) | annual, perennial herb | - | - | - |
| *Glyceria declinata* | Waxy mannagrass | non-native (invasive) | perennial grass | - | Moderate | FACW |
| *Hedera helix* | English ivy | non-native (invasive) | vine, shrub | - | - | FACU |
| *Helenium puberulum* | Sneezeweed | native | perennial herb | - | - | FACW |
| *Helminthotheca echioides* | Bristly ox-tongue | non-native (invasive) | annual, perennial herb | - | - | FAC |
| *Hesperocyparis macrocarpa* | Monterey cypress | native | tree | Rank 1B.2* | - | - |
| *Heteromeles arbutifolia* | Toyon | native | shrub | - | - | - |
| *Hirschfeldia incana* | Mustard | non-native (invasive) | perennial herb | - | Moderate | - |
| *Holcus lanatus* | Common velvetgrass | non-native (invasive) | perennial grass | - | Moderate | FAC |
| *Hordeum marinum* ssp. *gussoneanum* | Barley | non-native | annual grass | - | - | FAC |
| *Hypochaeris radicata* | Hairy cats ear | non-native (invasive) | perennial herb | - | Moderate | FACU |
| *Ilex aquifolium* | Holly | non-native (invasive) | tree, shrub | - | Moderate | FACU |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Iris douglasiana* | Douglas iris | native | perennial herb | - | - | - |
| *Juncus effusus* | Common bog rush | native | perennial grasslike herb | - | - | FACW |
| *Juncus mexicanus* | Mexican rush | native | perennial grasslike herb | - | - | FACW |
| *Juncus occidentalis* | Slender juncus | native | perennial grasslike herb | - | - | FACW |
| *Juncus patens* | Rush | native | perennial grasslike herb | - | - | FACW |
| *Juncus phaeocephalus* | Brown headed rush | native | perennial grasslike herb | - | - | FACW |
| *Lathyrus vestitus* | Common pacific pea | native | perennial herb | - | - | - |
| *Lepidium nitidum* | Shining pepper grass | native | annual herb | - | - | FAC |
| *Limnanthes douglasii* | Common meadow foam | native | annual herb | - | - | OBL |
| *Linum bienne* | Flax | non-native | annual herb | - | - | - |
| *Lonicera hispidula* | Pink honeysuckle | native | vine, shrub | - | - | FACU |
| *Ludwigia* sp. | - | - | - | - | - | - |
| *Lysimachia arvensis* | Scarlet pimpernel | non-native | annual herb | - | - | FAC |
| *Matricaria discoidea* | Pineapple weed | native | annual herb | - | - | FACU |
| *Maytenus boaria* | Mayten | non-native (invasive) | tree, shrub | - | - | - |
| *Medicago polymorpha* | California burclover | non-native (invasive) | annual herb | - | Limited | FACU |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Mentha pulegium* | Pennyroyal | non-native (invasive) | perennial herb | - | Moderate | OBL |
| *Myosotis latifolia* | Wide leaved forget me not | non-native (invasive) | perennial herb | - | Limited | - |
| *Nasturtium officinale* | Watercress | native | perennial herb (aquatic) | - | - | OBL |
| *Oenanthe sarmentosa* | Water parsley | native | perennial herb | - | - | OBL |
| *Phyla nodiflora* | Common lippia | native | perennial herb | - | - | FACW |
| *Pinus radiata* | Monterey pine | native | tree | Rank 1B.1* | - | - |
| *Pittosporum undulatum* | Victorian box | non-native (invasive) | tree, shrub | - | - | - |
| *Plantago lanceolata* | Ribwort | non-native (invasive) | perennial herb | - | Limited | FAC |
| *Poa annua* | Annual blue grass | non-native | annual grass | - | - | FAC |
| *Polygonum aviculare* | Prostrate knotweed | non-native | annual, perennial herb | - | - | FAC |
| *Polypodium* sp. | - | - | - | - | - | - |
| *Polystichum munitum* | Western sword fern | native | fern | - | - | FACU |
| *Pseudognaphalium luteoalbum* | Jersey cudweed | non-native | annual herb | - | - | FAC |
| *Pteridium aquilinum* var. *pubescens* | Western bracken fern | native | fern | - | - | FACU |
| *Quercus agrifolia* | Coast live oak | native | tree | - | - | - |
| *Ranunculus californicus* | Common buttercup | native | perennial herb | - | - | FACU |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Ranunculus muricatus* | Buttercup | non-native | annual, perennial herb | - | - | FACW |
| *Raphanus sativus* | Jointed charlock | non-native (invasive) | annual, biennial herb | - | Limited | - |
| *Rubus armeniacus* | Himalayan blackberry | non-native (invasive) | shrub | - | High | FAC |
| *Rubus ursinus* | California blackberry | native | vine, shrub | - | - | FAC |
| *Rumex acetosella* | Sheep sorrel | non-native (invasive) | perennial herb | - | Moderate | FACU |
| *Rumex crispus* | Curly dock | non-native (invasive) | perennial herb | - | Limited | FAC |
| *Rumex pulcher* | Fiddleleaf dock | non-native | perennial herb | - | - | FAC |
| *Salix laevigata* | Polished willow | native | tree | - | - | FACW |
| *Salix lasiolepis* | Arroyo willow | native | tree, shrub | - | - | FACW |
| *Sanicula bipinnatifida* | Purple sanicle | native | perennial herb | - | - | - |
| *Sanicula crassicaulis* | Pacific sanicle | native | perennial herb | - | - | - |
| *Senecio vulgaris* | Common groundsel | non-native | annual herb | - | - | FACU |
| *Sequoia sempervirens* | Coast redwood | native | tree | - | - | - |
| *Silybum marianum* | Milk thistle | non-native (invasive) | annual, perennial herb | - | Limited | - |
| *Sisyrinchium bellum* | Blue eyed grass | native | perennial herb | - | - | FACW |
| *Sonchus oleraceus* | Sow thistle | non-native | annual herb | - | - | UPL |

| Scientific Name | Common Name | Origin | Form | Rarity Status[1] | CAL-IPC Status[2] | Wetland Status[3] (AW 2016) |
|---|---|---|---|---|---|---|
| *Stipa pulchra* | Purple needle grass | native | perennial grass | - | - | - |
| *Taraxia ovata* | Sun cup | native | perennial herb | - | - | - |
| *Toxicodendron diversilobum* | Poison oak | native | vine, shrub | - | - | FACU |
| *Trifolium dubium* | Shamrock | non-native | annual herb | - | - | UPL |
| *Trifolium hirtum* | Rose clover | non-native (invasive) | annual herb | - | Limited | - |
| *Trifolium subterraneum* | Subterranean clover | non-native | annual herb | - | - | - |
| *Umbellularia californica* | California bay | native | tree | - | - | FAC |
| *Veronica anagallis-aquatica* | Water speedwell | non-native | perennial herb | - | - | OBL |
| *Vicia* sp. | Vetch | non-native | annual herb | - | - | - |
| *Washingtonia robusta* | Washington fan palm | non-native (invasive) | tree | - | Moderate | FACW |
| *Xanthium strumarium* | Cocklebur | native | annual herb | - | - | FAC |

All species identified using the *Jepson Manual, 2nd Edition* (Baldwin et al. 2012) and *A Flora of Sonoma County* (Best et al. 1996); nomenclature follows *The Jepson Flora Project* (eFlora 2020) unless otherwise noted. Sp.: "species", intended to indicate that the observer was confident in the identity of the genus but uncertain which species
Cf.: 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 2020)

| | |
|---|---|
| FE: | Federal Endangered |
| FT: | Federal Threatened |
| SE: | State Endangered |
| ST: | State Threatened |
| SR: | State Rare |

Rank 1A: Plants presumed extirpated in California and either rare or extinct elsewhere
Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
Rank 2A: Plants presumed extirpated in California, but more common elsewhere
Rank 2B: Plants rare, threatened, or endangered in California, but more common elsewhere
Rank 3: Plants about which we need more information – a review list
Rank 4: Plants of limited distribution – a watch list

[2]Invasive Status: California Invasive Plant Inventory (Cal-IPC 2020)
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 (Lichvar et al. 2016)
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

*Rarity status only applies to native stands not present in the Study Area. Monterey pine and Monterey cypress within the Study Area are planted ornamentals outside of their native range.

Appendix B cont. Wildlife species observed in the Study Area on June 4, 2021

| Scientific Name | Common Name |
|---|---|
| **Birds** | |
| *Aphelocoma californica* | California scrub-jay |
| *Callipepla californica* | California quail |
| *Calypte anna* | Anna's hummingbird |
| *Cardellina pusilla* | Wilson's warbler |
| *Catharus ustulatus* | Swainson's thrush |
| *Ceryle alcyon* | belted kingfisher |
| *Chamaea fasciata* | wrentit |
| *Corvus brachyrhynchos* | American crow |
| *Empidonax difficilis* | Pacific-slope flycatcher |
| *Haemorhous mexicanus* | house finch |
| *Hirundo rustica* | barn swallow |
| *Molothrus ater* | Brown-headed Cowbird |
| *Passer domesticus* | house sparrow (*non-native*) |
| *Petrochelidon pyrrhonota* | cliff swallow |
| *Picoides nuttallii* | Nuttall's woodpecker |
| *Picoides villosus* | hairy woodpecker |
| *Pipilo maculatus* | spotted towhee |
| *Poecile rufescens* | chestnut-backed chickadee |
| *Psaltriparus minimus* | bushtit |
| *Sayornis nigricans* | black phoebe |
| *Streptopelia decaocto* | Eurasian collared-dove (*non-native*) |
| *Tachycineta thalassina* | violet-green swallow |

# Appendix C

## Potential for Special-status Species to Occur in the Study Area

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**Appendix C Potential for Special-Status Plant and Wildlife Species to Occur in the Study Area.** Special-status plant and wildlife species table with the potential to occur within the vicinity of the Study Area (Inverness, Drakes Bay, Tomales, Point Reyes NE, Petaluma, San Geronimo, Bolinas, Double Point USGS 7.5' topographic quadrangles) Results include database searches of California Native Plant Society (CNPS) Rare and Endangered Plant Inventory, California Natural Diversity Database (CNDDB, CDFW), Information Planning and Conservation (IPaC) as well as U.S. Fish and Wildlife Service Threatened and Endangered Species Lists.

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| pink sand-verbena<br>*Abronia umbellata* var. *breviflora* | Rank 1B.1 | Coastal dunes. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun-Oct. | **No Potential.** The Study Area lacks coastal dunes necessary to support this species. | No further actions are recommended. |
| Blasdale's bent grass<br>*Agrostis blasdalei* | Rank 1B.2 | Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms May-Jul. | **Unlikely.** The Study Area lacks coastal dunes, coastal bluff scrub, and coastal prairie necessary to support this species. | No further actions are recommended. |
| Franciscan onion<br>*Allium peninsulare* var. *franciscanum* | Rank 1B.2 | Cismontane woodland, valley and foothill grassland (clay soils; serpentine). Elevation ranges from 170 to 1000 feet (52 to 305 meters). Blooms (Apr) May-Jun. | **No Potential.** The Study Area lacks serpentine substrates necessary to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Sonoma alopecurus<br>*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. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains riparian habitat that could support this species. However, this species was not observed in the Study Area during the site visits. | No further actions are recommended. |
| Napa false indigo<br>*Amorpha californica* var. *napensis* | Rank 1B.2 | Broadleafed upland forest (openings), chaparral, cismontane woodland. Elevation ranges from 390 to 6560 feet (120 to 2000 meters). Blooms Apr-Jul. | **No Potential.** The Study Area lacks upland forest and chaparral and is well below the documented elevation range of the species. | No further actions are recommended. |
| bent-flowered fiddleneck<br>*Amsinckia lunaris* | Rank 1B.2 | Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 5 to 1640 feet (3 to 500 meters). Blooms Mar-Jun. | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur within grasslands present in the Study Area. However this species was not observed during the site visits. | No further actions are recommended. |
| coast rockcress<br>*Arabis blepharophylla* | Rank 4.3 | Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 5 to 3610 feet (3 to 1100 meters). Blooms Feb-May. | **No Potential.** The Study Area lacks rock outcrop habitat within coastal scrub associated with this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Mt. Tamalpais manzanita<br>*Arctostaphylos montana* ssp. *montana* | Rank 1B.3 | Chaparral, valley and foothill grassland; serpentine. Elevation ranges from 520 to 2495 feet (160 to 760 meters). Blooms Feb-Apr. | **No Potential.** The Study Area lacks serpentine substrates necessary to support this species. | No further actions are recommended. |
| Marin manzanita<br>*Arctostaphylos virgata* | Rank 1B.2 | Broadleafed upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest. Elevation ranges from 195 to 2295 feet (60 to 700 meters). Blooms Jan-Mar. | **No Potential.** The Study Area lacks the vegetation communities associated with this species. | No further actions are recommended. |
| Brewer's milk-vetch<br>*Astragalus breweri* | Rank 4.2 | Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland (open, often gravelly, usually on serpentine). Elevation ranges from 295 to 2395 feet (90 to 730 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area lacks serpentine substrates most often associated with this species. | No further actions are recommended. |
| coastal marsh milk-vetch<br>*Astragalus pycnostachyus* var. *pycnostachyus* | Rank 1B.2 | Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt). Elevation ranges from 0 to 100 feet (0 to 30 meters). Blooms (Apr)Jun-Oct. | **No Potential.** The Study Area lacks salt marsh, and mesic coastal scrub habitat known to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Point Reyes Blennosperma<br>*Blennosperma nanum* var. *robustum* | SR, Rank 1B.2 | Coastal prairie, coastal scrub. Elevation ranges from 30 to 475 feet (10 to 145 meters). Blooms Feb-Apr. | **No Potential.** The Study Area lacks coastal prairie and coastal scrub. This species is only known from the Point Reyes Peninsula, west of the San Andreas Fault. | No further actions are recommended. |
| Thurber's reed grass<br>*Calamagrostis crassiglumis* | Rank 2B.1 | Coastal scrub (mesic), marshes and swamps (freshwater). Elevation ranges from 30 to 195 feet (10 to 60 meters). Blooms May-Aug. | **Unlikely.** The Study Area lacks freshwater marsh habitat surrounded by coastal scrub associated with this species. | No further actions are recommended. |
| serpentine reed grass<br>*Calamagrostis ophiditis* | Rank 4.3 | Chaparral (open, often north-facing slopes), lower montane coniferous forest, meadows and seeps, valley and foothill grassland; serpentine. Elevation ranges from 295 to 3495 feet (90 to 1065 meters). Blooms Apr-Jul. | **No Potential.** The Study Area lacks serpentine habitat known to support this species. | No further actions are recommended. |
| Oakland star-tulip<br>*Calochortus umbellatus* | Rank 4.2 | Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland. Elevation ranges from 325 to 2295 feet (100 to 700 meters). Blooms Mar-May. | **Unlikely.** Despite potentially suitable grassland habitat present within the Study Area, this species is not known from west of Bolinas Ridge. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| coastal bluff morning-glory<br>*Calystegia purpurata* ssp. *saxicola* | Rank 1B.2 | Coastal bluff scrub, coastal dunes, coastal scrub, north coast coniferous forest. Elevation ranges from 0 to 345 feet (0 to 105 meters). Blooms (Mar)Apr-Sep. | **Unlikely.** The Study Area lacks the associated vegetation communities. | No further actions are recommended. |
| swamp harebell<br>*Campanula californica* | Rank 1B.2 | Bogs and fens, closed-cone coniferous forest, coastal prairie, meadows and seeps, marshes and swamps (freshwater), north coast coniferous forest. Elevation ranges from 0 to 1330 feet (1 to 405 meters). Blooms Jun-Oct. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable freshwater wetland habitat associated with this species. However, the species was not observed during the June site visit conducted during the species' bloom period. | No further actions are recommended. |
| seaside bittercress<br>*Cardamine angulata* | Rank 2B.2 | Lower montane coniferous forest, north coast coniferous forest. Elevation ranges from 80 to 3000 feet (25 to 915 meters). Blooms (Jan)Mar-Jul. | **No Potential.** The Study Area lacks the associated vegetation communities. | No further actions are recommended. |
| Buxbaum's sedge<br>*Carex buxbaumii* | Rank 4.2 | Bogs and fens, meadows and seeps (mesic), marshes and swamps. Elevation ranges from 5 to 10825 feet (3 to 3300 meters). Blooms Mar-Aug. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable freshwater wetland habitat associated with this species. However, the species was not observed during the site visits. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| bristle-stalked sedge<br>*Carex leptalea* | Rank 2B.2 | Bogs and fens, meadows and seeps (mesic), marshes and swamps. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable freshwater wetland habitat associated with this species. However, the species was not observed during the site visits. | No further actions are recommended. |
| Lyngbye's sedge<br>*Carex lyngbyei* | Rank 2B.2 | Marshes and swamps (brackish or freshwater). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Aug. | **Unlikely.** The Study Area lacks marshes and swamps necessary to support this species. | No further actions are recommended. |
| Tiburon paintbrush<br>*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 lacks serpentine substrates necessary to support this species. | No further actions are recommended. |
| johnny-nip<br>*Castilleja ambigua* var. *ambigua* | Rank 4.2 | Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pools margins (mesic). Elevation ranges from 0 to 1425 feet (0 to 435 meters). Blooms Mar-Aug. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable mesic grassland habitat associated with this species. However, the species was not observed during the site visits. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Humboldt Bay owl's-clover<br>*Castilleja ambigua* var. *humboldtensis* | Rank 1B.2 | Marshes and swamps (coastal salt). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms Apr-Aug. | **No Potential.** The Study Area lacks coastal salt marsh habitat necessary to support this species. | No further actions are recommended. |
| Point Reyes paintbrush<br>*Castilleja leschkeana* | Rank 1A | Marshes and swamps (coastal). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Jun. | **No Potential.** The Study Area lacks marshes and swamps. This species is considered extinct. | No further actions are recommended. |
| Nicasio Ceanothus<br>*Ceanothus decornutus* | Rank 1B.2 | Chaparral (maritime; serpentine). Elevation ranges from 770 to 950 feet (235 to 290 meters). Blooms Mar-May. | **No Potential.** The Study Area lacks serpentine chaparral necessary to support this species. | No further actions are recommended. |
| glory brush<br>*Ceanothus gloriosus* var. *exaltatus* | Rank 4.3 | Chaparral. Elevation ranges from 95 to 2000 feet (30 to 610 meters). Blooms Mar-Jun(Aug). | **No Potential.** The Study Area lacks chaparral habitat known to support this species. | No further actions are recommended. |
| Point Reyes Ceanothus<br>*Ceanothus gloriosus* var. *gloriosus* | Rank 4.3 | Coastal bluff scrub, closed-cone coniferous forest, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Mar-May. | **No Potential.** The Study Area lacks the vegetation communities associated with this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Mt. Vision Ceanothus<br>*Ceanothus gloriosus* var. *porrectus* | Rank 1B.3 | Closed-cone coniferous forest, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 80 to 1000 feet (25 to 305 meters). Blooms Feb-May. | **Unlikely.** The Study Area lacks the majority of vegetation communities associated with this species. | No further actions are recommended. |
| Mason's Ceanothus<br>*Ceanothus masonii* | SR, Rank 1B.2 | Chaparral (openings, rocky, serpentine). Elevation ranges from 750 to 1640 feet (230 to 500 meters). Blooms Mar-Apr. | **No Potential.** The Study Area lacks chaparral and serpentine substrates known to support this species. | No further actions are recommended. |
| Point Reyes bird's-beak<br>*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 lacks salt marsh habitat necessary to support this species. | No further actions are recommended. |
| San Francisco Bay spineflower<br>*Chorizanthe cuspidata* var. *cuspidata* | Rank 1B.2 | Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub (sandy). Elevation ranges from 5 to 705 feet (3 to 215 meters). Blooms Apr-Jul(Aug). | **No Potential.** The Study Area lacks sandy soils and coastal dunes known to support this species. | No further actions are recommended. |
| woolly-headed spineflower<br>*Chorizanthe cuspidata* var. *villosa* | Rank 1B.2 | Coastal dunes, coastal prairie, coastal scrub (sandy). Elevation ranges from 5 to 195 feet (3 to 60 meters). Blooms May-Jul(Aug). | **No Potential.** The Study Area lacks sandy soils and coastal dunes known to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| robust spineflower<br>*Chorizanthe robusta* var. *robusta* | FE, Rank 1B.1 | Chaparral (maritime), cismontane woodland (openings), coastal dunes, coastal scrub. Elevation ranges from 5 to 985 feet (3 to 300 meters). Blooms Apr-Sep. | **No Potential.** The Study Area lacks sandy soils and within the vegetation communities associated with this species. | No further actions are recommended. |
| Sonoma spineflower<br>*Chorizanthe valida* | FE, SE, Rank 1B.1 | Coastal prairie (sandy). Elevation ranges from 30 to 1000 feet (10 to 305 meters). Blooms Jun-Aug. | **No Potential.** The Study Area lacks coastal prairie underlain by sandy soils necessary to support this species. | No further actions are recommended. |
| Bolander's water-hemlock<br>*Cicuta maculata* var. *bolanderi*. | Rank 2B.1 | Marshes and swamps coastal, fresh or brackish water. Elevation ranges from 0 to 655 feet (0 to 200 meters). Blooms Jul-Sep. | **No Potential.** The Study Area lacks salt marsh habitat necessary to support this species. | No further actions are recommended. |
| Franciscan thistle<br>*Cirsium andrewsii* | Rank 1B.2 | Broadleafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub; bluffs, ravines, seeps (sometimes serpentine). Elevation ranges from 0 to 490 feet (0 to 150 meters). Blooms Mar-Jul. | **Unlikely.** The Study Area lacks seeps, ravines, and serpentine substrates most often associated with this species. | No further actions are recommended. |
| Mt. Tamalpais thistle<br>*Cirsium hydrophilum* var. *vaseyi* | Rank 1B.2 | Broadleafed upland forest, chaparral, meadows and seeps (serpentine). Elevation ranges from 785 to 2035 feet (240 to 620 meters). Blooms May-Aug. | **No Potential.** The Study Area lacks serpentines seeps and streams necessary to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Raiche's red ribbons<br>*Clarkia concinna* ssp. *rachei* | Rank 1B.1 | Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-May. | **No Potential.** The Study Area lacks coastal bluff scrub necessary to support this species. | No further actions are recommended. |
| round-headed Chinese-houses<br>*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 lacks coastal dunes necessary to support this species. | No further actions are recommended. |
| Baker's larkspur<br>*Delphinium bakeri* | FE, SE, Rank 1B.1 | Broadleafed upland forest, coastal scrub,. Elevation ranges from 260 to 1000 feet (80 to 305 meters). Blooms Mar-May. | **No Potential.** The Study Area lacks the associated vegetation communities. | No further actions are recommended. |
| golden larkspur<br>*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 lacks the associated vegetation communities. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| western leatherwood<br>*Dirca occidentalis* | Rank 1B.2 | Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. Elevation ranges from 80 to 1395 feet (25 to 425 meters). Blooms Jan-Mar(Apr). | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur in riparian habitat within the Study Area. However, However, this species was not observed in the Study Area during the January site visit conducted during the species' bloom period. | No further actions are recommended. |
| California bottle-brush grass<br>*Elymus californicus* | Rank 4.3 | Broadleafed upland forest, cismontane woodland, north coast coniferous forest, riparian woodland. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms May-Aug(Nov). | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having moderate potential to in riparian habitat within the Study Area However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| Koch's cord moss<br>*Entosthodon kochii* | Rank 1B.3 | Cismontane woodland (soil). Elevation ranges from 590 to 3280 feet (180 to 1000 meters). | **No Potential.** The Study Area lacks upland cismontane woodland and is much lower than the documented elevation range of the species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| supple daisy<br>*Erigeron supplex* | Rank 1B.2 | Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 165 feet (10 to 50 meters). Blooms May-Jul. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains native grassland habitat with coastal influence that could support this species. However, the species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| Tiburon buckwheat<br>*Eriogonum luteolum* var. *caninum* | Rank 1B.2 | Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland (serpentine). Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms May-Sep. | **No Potential.** The Study Area lacks serpentine substrates necessary to support this species. | No further actions are recommended. |
| bluff wallflower<br>*Erysimum concinnum* | Rank 1B.2 | Coastal bluff scrub, coastal dunes, coastal prairie. Elevation ranges from 0 to 605 feet (0 to 185 meters). Blooms Feb-Jul. | **Unlikely.** The Study Area lacks coastal dunes, coastal bluff scrub, and sandy coastal prairie habitats known to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Marin checker lily<br>*Fritillaria lanceolata* var. *tristulis* | Rank 1B.1 | Coastal bluff scrub, coastal prairie, coastal scrub. Elevation ranges from 45 to 490 feet (15 to 150 meters). Blooms Feb-May. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains native grassland habitat with coastal influence that could support this species. However, the species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| fragrant fritillary<br>*Fritillaria liliacea* | Rank 1B.2 | Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 5 to 1345 feet (3 to 410 meters). Blooms Feb-Apr. | **Not Observed (originally assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur due to the presence of potentially suitable grassland habitat. However, this species was not observed in the Study Area during the surveys conducted during the species' documented bloom period. | No further actions are recommended. |
| blue coast gilia<br>*Gilia capitata* ssp. *chamissonis* | Rank 1B.1 | Coastal dunes, coastal scrub (sandy). Elevation ranges from 5 to 655 feet (2 to 200 meters). Blooms Apr-Jul. | **No Potential.** The Study Area lacks coastal dunes, and sandy coastal scrub known to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| woolly-headed gilia<br>*Gilia capitata* ssp. *tomentosa* | Rank 1B.1 | Coastal bluff scrub, valley and foothill grassland, rocky outrcops on the coast (often serpentine). Elevation ranges from 30 to 720 feet (10 to 220 meters). Blooms May-Jul. | **No Potential.** The Study Area lacks rocky outcrops and serpentine substrate necessary to support this species. | No further actions are recommended. |
| dark-eyed gilia<br>*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 coastal dunes necessary to support this species. | No further actions are recommended. |
| San Francisco gumplant<br>*Grindelia hirsutula* var. *maritima* | Rank 3.2 | Coastal bluff scrub, coastal scrub, valley and foothill grassland (serpentine). Elevation ranges from 45 to 1310 feet (15 to 400 meters). Blooms Jun-Sep. | **No Potential.** The Study Area lacks serpentine substrate necessary to support this species. | No further actions are recommended. |
| congested-headed hayfield tarplant<br>*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. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable grassland habitat that could support this species. This species was observed at a documented reference site near Petaluma on the date of the June site visit. However, this species was not observed in the Study Area. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| short-leaved evax<br>*Hesperevax sparsiflora* var. *brevifolia* | Rank 1B.2 | Coastal bluff scrub (sandy), coastal dunes, coastal prairie. Elevation ranges from 0 to 705 feet (0 to 215 meters). Blooms Mar-Jun. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains native grassland habitat with coastal influence that could support this species. However, the species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| Marin western flax<br>*Hesperolinon congestum* | FT, ST, Rank 1B.1 | Chaparral, valley and foothill grassland (serpentine). Elevation ranges from 15 to 1215 feet (5 to 370 meters). Blooms Apr-Jul. | **No Potential.** The Study Area lacks serpentine substrate necessary to support this species. | No further actions are recommended. |
| water star-grass<br>*Heteranthera dubia* | Rank 2B.2 | Marshes and swamps (alkaline, still or slow-moving water). Elevation ranges from 95 to 4905 feet (30 to 1495 meters). Blooms Jul-Oct. | **No Potential.** The Study Area lacks marshes and swamps with alkaline, eutrophic water necessary to support this species. | No further actions are recommended. |
| Kellogg's horkelia<br>*Horkelia cuneata* var. *sericea* | Rank 1B.1 | Closed-cone coniferous forest, chaparral (maritime), coastal dunes, coastal scrub. Elevation ranges from 30 to 655 feet (10 to 200 meters). Blooms Apr-Sep. | **No Potential.** The Study Area lacks closed-cone coniferous forest, maritime chaparral, and coastal dunes. CNPS (2021) considers this species 'presumed extirpated' from Marin County. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Point Reyes horkelia<br>*Horkelia marinensis* | Rank 1B.2 | Coastal dunes, coastal prairie, coastal scrub. Elevation ranges from 15 to 2475 feet (5 to 755 meters). Blooms May-Sep. | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having high potential to occur due to the presence of potentially suitable grassland, and proximity to documented occurrences. However, this species was not observed in the Study Area during the June survey conducted during the species' documented bloom period. | No further actions are recommended. |
| thin-lobed horkelia<br>*Horkelia tenuiloba* | Rank 1B.2 | Broadleafed upland forest, chaparral, valley and foothill grassland. Elevation ranges from 160 to 1640 feet (50 to 500 meters). Blooms May-Jul(Aug). | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having moderate potential to occur due to the presence of potentially suitable grassland habitat. However, this species was not observed in the Study Area during the June survey conducted during the species' documented bloom period. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| harlequin lotus<br>*Hosackia gracilis* | Rank 4.2 | Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, north coast coniferous forest, valley and foothill grassland. Elevation ranges from 0 to 2295 feet (0 to 700 meters). Blooms Mar-Jul. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| island rock lichen<br>*Hypogymnia schizidiata* | Rank 1B.3 | Closed-cone coniferous forest, chaparral. Elevation ranges from 1180 to 1330 feet (360 to 405 meters). | **No Potential.** The Study Area lacks the vegetation communities associated with this species and is well below the documented elevation range. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| coast iris<br>*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. | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having moderate potential to occur due to the presence of potentially suitable grassland habitat with coastal influence. However, this species was not observed in the Study Area during the April survey conducted during the species' documented bloom period. | |
| small groundcone<br>*Kopsiopsis hookeri* | Rank 2B.3 | North coast coniferous forest. Elevation ranges from 295 to 2905 feet (90 to 885 meters). Blooms Apr-Aug. | **No Potential.** The Study Area lacks north coast coniferous forest known to support this species. | No further actions are recommended. |
| Baker's goldfields<br>*Lasthenia californica* ssp. *bakeri* | Rank 1B.2 | Closed-cone coniferous forest (openings), coastal scrub, meadows and seeps, marshes and swamps. Elevation ranges from 195 to 1705 feet (60 to 520 meters). Blooms Apr-Oct. | **Unlikely.** The Study Area lacks the vegetation communities associated with this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| perennial goldfields<br>*Lasthenia californica* ssp. *macrantha* | Rank 1B.2 | Coastal bluff scrub, coastal dunes, coastal scrub. Elevation ranges from 15 to 1705 feet (5 to 520 meters). Blooms Jan-Nov. | **Unlikely.** The Study Area lacks the vegetation communities associated with this species. | No further actions are recommended. |
| beach layia<br>*Layia carnosa* | FE, SE, Rank 1B.1 | Coastal dunes, coastal scrub (sandy). Elevation ranges from 0 to 195 feet (0 to 60 meters). Blooms Mar-Jul. | **No Potential.** The Study Area lacks coastal dunes and sandy coastal scrub necessary to support this species. | No further actions are recommended. |
| bristly leptosiphon<br>*Leptosiphon acicularis* | 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. | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur due to the presence of potentially suitable grassland habitat. However, this species was not observed in the Study Area during the April and June surveys conducted during the species' documented bloom period. | No further actions are recommended. |
| coast yellow leptosiphon<br>*Leptosiphon croceus* | SS, Rank 1B.1 | Coastal bluff scrub, coastal prairie. Elevation ranges from 30 to 490 feet (10 to 150 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area lacks coastal bluff scrub, and coastal prairie habitat associated with this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| large-flowered leptosiphon<br>*Leptosiphon grandiflorus* | Rank 4.2 | Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland (sandy soil). Elevation ranges from 15 to 4005 feet (5 to 1220 meters). Blooms Apr-Aug. | **Unlikely.** Despite the presence of potentially suitable grassland habitat, the Study Area lacks sandy soils associated with this species. | No further actions are recommended. |
| rose leptosiphon<br>*Leptosiphon rosaceus* | Rank 1B.1 | Coastal bluff scrub. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jul. | **Unlikely.** The Study Area lacks coastal bluff scrub habitat known to support this species. | No further actions are recommended. |
| woolly-headed lessingia<br>*Lessingia hololeuca* | Rank 3 | Broadleafed upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland (serpentine). Elevation ranges from 45 to 1000 feet (15 to 305 meters). Blooms Jun-Oct. | **No Potential.** The Study Area lacks serpentine substrate necessary to support this species. | No further actions are recommended. |
| Tamalpais lessingia<br>*Lessingia micradenia* var. *micradenia* | Rank 1B.2 | Chaparral, valley and foothill grassland (serpentine). Elevation ranges from 325 to 1640 feet (100 to 500 meters). Blooms (Jun)Jul-Oct. | **No Potential.** The Study Area lacks serpentine substrate necessary to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Mason's Lilaeopsis<br>*Lilaeopsis masonii* | SR, Rank 1B.1 | Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms Apr-Nov. | **No Potential.** The Study Area lacks marshes and swamps known to support this species. | No further actions are recommended. |
| coast lily<br>*Lilium maritimum* | Rank 1B.1 | Broadleafed upland forest, closed-cone coniferous forest, coastal prairie, coastal scrub, marshes and swamps (freshwater), north coast coniferous forest. Elevation ranges from 15 to 1560 feet (5 to 475 meters). Blooms May-Aug. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| Pitkin Marsh lily<br>*Lilium pardalinum* ssp. *pitkense* | FE, SE, Rank 1B.1 | Cismontane woodland, meadows and seeps, marshes and swamps (freshwater). Elevation ranges from 110 to 215 feet (35 to 65 meters). Blooms Jun-Jul. | **No Potential.** Despite potentially suitable wetland habitat, this species is only known from one location in Sonoma County, and is not known from Marin County (CNPS 2021). | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Point Reyes meadowfoam<br>*Limnanthes douglasii* ssp. *sulphurea* | SE, Rank 1B.2 | Coastal prairie, meadows and seeps (mesic), marshes and swamps (freshwater), vernal pools. Elevation ranges from 0 to 460 feet (0 to 140 meters). Blooms Mar-May. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this species was not observed in the Study Area during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |
| Tidestrom's lupine<br>Lupinus tidestromii | FE, SE, Rank 1B.1 | Coastal dunes. Elevation ranges from 0 to 330 feet (0 to 100 meters). Blooms Apr-Jun. | **No Potential.** The Study Area lacks coastal dunes necessary to support this species. | No further actions are recommended. |
| Mt. Diablo cottonweed<br>*Micropus amphilobus* | Rank 3.2 | On slopes, or ridges, underlain by shallow soils, of sedimentary or volcanic origin in broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland (thin soils). Elevation ranges from 145 to 2705 feet (45 to 825 meters). Blooms Mar-May. | **Unlikely.** The Study Area lacks thin, rocky soils necessary to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| marsh microseris<br>*Microseris paludosa* | Rank 1B.2 | Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation ranges from 15 to 1165 feet (5 to 355 meters). Blooms Apr-Jun(Jul). | **Not Observed (initially assessed: Moderate Potential).** This species was initially assessed as having a moderate potential to occur due to the presence of potentially suitable grassland habitat, and proximity to documented occurrences. However, this species was not observed in the Study Area during the April and June surveys conducted during the species' documented bloom period. | No further actions are recommended. |
| elongate copper moss<br>*Mielichhoferia elongata* | Rank 4.3 | Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, subalpine coniferous forest; growing on very acidic, metamorphic rock. Elevation ranges from 0 to 6430 feet (0 to 1960 meters). | **No Potential.** The Study Area lacks acidic, metamorphic rock necessary to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| northern curly-leaved Monardella *Monardella sinuata* ssp. *nigrescens* | Rank 1B.2 | Chaparral (scr co.), coastal dunes, coastal scrub, lower montane coniferous forest (scr co., ponderosa pine sandhills). Elevation ranges from 0 to 985 feet (0 to 300 meters). Blooms (Apr)May-Jul(Aug-Sep). | **No Potential.** The Study Area lacks coastal dunes and sandy substrates within chaparral, coastal scrub, and ponderosa pine forest habitats known to support this species. | No further actions are recommended. |
| Marin County navarretia *Navarretia rosulata* | Rank 1B.2 | Closed-cone coniferous forest, chaparral (serpentine). Elevation ranges from 655 to 2085 feet (200 to 635 meters). Blooms May-Jul. | **No Potential.** The Study Area lacks serpentine habitat necessary to support this species. | No further actions are recommended. |
| 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. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable seasonal wetland habitat which could support this species. However, this specsei was not observed during the June site visit conducted during the species' documented bloom period. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| North Coast phacelia<br>*Phacelia insularis* var. *continentalis* | Rank 1B.2 | Coastal bluff scrub, coastal dunes. Elevation ranges from 30 to 560 feet (10 to 170 meters). Blooms Mar-May. | **No Potential.** The Study Area lacks coastal dunes and sandy substrates within coastal bluff scrub known to support this species. | No further actions are recommended. |
| Point Reyes rein orchid<br>*Piperia elegans* ssp. *decurtata* | Rank 1B.1 | Coastal bluff scrub, coastal prairie. Elevation ranges from 45 to 605 feet (15 to 185 meters). Blooms Jul-Oct. | **No Potential.** The Study Area lacks the vegetation communities associated with this species. This species is only known from two locations on the Point Reyes' peninsula on the immediate coastline. | No further actions are recommended. |
| Michael's rein orchid<br>*Piperia michaelii* | Rank 4.2 | Coastal bluff scrub, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest. Elevation ranges from 5 to 3000 feet (3 to 915 meters). Blooms Apr-Aug. | **No Potential.** The Study Area lacks the vegetation communities associated with this species. | No further actions are recommended. |
| Petaluma popcornflower<br>*Plagiobothrys mollis* ssp. *vestitus* | Rank 1A | Marshes and swamps (coastal salt), valley and foothill grassland (mesic). Elevation ranges from 30 to 165 feet (10 to 50 meters). Blooms Jun-Jul. | **Unlikely.** The Study Area lacks coastal salt marsh habitat, and despite potentially suitable mesic grassland, this species has not been observed since 1880 and is considered likely extinct (CNPS 2021). | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| North Coast semaphore grass<br>*Pleuropogon hooverianus* | ST, Rank 1B.1 | Broadleafed upland forest, meadows and seeps, north coast coniferous forest. Elevation ranges from 30 to 2200 feet (10 to 671 meters). Blooms Apr-Jun. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable mesic grassland habitat which could support this species. However, this species was not observed during the April and June site visits conducted during the species' documented bloom period. | No further actions are recommended. |
| nodding semaphore grass<br>*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 (Mar)Apr-Aug. | **Not Observed (initially assessed: Moderate Potential).** The Study Area contains potentially suitable mesic riparian habitat which could support this species. However, this species was not observed during the April and June site visits conducted during the species' documented bloom period. | No further actions are recommended. |
| Marin knotweed<br>*Polygonum marinense* | Rank 3.1 | Marshes and swamps (coastal salt or brackish). Elevation ranges from 0 to 35 feet (0 to 10 meters). Blooms (Apr)May-Aug(Oct). | **No Potential.** The Study Area lacks coastal salt marshes known to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Tamalpais oak<br>*Quercus parvula* var. *tamalpaisensis* | Rank 1B.3 | Lower montane coniferous forest. Elevation ranges from 325 to 2460 feet (100 to 750 meters). Blooms Mar-Apr. | **No Potential.** This Study Area lacks lower montane coniferous forest and is below the documented elevation range of the species. | No further actions are recommended. |
| Lobb's aquatic buttercup<br>*Ranunculus lobbii* | Rank 4.2 | Cismontane woodland, north coast coniferous forest, valley and foothill grassland, vernal pools. Elevation ranges from 45 to 1540 feet (15 to 470 meters). Blooms Feb-May. | **No Potential.** The Study Area lacks seasonally ponded water of 6 inches or deeper necessary to support this species. | No further actions are recommended. |
| California beaked-rush<br>*Rhynchospora californica* | Rank 1B.1 | Bogs and fens, lower montane coniferous forest, meadows and seeps (seeps), marshes and swamps (freshwater). Elevation ranges from 145 to 3315 feet (45 to 1010 meters). Blooms May-Jul. | **Unlikely.** The Study Area lacks freshwater marshes and swamps known to support this species. | No further actions are recommended. |
| Victor's gooseberry<br>*Ribes victoris* | Rank 4.3 | Broadleafed upland forest, chaparral. Elevation ranges from 325 to 2460 feet (100 to 750 meters). Blooms Mar-Apr. | **No Potential.** The Study Area lacks broadleafed upland forest and chaparral known to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Sanford's arrowhead<br>*Sagittaria sanfordii* | Rank 1B.2 | Marshes and swamps (assorted shallow freshwater). Elevation ranges from 0 to 2135 feet (0 to 650 meters). Blooms May-Oct(Nov). | **No Potential.** The Study Area lacks perennially ponded water necessary to support this species. | No further actions are recommended. |
| Point Reyes checkerbloom<br>*Sidalcea calycosa* ssp. *rhizomata* | Rank 1B.2 | Marshes and swamps (freshwater, near coast). Elevation ranges from 5 to 245 feet (3 to 75 meters). Blooms Apr-Sep. | **No Potential.** The Study Area lacks freshwater marshes known to support this species. | No further actions are recommended. |
| Marin checkerbloom<br>*Sidalcea hickmanii* ssp. *viridis* | Rank 1B.1 | Chaparral (serpentine). Elevation ranges from 160 to 1410 feet (50 to 430 meters). Blooms May-Jun. | **No Potential.** The Study Area lacks serpentine chaparral habitat known to support this species. | No further actions are recommended. |
| purple-stemmed checkerbloom<br>*Sidalcea malviflora* ssp. *purpurea* | Rank 1B.2 | Broadleafed upland forest, coastal prairie. Elevation ranges from 45 to 280 feet (15 to 85 meters). Blooms May-Jun. | **Unlikely.** The Study Area lacks broadleaf upland forest and coastal prairie habitat associated with this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Scouler's catchfly<br>*Silene scouleri* ssp. *scouleri* | Rank 2B.2 | Coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevation ranges from 0 to 1970 feet (0 to 600 meters). Blooms (Mar-May)Jun-Aug(Sep). | **Unlikely.** The Study Area lacks shallow sandy soil and exposed marine headlands known to support this species (Howell et al. 2007). | No further actions are recommended. |
| Santa Cruz microseris<br>*Stebbinsoseris decipiens* | Rank 1B.2 | Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland (usually on serpentine). Elevation ranges from 30 to 1640 feet (10 to 500 meters). Blooms Apr-May. | **Unlikely.** The Study Area lacks serpentine substrates most often associated with this species. | No further actions are recommended. |
| beach starwort<br>*Stellaria littoralis* | Rank 4.2 | Bogs and fens, coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps. Elevation ranges from 15 to 130 feet (5 to 40 meters). Blooms Mar,May,Jun,Jul. | **Unlikely.** The Study Area lacks the associated vegetation communities. | No further actions are recommended. |
| Tamalpais jewelflower<br>*Streptanthus batrochopus* | Rank 1B.3 | Closed-cone coniferous forest, chaparral. Elevation ranges from 1000 to 2135 feet (305 to 650 meters). Blooms Apr-Jul. | **No Potential.** The Study Area lacks serpentine substrates necessary to support this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| 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 lacks serpentine substrates necessary to support this species. | No further actions are recommended. |
| whiteworm lichen *Thamnolia vermicularis* | Rank 2B.1 | On rocks derived from sandstone in chaparral, valley and foothill grassland. Elevation ranges from 295 to 295 feet (90 to 90 meters). | **No Potential.** The Study Area lacks rocky outcrops of sandstone rock known to support this species. | No further actions are recommended. |
| 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. | **Moderate Potential (Not Observed).** This species was initially assessed as having moderate potential to occur due to the presence of potentially suitable grassland habitat and proximity to the only documented extant occurrence near Dillon Beach (CDFW 2021). However, this species was not observed during protocol-level rare plant surveys conducted during the species' documented bloom period. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE** | RECOMMENDATIONS*** |
|---|---|---|---|---|
| **Plants** | | | | |
| Pacific Grove clover<br>*Trifolium polypodon`* | 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). | **Unlikely.** Despite potentially suitable grassland habitat, this species is not documented from Marin County (Howell et al. 2007, CCH 2021). | No further actions are recommended. |
| San Francisco owl's-clover<br>*Triphysaria floribunda* | Rank 1B.2 | Coastal prairie, coastal scrub, valley and foothill grassland. Elevation ranges from 30 to 525 feet (10 to 160 meters). Blooms Apr-Jun. | **Unlikely.** The Study Area lacks shallow soil and exposed marine headlands known to support this species. | No further actions are recommended. |
| coastal Triquetrella<br>*Triquetrella californica* | Rank 1B.2 | Coastal bluff scrub, coastal scrub. Elevation ranges from 30 to 330 feet (10 to 100 meters). | **No Potential.** The Study Area lacks the vegetation communities associated with this species. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| **MAMMALS** | | | | |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| pallid bat<br>*Antrozous pallidus* | 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. | **Moderate Potential.** Unoccupied buildings within the Study Area may be used for roosting; there are CNDDB occurrences in the vicinity (CDFW 2022a). | A pre-construction habitat assessment and survey effort should be performed prior to the initiation of building demolition; see report section 6.2.2. |
| Point Reyes mountain beaver<br>*Aplodontia rufa phaea* | SSC | Occurs only in western Marin County, almost entirely within Point Reyes National Seashore. Found on moist, north-facing slopes within areas of coastal scrub. Lives in burrow systems and forages on a variety of herbaceous plants. | **No Potentia**l. The Study Area is outside of this species' known local range; the nearest occurrence in CNDDB is located greater than 4.5 miles to the northwest (CDFW 2022a). | No further actions are recommended. |
| Sonoma tree vole<br>*Arborimus pomo* | SCC | North coastal fog belt from Oregon border to Sonoma County. Occurs In Douglas fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas fir needles. Will occasionally take needles of grand fir, hemlock or spruce. | **No Potential.** The Study Area lacks coniferous forest, and outside of this species' known range. | No further actions are recommended. |
| Townsend's western big-eared bat<br>*Corynorhinus townsendii townsendii* | 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 | **Moderate Potential.** Unoccupied buildings within the Study Area may be used for roosting; there are CNDDB occurrences in the vicinity (CDFW 2022a). | A pre-construction habitat assessment and survey effort should be performed prior to the initiation of building demolition; see report section 6.2.2. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| western red bat<br>*Lasiurus blossevillii* | SSC, WBWG High | Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. | **Unlikely.** The Study Area lacks large broad-leaved trees and other typical roosting substrates. | No further actions are recommended. |
| fringed myotis<br>*Myotis thysanodes* | WBWG High | Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts. | **Unlikely.** The Study Area lacks trees, caves/mines and other typical roost substrates for this species. | No further actions are recommended. |
| salt-marsh harvest mouse<br>*Reithrodontomys raviventris* | FE, SE, SFP | Found only in the saline emergent wetlands of the San Francisco Bay Estuary and its tributaries. Pickleweed is primary habitat, but may use other thick wetland vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape. | **No Potential.** The Study Area does not provide any tidal or otherwise saline marsh. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| American badger<br>*Taxidea taxus* | SSC | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents. | **High Potential.** The Study Area provides grassland areas with friable soils. Unused/remnant badger burrows were observed within grassland in the northern portion of the ; this site, and this species may occur there again in the future. | Pre-construction surveys prior to ground disturbance; any burrows not within the project footprint should be left undisturbed. See report section 6.2.2. |
| Point Reyes jumping mouse<br>*Zapus trinotatus orarius* | SSC | Inhabits bunch grass marshes on the uplands of Point Reyes in areas safe from continuous inundation. Eats mainly grass seeds with some insects and fruit taken. Builds grassy nests on ground under vegetation, burrows in winter. | **No Potential**. The Study Area lacks suitable habitat and is outside of this species' range. | No further actions are recommended. |
| **BIRDS** | | | | |
| tricolored blackbird<br>*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. | **Unlikely.** This species' local distribution includes the Point Reyes Peninsula and adjacent areas (CDFW 2022a, Shuford 1993). However, the Study Area lacks tall, dense emergent vegetation or similar herbaceous vegetation for nesting. May occur with other blackbirds during the non-breeding season. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| grasshopper sparrow<br>*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. | **Moderate Potential.** Areas of open grassland within the Study Area are limited in contiguous extent, but may be large enough to support this species. | Perform pre-construction surveys if vegetation removal and/or ground disturbance is initiated during the nesting season; see report section 6.2.2. |
| great egret<br>*Ardea alba* | none; 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.** Suitable nest trees are present within the Study Area, but no indication of nesting (or presence of the species) was observed during site visits. May occasionally forage there. | No further actions are recommended. |
| great blue heron<br>*Ardea herodias* | none; 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.** Suitable nest trees are present within the Study Area, but no indication of nesting (or presence of the species) was observed during site visits. May occasionally forage there. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| burrowing owl<br>*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 provides some open grassland. However, this species is extirpated from Marin County as a breeder (Shuford and Gardali 2008); recent, local wintering observations are concentrated on the Point Reyes Peninsula or areas with large expanses of grassland/pastureland, the nearest located approximately 1.5 miles to the north (eBird 2022). | No further actions are recommended. |
| marbled murrelet<br>*Brachyramphus marmoratus* | FT, SE | Predominantly coastal marine. Nests in old-growth coniferous forests up to 30 miles inland along the Pacific coast, from Eureka to Oregon border, and in Santa Cruz/San Mateo Counties. Nests are highly cryptic, and typically located on platform-like branches of mature redwoods and Douglas firs. Forages on marine invertebrates and small fishes. | **No Potential.** The Study Area does not contain coniferous forest and provides no habitat for this species. | No further actions are recommended. |
| western snowy plover<br>*Charadrius nivosus (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 lacks suitable beach or shoreline habitat, and does not provide any suitable nesting substrates. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| northern harrier<br>*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. | **Unlikely (nesting).** The Study Area provides suitable foraging habitat and is within this species' local nesting range (Shuford 1993). However, areas of grassland area relatively small in area and disturbed by surrounding development, rendering nesting unlikely. | No further actions are recommended. |
| western yellow-billed cuckoo<br>*Coccyzus americanus occidentalis* | FT, SE | Summer resident, breeding in dense riparian forests and jungles, typically with early successional vegetation present. Utilizes densely-foliaged deciduous trees and shrubs. Eats mostly caterpillars. Current breeding distribution within California very restricted. | **Unlikely.** Riparian woodland is present within the Study Area, but there are no modern breeding records in Marin County (Shuford 1993). | No further actions are recommended. |
| black swift<br>*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 Potential.** Study Area lacks any suitable nesting habitat (waterfalls, cliffs). | No further actions are recommended. |
| white-tailed kite<br>*Elanus leucurus* | SFP | Year-long resident of coastal and valley lowlands, including agricultural areas. Nests in a variety of tree types. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians. | **Moderate Potential.** The Study Area provides suitable nest trees and adjacent open areas for foraging. | Perform pre-construction surveys if tree removal and/or ground disturbance is initiated during the nesting season; see report section 6.2.2. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| tufted puffin<br>*Fratercula cirrhata* | SSC | Pelagic and coastal marine. Nests near or along the coast on islands, islets, and (rarely) isolated mainland cliffs. Requires sod or earth into which the birds can burrow, or rocky crevices where friable soil is absent. Forages at sea, primarily for fish. | **No Potential.** The Study Area does not contain marine waters or coastal islets/islands for nesting. | No further actions are recommended. |
| San Francisco (saltmarsh) common yellowthroat<br>*Geothlypis trichas sinuosa* | SSC | Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting. | **Moderate Potential.** While the Study Area lacks dense and well-developed marsh habitat, moist riparian areas with a dense understory may support this species. | Perform pre-construction surveys if vegetation removal and/or ground disturbance in or adjacent to riparian woodland is initiated during the nesting season; see report section 6.2.2. |
| bald eagle<br>*Haliaeetus leucocephalus* | SE, SFP | Occurs year-round in California, but primarily a winter visitor. 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. | **Unlikely.** Nests locally on Inverness Ridge. No typical nest trees are present in the Study Area nor was any indication of presence observed during site visits. | No further actions are recommended. |
| California black rail<br>*Laterallus jamaicensis coturniculus* | ST, SFP | 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. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| ashy storm-petrel<br>*Oceanodroma homochroa* | SSC | Marine species; nests in rocky crevices on offshore islands and rocks from southern Mendocino County to northern Baja California. Forages over open ocean for invertebrates and larval fishes. | **No Potential.** The Study Area does not contain marine waters or coastal islets/islands for nesting. | No further actions are recommended. |
| Bryant's savannah sparrow<br>*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; often found where wetland communities merge into grassland. May also occur in drier grasslands. Nests near the ground in taller vegetation, including along roads, levees, and canals. | **Moderate Potential.** Areas of open grassland within the Study Area are limited in contiguous extent, but may be large enough to support this species. | Perform pre-construction surveys if vegetation removal and/or ground disturbance is initiated during the nesting season; see report section 6.2.2. |
| California Ridgway's (clapper) rail<br>*Rallus obsoletus obsoletus* | FE, SE, SFP | 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 molluscs and crustaceans. | **No Potential.** The Study Area does not feature any tidal marsh. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| bank swallow<br>*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. 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 lacks suitable cliff and riparian habitat; no local modern breeding records. | No further actions are recommended. |
| yellow warbler<br>*Setophaga petechia brewsteri* | SSC | Summer resident throughout much of California. Breeds in riparian vegetation close to water, including streams and wet meadows. Microhabitat used for nesting variable, but dense willow growth is typical. Occurs widely on migration. | **Moderate Potential.** Riparian woodland and thickets within the Study Area provides suitable nesting habitat. | Perform pre-construction surveys if tree removal and/or ground disturbance in or adjacent to riparian woodland is initiated during the nesting season; see report section 6.2.2. |
| northern spotted owl<br>*Strix occidentalis caurina* | FT,ST, SSC | Year-round resident in dense, structurally complex forests, generally with old-growth or otherwise mature conifers. In Marin County, uses both coniferous and mixed (coniferous-hardwood) forests. Nests on platform-like substrates in the forest canopy, including in tree cavities. Preys mostly on mammals. | **Unlikely.** The Study Area lacks mature coniferous or mixed forest of the type this species requires. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| **REPTILES AND AMPHIBIANS** | | | | |
| western pond turtle<br>*Actinemys 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. | **High Potential (Lagunitas Creek).** This species is presumably present at least intermittently in Lagunitas Creek, but is unlikely overall to be present within the Project Area. | No further actions are recommended; see report section 6.2.2. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| California tiger salamander *Ambystoma californiense* | FE/FT, ST, SSC | Populations in Santa Barbara and Sonoma counties currently listed as endangered; threatened in remainder of range. Inhabits grassland, oak woodland and savannah. Spends most of life underground in mammal burrows and similar refugia. Vernal pools and other seasonal water features used for breeding. | **No Potential.** The Study Area is outside of this species' local range. | No further actions are recommended. |
| 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. | **Unlikely.** The reach of Lagunitas Creek within the Study Area is presumably too saline and has unfavorable hydrology (very strong flows during the wet season) to support breeding; typical forested freshwater streams are absent. | No further actions are recommended. |
| California red-legged frog *Rana draytonii* | FT, SSC | Lowlands and foothills in or near permanent sources of deep water with dense emergent and/or overhanging riparian vegetation. Favors perennial to intermittent ponds, stream pools and wetlands. Requires 11 to 20 weeks of continuous inundation for larval development. Disperses through upland habitats during and after rains. | **Moderate Potential.** Aquatic breeding within the Study Area is unlikely, but may occur in non-breeding aquatic habitat (e.g., inundated stream side channels), and also in upland areas during movement or dispersal. There are several CNDDB occurrences within 1 mile (CDFW 2022a). | Pre-construction surveys, avoidance measures during construction, and possibly consultation with the USFWS; see report section 6.2.2. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| foothill yellow-legged frog<br>*Rana boylii* | SSC | Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, 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 both aquatic and terrestrial invertebrates. Highly aquatic. | **No Potential.** The Study Area lacks typical rocky stream habitat; this species appears to be extirpated in the vicinity (CDFW 2022a). | No further actions are recommended. |
| **FISHES** | | | | |
| Coho salmon - central CA coast ESU<br>*Oncorhynchus kisutch* | FE, SE | Federal listing includes populations between Punta Gorda and San Lorenzo River. State listing includes populations south of San Francisco Bay only. Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen. | **Present (Lagunitas Creek only).** Lagunitas Creek and several tributary streams support spawning populations of this species (CDFW 2022a); individuals likely present primarily during in- and out-migrations. | Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.2.2. |
| steelhead - central CA coast DPS<br>*Oncorhynchus mykiss irideus* | FT, NMFS | 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. | **Present (Lagunitas Creek only).** Lagunitas Creek and portions of its watershed support spawning populations of this species (CDFW 2022a); individuals likely present primarily during in- and out-migrations. | Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.2.2. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| Tomales roach<br>*Lavinia symmetricus* ssp. 2 | SSC | Occurs in tributaries to Tomales Bay. Habitat generalist, tolerant of relatively high temperatures and low oxygen levels in a variety of freshwater stream reaches. Intolerant of highly saline conditions. | **High Potential (Lagunitas Creek only).** The reach of Lagunitas Creek within the Study Area may support this species, presumably dependent on when low-salinity conditions exist. | Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.2.2. |
| tidewater goby<br>*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, they need fairly still but not stagnant water and high oxygen levels. | **Unlikely.** Although there are historic occurrences in lower Lagunitas Creek, as per CDFW (2022a) the species is now likely extirpated there. | No further actions are recommended. |
| longfin smelt<br>*Spirinchus thaleichthys* | FC, ST | 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. | **Unlikely.** This species is known from Tomales Bay, though apparently spawning in Lagunitas Creek has not been documented; reach of the creek within the Study Area may be too fresh. | No further actions are recommended. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| **INVERTEBRATES** | | | | |
| western bumblebee<br>*Bombus occidentalis* | SC | Formerly common throughout much of western North America; populations from southern British Columbia to central California have nearly disappeared. Occurs in a wide variety of habitat types. Nests are constructed annually in pre-existing cavities, usually those on the ground (e.g. mammal burrows). Many plant species are visited and pollinated. | **Unlikely.** Although there are documented occurrences in CNDDB within 5 miles, this species is considered extirpated from the greater San Francisco Bay Area. | No further actions are recommended. |
| San Bruno elfin butterfly<br>*Callophrys mossii bayensis* | FE | Restricted to the vicinity of San Bruno Mountain, San Mateo County. Colonies are located on in rocky outcrops and cliffs in coastal scrub habitat on steep, north-facing slopes within the fog belt. Species range is tied to the distribution of the larval host plant, *Sedum spathulifolium*. | **No Potential.** Species is currerntly confined to San Mateo County. | No further actions are recommended. |
| monarch butterfly<br>*Danaus plexippus* | FC; winter roosts protected by CDFW | Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (usually eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby. | **Moderate Potential (winter roosting).** While there is no record of monarch roosting within or in proximity to the Study Area, the site provides mature eucalyptus trees that could be support roosting by this species. | A winter roost survey should be performed prior to tree removal; see report section 6.2.2. |

| SPECIES | STATUS* | HABITAT | POTENTIAL FOR OCCURRENCE | RECOMMENDATIONS |
|---|---|---|---|---|
| Mission blue butterfly<br>*Icaricia icarioides missionensis* | FE | Inhabits grasslands and coastal chaparral of the San Francisco peninsula and southern Marin County, but mostly found on San Bruno Mountain. Three larval host plants: *Lupinus albifrons*, *L. variicolor*, and *L. formosus*, of which *L. albifrons* is favored. | **No Potential.** The Study Area does not support the host plants and is outside of this species' known range. | No further actions are recommended. |
| Myrtle's silverspot butterfly<br>*Speyeria zerene myrtleae* | FE | Restricted to the fog belt of northern Marin and southernmost Sonoma County, including the Point Reyes Peninsula; extirpated from coastal San Mateo County. Occurs in coastal prairie, dunes, and grassland. Larval foodplant is typically *Viola adunca*. Adult flight season may range from late June to early September. | **Unlikely.** While the Study Area provides grassland areas, *Viola* (host plant) was not observed there during appropriamtely-timed botanical surveys. The nearest occurrence in CNDDB is located greater than 5 miles to the west on the Point Reyes Peninsula (CDFW 2022a). | No further actions are recommended. |
| California freshwater shrimp<br>*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. Favors shallow pools away from the main stream flow. Winter: undercut banks with exposed roots; summer: leafy branches touching water. | **Present (Lagunitas Creek only).** This species is known from Lagunitas Creek and as per CDFW (2022a), was observed "to Point Reyes Station" in 1988-1989; presence is thus assumed. Local presence may vary seasonally depenent on aquatic conditions. | Lagunitas Creek and directly associated riparian vegetation should be completely avoided; see report section 6.0. |

*** Key to status codes:**

| | |
|---|---|
| FE | Federal Endangered |
| FT | Federal Threatened |
| SE | State Endangered |
| SD | State Delisted |
| ST | State Threatened |
| SSC | Species of Special Concern |
| SSI | Special Status Invertebrate |
| CFP | CDFW Fully Protected |
| BCC | Bird of Conservation Concern |
| WBWG | Western Bat Working Group Medium or High Priority |
| California Rare Plant Rank (CRPR) | |
| Rank 1A | CRPR 1A: Plants presumed extinct in California |
| Rank 1B | CRPR 1B: Plants rare, threatened or endangered in California and elsewhere |
| Rank 2A | CRPR 2A: Plants presumed extirpated in California, but more common elsewhere |
| Rank 2B | CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere |
| Rank 3 | CRPR 3: Plants about which CNPS needs more information (a review list) |
| Rank 4 | CRPR 4: Plants of limited distribution (a watch list) |
| Threat Ranks | |
| 0.1 | Seriously threatened in California |
| 0.2 | Moderately threatened in California |
| 0.3 | Not very threatened in California |

****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 has a high likelihood of occurring and actions to avoid/mitigate impacts are recommended; surveys not conducted.

Assumed Absent. Species is assumed to not be present or utilize the site due to a lack of key habitat components.
Not Observed. Species was not observed during protocol-level surveys.

Appendix D

Representative Photographs

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Photograph 1. Photograph depicting developed/landscaped area including the entry road at left and existing gravel parking area in the Project Area. Photograph taken April 9, 2021.



Photograph 2. Photograph depicting developed/landscaped area consisting of the previously developed USCG housing site. Photograph taken April 9, 2021.



Photograph 3. Photograph depicting low-lying CCC seasonal wetland and Corps seasonal wetland area (aquatic ESHAs) in foreground in southwest portion of Study Area, outside of Project Area. Riparian arroyo willow thicket (aquatic ESHA) seen in the background. Photograph taken January 20, 2021.



Photograph 4. Photograph a representative portion of Lagunitas Creek, an aquatic ESHA, within the Study Area (left bank and riparian are in the Study Area; area across creek outside of Study Area). Photograph taken January 20, 2021.



Photograph 5. Photograph depicting a Corps seasonal wetland, an aquatic ESHA, in the southwestern portion of the Study Area. Photograph taken April 9, 2021.



Photograph 6. Photograph depicting purple needlegrass grassland, a terrestrial ESHA in the northeast portion of the Study Area on a slope above the developed/landscaped area. Photograph taken April 9, 2021.

**IPaC** **U.S. Fish & Wildlife Service**

# IPaC resource list

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

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

## Location

Marin County, California



## Local office

Sacramento Fish And Wildlife Office

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

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

NOT FOR CONSULTATION

# Endangered species

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

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

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

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

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

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

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

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

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

## Mammals

| NAME | STATUS |
|---|---|
| **Salt Marsh Harvest Mouse** Reithrodontomys raviventris<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/613 | Endangered |

## Birds

| NAME | STATUS |
|---|---|
| **California Least Tern** Sterna antillarum browni<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/8104 | Endangered |
| **Hawaiian Petrel** Pterodroma sandwichensis<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/6746 | Endangered |
| **Marbled Murrelet** Brachyramphus marmoratus<br>There is **final** critical habitat for this species.Your location overlaps the critical habitat.<br>https://ecos.fws.gov/ecp/species/4467 | Threatened |

NOT FOR CONSULTATION

**Northern Spotted Owl** Strix occidentalis caurina — Threatened
Wherever found
There is **final** critical habitat for this species.Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/1123

**Short-tailed Albatross** Phoebastria (=Diomedea) albatrus — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/433

**Western Snowy Plover** Charadrius nivosus nivosus — Threatened
There is **final** critical habitat for this species.Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8035

**Yellow-billed Cuckoo** Coccyzus americanus — Threatened
There is **final** critical habitat for this species.Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/3911

## Reptiles

| NAME | STATUS |
|---|---|
| **Green Sea Turtle** Chelonia mydas<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/6199 | Threatened |

## Amphibians

| NAME | STATUS |
|---|---|
| **California Red-legged Frog** Rana draytonii<br>Wherever found<br>There is **final** critical habitat for this species.Your location overlaps the critical habitat.<br>https://ecos.fws.gov/ecp/species/2891 | Threatened |

## Fishes

| NAME | STATUS |
|---|---|
| **Longfin Smelt** Spirinchus thaleichthys<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/9011 | Proposed Endangered |
| **Tidewater Goby** Eucyclogobius newberryi<br>Wherever found<br>There is **final** critical habitat for this species.Your location overlaps the critical habitat.<br>https://ecos.fws.gov/ecp/species/57 | Endangered |

## Insects

| NAME | STATUS |
|---|---|
| **Monarch Butterfly** Danaus plexippus<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/9743 | Candidate |
| **Myrtle's Silverspot Butterfly** Speyeria zerene myrtleae<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/6929 | Endangered |

## Crustaceans

| NAME | STATUS |
|---|---|

NOT FOR CONSULTATION

| NAME | STATUS |
|---|---|
| **California Freshwater Shrimp** Syncaris pacifica<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/7903 | Endangered |

## Flowering Plants

| NAME | STATUS |
|---|---|
| **Baker's Larkspur** Delphinium bakeri<br>Wherever found<br>There is **final** critical habitat for this species.Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/5031 | Endangered |
| **Clover (tidestrom"s) Lupine** Lupinus tidestromii<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/4459 | Endangered |
| **Marin Dwarf-flax** Hesperolinon congestum<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/5363 | Threatened |
| **Robust Spineflower** Chorizanthe robusta var. robusta<br>Wherever found<br>There is **final** critical habitat for this species.Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/9287 | Endangered |
| **Showy Indian Clover** Trifolium amoenum<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/6459 | Endangered |
| **Sonoma Alopecurus** Alopecurus aequalis var. sonomensis<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/557 | Endangered |
| **Sonoma Spineflower** Chorizanthe valida<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/7698 | Endangered |
| **Tiburon Paintbrush** Castilleja affinis ssp. neglecta<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/2687 | Endangered |
| **Yellow Larkspur** Delphinium luteum<br>Wherever found<br>There is **final** critical habitat for this species.Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/3578 | Endangered |

## Critical habitats

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

This location overlaps the critical habitat for the following species:

| NAME | TYPE |
|---|---|
| **California Red-legged Frog** Rana draytonii<br>https://ecos.fws.gov/ecp/species/2891#crithab | Final |

NOT FOR CONSULTATION

| | |
|---|---|
| Marbled Murrelet Brachyramphus marmoratus<br>https://ecos.fws.gov/ecp/species/4467#crithab | Final |
| Tidewater Goby Eucyclogobius newberryi<br>https://ecos.fws.gov/ecp/species/57#crithab | Final |

# Bald & Golden Eagles

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

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitat[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

**There are bald and/or golden eagles in your project area.**

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

| NAME | BREEDING SEASON |
|---|---|
| Bald Eagle Haliaeetus leucocephalus<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds Jan 1 to Aug 31 |
| Golden Eagle Aquila chrysaetos<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1680 | Breeds Jan 1 to Aug 31 |

# Probability of Presence Summary

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

**Probability of Presence(■)**

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

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

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

NOT FOR CONSULTATION

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

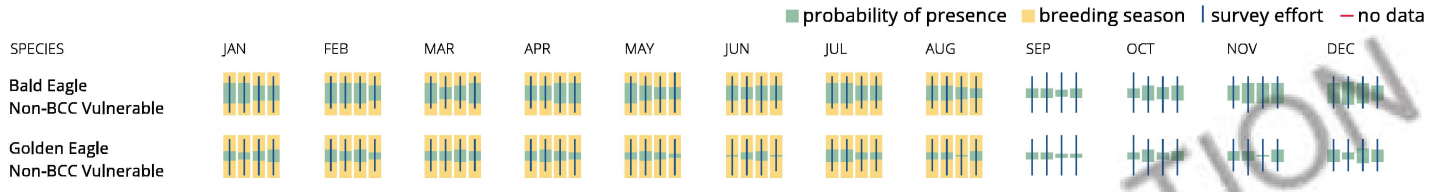
**Breeding Season** (▮)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

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

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




**What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?**

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?**

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

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# Migratory birds

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

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/ documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

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

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

| NAME | BREEDING SEASON |
|---|---|
| **Allen's Hummingbird** *Selasphorus sasin*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9637 | Breeds Feb 1 to Jul 15 |
| **Bald Eagle** *Haliaeetus leucocephalus*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds Jan 1 to Aug 31 |
| **Belding's Savannah Sparrow** *Passerculus sandwichensis beldingi*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/8 | Breeds Apr 1 to Aug 15 |
| **Black Oystercatcher** *Haematopus bachmani*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9591 | Breeds Apr 15 to Oct 31 |
| **Black Scoter** *Melanitta nigra*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds elsewhere |
| **Black Swift** *Cypseloides niger*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8878 | Breeds Jun 15 to Sep 10 |
| **Black Turnstone** *Arenaria melanocephala*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| **Black-footed Albatross** *Phoebastria nigripes*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8033 | Breeds elsewhere |
| **Black-legged Kittiwake** *Rissa tridactyla*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds elsewhere |
| **Black-vented Shearwater** *Puffinus opisthomelas*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| **Brown Pelican** *Pelecanus occidentalis*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. | Breeds Jan 15 to Sep 30 |
| **Bullock's Oriole** *Icterus bullockii*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Mar 21 to Jul 25 |

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**California Gull** Larus californicus — Breeds Mar 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**California Thrasher** Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Cassin's Finch** Carpodacus cassinii — Breeds May 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9462

**Clark's Grebe** Aechmophorus clarkii — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Common Loon** gavia immer — Breeds Apr 15 to Oct 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/4464

**Common Murre** Uria aalge — Breeds Apr 15 to Aug 15
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Common Yellowthroat** Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

**Double-crested Cormorant** phalacrocorax auritus — Breeds Apr 20 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/3478

**Golden Eagle** Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

**Lawrence's Goldfinch** Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

**Long-eared Owl** asio otus — Breeds Mar 1 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3631

**Long-tailed Duck** Clangula hyemalis — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/7238

**Marbled Godwit** Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

**Nuttall's Woodpecker** Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

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**Oak Titmouse** Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

**Olive-sided Flycatcher** Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

**Pink-footed Shearwater** Puffinus creatopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

**Pomarine Jaeger** Stercorarius pomarinus — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Red Phalarope** Phalaropus fulicarius — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Red-breasted Merganser** Mergus serrator — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Red-necked Phalarope** Phalaropus lobatus — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Red-throated Loon** Gavia stellata — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Ring-billed Gull** Larus delawarensis — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Short-billed Dowitcher** Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

**Surf Scoter** Melanitta perspicillata — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

**Tricolored Blackbird** Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

**Western Grebe** aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

**White-winged Scoter** Melanitta fusca — Breeds elsewhere
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

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Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Yellow Rail Coturnicops noveboracensis — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9476

# Probability of Presence Summary

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

**Probability of Presence(■)**

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

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

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

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

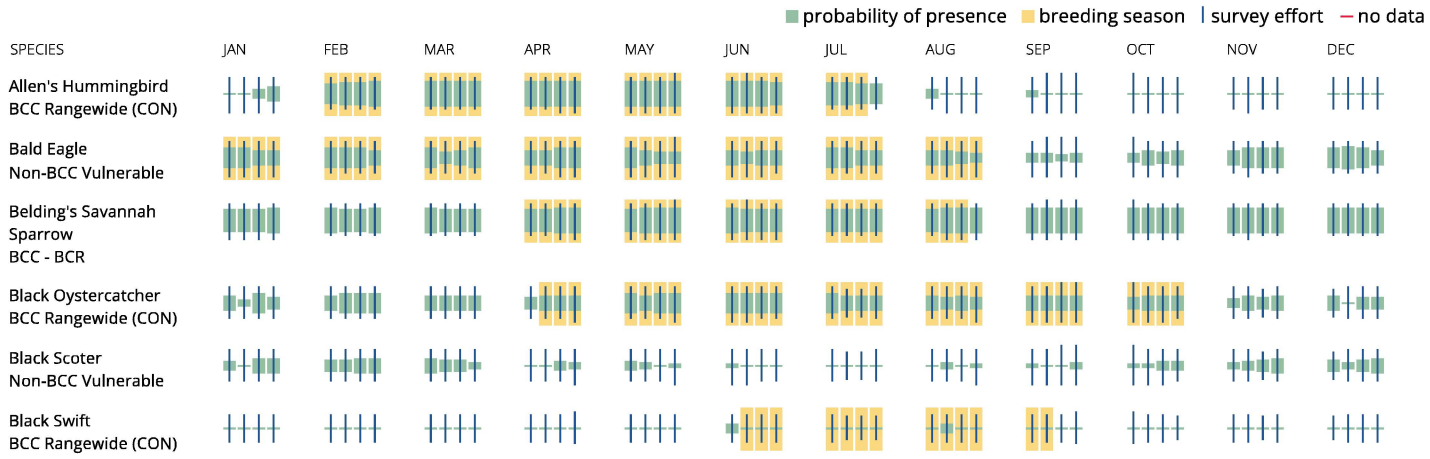
**Breeding Season (■)**
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

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

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

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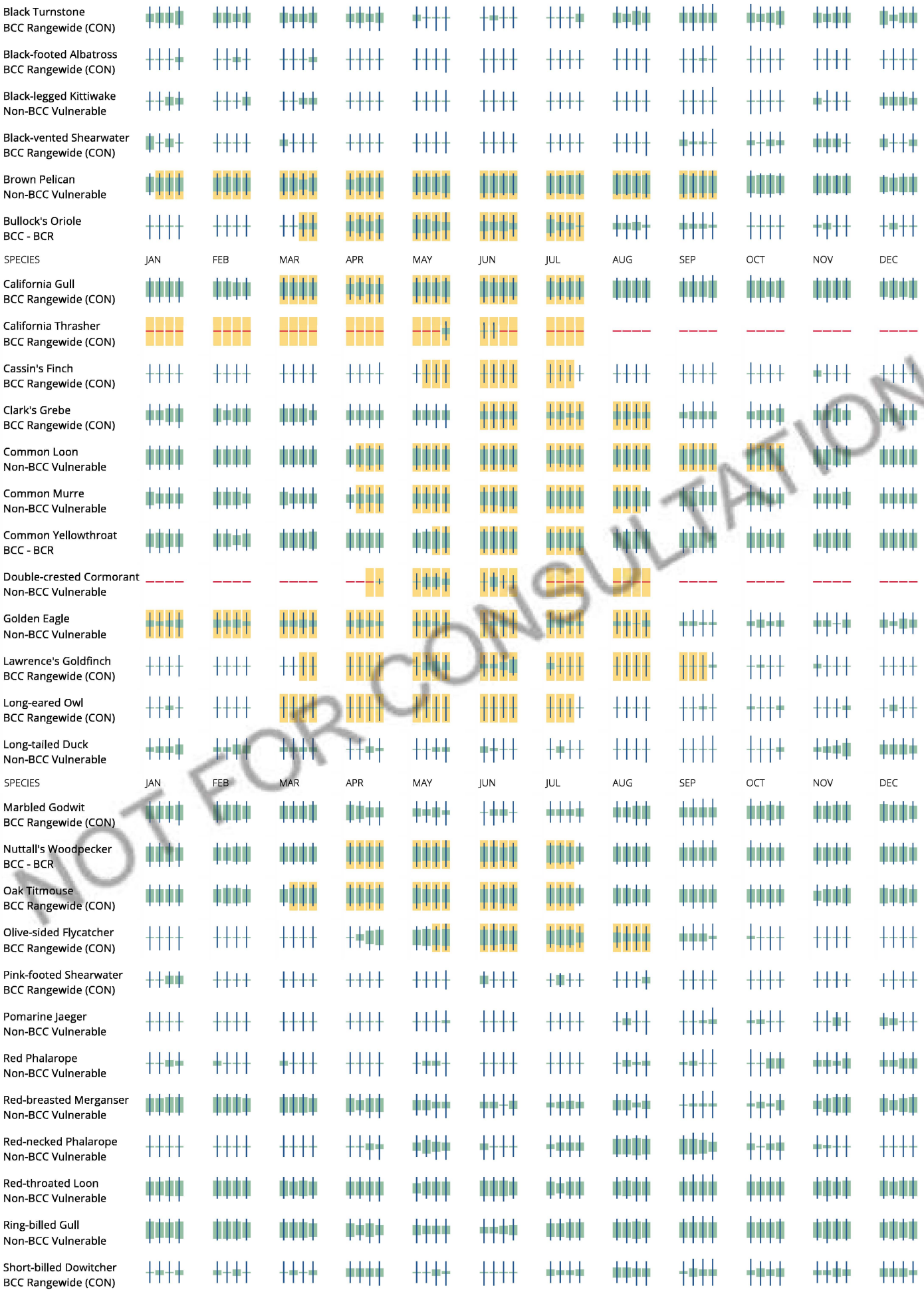


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**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

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

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

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

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

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit theRapid Avian Information Locator (RAIL) Tool

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

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

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

**How do I know if a bird is breeding, wintering or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

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

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

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

**Details about birds that are potentially affected by offshore projects**

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

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

**What if I have eagles on my list?**

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

**Proper Interpretation and Use of Your Migratory Bird Report**

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

# Facilities

## National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

# Wetlands in the National Wetlands Inventory (NWI)

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

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

### Wetland information is not available at this time

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

**Data limitations**

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

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

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

**Data exclusions**

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

**Data precautions**

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

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# California Native Plant Society

## Plant Species with the Potential to Occur within the Project Area

| Common Name | Latin Name |
|---|---|
| **Under Redwoods** | |
| Showy Milkweed | *Asclepias speciosa* |
| Deer Fern | *Blechnum (Struthiopteris) spicant* |
| Low blue blossom | *Ceanothus thyrsiflorus repens* |
| Red twig dogwood | *Comus stolonifera* |
| Coastal wood fern | *Dryopteris arguta* |
| Coast strawberry | *Frageria chiloensis or vesca* |
| Cherry Moneyflower | *Mimulus aurantiacus 'cherry'* |
| Seep monkeyflower | *Mimulus guttatus* |
| Thimbleberry | *Rubus parviflorus* |
| Western azalea | *Rhododendron occidentale* |
| Yerba Buena | *Satureja douglasii* |
| **Under Pines/Oaks/Cypress** | |
| Yarrow | *Achillea millefolium* |
| Litte Sur Manzanita | *Arctostaphylos edmundsii 'Little Sur'* |
| Carmel Sur Manzanita | *Arctostaphylos edmundsii 'Carmel Sur'* |
| Leafy reed grass | *Calamagrostis foliosia* |
| Heuchera varieties | *Heuchera spp.* |
| Canyon Prince Wildrye | *Leymus condensatus 'Canyon Prince'* |
| Oregon Grape | *Mahonia aquifolium* |
| California Holly Grape | *Mahonia pinnata* |
| Deer Grass | *Muhlenbergia rigens* |
| Western sword fern | *Polystichum munitum* |
| Creeping sage | *Salvia sonomensis* |

| Common Name | Latin Name |
|---|---|
| Hummingbird sage | *Salvia spathacea* |
| **No Mow Turf** | |
| Delta Blue Grass Native Mow Free | *Festuca idahoensis, Festuca rubra, Festuca occidentalis* |
| **Riparian Edge** | |
| Service-berry | *Amelanchier alnifolia* |
| Dwarf coyote bush | *Baccharis pilularis* |
| Red twig dogwood | *Cornus stolonifera* |
| Ocean Spray | *Holodiscus discolor* |
| Cherry Moneyflower | *Mimulus aurantiacus 'cherry'* |
| Western azalea | *Rhododendron occidentale* |
| Thimbleberry | *Rubus parviflorus* |
| California huckleberry | *Vaccinium ovatum* |
| Western chain fern | *Woodwardia fimbriata* |
| **Under Removed Eucalyptus** | |
| Dwarf coyote bush | *Baccharis pilularis* |
| Leafy reed grass | *Calamagrostis foliosia* |
| Seaside daisy | *Erigeron glaucus* |
| Toyon | *Heteromeles arbutifolia* |
| Deer Grass | *Muhlenbergia rigens* |
| Coffeeberry | *Rhamnus californica (Frangula cal.)* |
| Purple Sage | *Salvia leucophylla* |
| **Stormwater Plants** | |
| Yarrow | *Achillea millefolium* |
| Cape Rush | *Chondropetalum tectorum* |
| Common Rush | *Juncus effusus* |
| Brown Headed Rush | *Juncus phaocephalus* |
| Canyon Prince Wildrye | *Leymus condensatus 'Canyon Prince'* |
| **Native Erosion Control Seed Mix** | |
| California Brome | *Bromus carinatus* |
| Blue Wildrye | *Elymus glaucus* |

| Common Name | Latin Name |
|---|---|
| Three Weeks Fescue | *Festuca microstachys* |
| Purple needle grass | *Nassella pulchra* |
| Tomcat Clover | *Trifolium willdenovii* |
| **Irrigated Wildflowers and Grasses** | |
| Yarrow | *Achillea millefolium* |
| Red fuscue | *Festuca rubra* |
| California barley | *Hordum californicum* |
| Meadow barley | *Hordeum brachyantherum* |
| Goodfields | *Lasthenia glabrata* |
| Native erosion control seed mix | *Phacelia campanularia* |
| Creeping sage | *Salvia sonomensis* |
| Blue-Eyed Grass | *Sisyrinchium bellum* |
| **Grasses** | |
| Purple Three Awn | *Artistida purpurea* |
| Blue Grama | *Bouteloua gracilis* |
| Leafy red grass | *Calamagrostis foliosia* |
| Berkeley Sedge | *Carex tumulicola* |
| Tufted Hair Grass | *Deschampsia cespitosa* |
| California Fescue | *Festuca idahoensis* |
| Deer Grass | *Muhlenbergia rigens* |
| **Groundcovers** | |
| Pacific Mist Manzanita | *Arctostaphylos 'Pacific Mist'* |
| California honeysuckle | *Lonicera hispidula* |

# APPENDIX C

# CALEEMOD

# USCG Pt Reyes Housing Detailed Report

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# 1. Basic Project Information

## 1.1. Basic Project Information

| Data Field | Value |
|---|---|
| Project Name | USCG Pt Reyes Housing |
| Construction Start Date | 1/1/2024 |
| Operational Year | 2026 |
| Lead Agency | Marin County |
| Land Use Scale | Project/site |
| Analysis Level for Defaults | County |
| Windspeed (m/s) | 2.20 |
| Precipitation (days) | 49.8 |
| Location | 38.06821086838124, -122.8002538807811 |
| County | Marin |
| City | Unincorporated |
| Air District | Bay Area AQMD |
| Air Basin | San Francisco Bay Area |
| TAZ | 906 |
| EDFZ | 2 |
| Electric Utility | Pacific Gas & Electric Company |
| Gas Utility | Pacific Gas & Electric |
| App Version | 2022.1.1.20 |

## 1.2. Land Use Types

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

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Condo/Townhouse | 54.0 | Dwelling Unit | 3.38 | 62,452 | 0.00 | 307,000 | 130 | Residential |
| Parking Lot | 119 | Space | 1.07 | 0.00 | 0.00 | 0.00 | — | Parking Areas |
| General Light Industry | 26.0 | 1000sqft | 0.60 | 674 | 0.00 | 0.00 | — | WWTP |

### 1.3. User-Selected Emission Reduction Measures by Emissions Sector

| Sector | # | Measure Title |
|---|---|---|
| Transportation | T-4 | Integrate A ordable and Below Market Rate Housing |
| Transportation | T-14* | Provide Electric Vehicle Charging Infrastructure |
| Transportation | T-34* | Provide Bike Parking |
| Energy | E-10-B | Establish Onsite Renewable Energy Systems: Solar Power |
| Energy | E-24* | Provide Battery Storage |
| Water | W-1 | Use Reclaimed Non-Potable Water |

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

## 2. Emissions Summary

### 2.1. Construction Emissions Compared Against Thresholds

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

| Un/Mit. | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.37 | 7.42 | 13.8 | 24.7 | 0.03 | 0.50 | 2.42 | 2.93 | 0.46 | 0.51 | 0.97 | — | 5,111 | 5,111 | 0.26 | 0.23 | 9.58 | 5,197 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 3.00 | 8.28 | 17.1 | 30.5 | 0.03 | 0.59 | 3.26 | 3.86 | 0.54 | 0.69 | 1.24 | — | 6,307 | 6,307 | 0.33 | 0.29 | 0.33 | 6,403 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.83 | 2.68 | 4.18 | 8.51 | 0.01 | 0.13 | 1.01 | 1.14 | 0.12 | 0.23 | 0.34 | — | 1,799 | 1,799 | 0.08 | 0.08 | 1.95 | 1,825 |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.15 | 0.49 | 0.76 | 1.55 | < 0.005 | 0.02 | 0.18 | 0.21 | 0.02 | 0.04 | 0.06 | — | 298 | 298 | 0.01 | 0.01 | 0.32 | 302 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 2.37 | 1.95 | 13.8 | 24.7 | 0.03 | 0.50 | 2.42 | 2.93 | 0.46 | 0.51 | 0.97 | — | 5,111 | 5,111 | 0.26 | 0.23 | 9.58 | 5,197 |
| 2025 | 0.65 | 7.42 | 1.47 | 6.20 | < 0.005 | 0.04 | 0.99 | 1.03 | 0.03 | 0.23 | 0.27 | — | 1,213 | 1,213 | 0.03 | 0.04 | 4.19 | 1,230 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.00 | 8.28 | 17.1 | 30.5 | 0.03 | 0.59 | 3.26 | 3.86 | 0.54 | 0.69 | 1.24 | — | 6,307 | 6,307 | 0.33 | 0.29 | 0.33 | 6,403 |
| 2025 | 1.38 | 8.21 | 4.77 | 13.9 | 0.01 | 0.17 | 1.98 | 2.15 | 0.16 | 0.47 | 0.62 | — | 2,722 | 2,722 | 0.09 | 0.09 | 0.22 | 2,751 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.83 | 0.76 | 4.18 | 8.51 | 0.01 | 0.13 | 1.01 | 1.14 | 0.12 | 0.23 | 0.34 | — | 1,799 | 1,799 | 0.08 | 0.08 | 1.95 | 1,825 |
| 2025 | 0.26 | 2.68 | 0.71 | 2.43 | < 0.005 | 0.02 | 0.39 | 0.41 | 0.02 | 0.09 | 0.11 | — | 495 | 495 | 0.01 | 0.02 | 0.74 | 502 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.15 | 0.14 | 0.76 | 1.55 | < 0.005 | 0.02 | 0.18 | 0.21 | 0.02 | 0.04 | 0.06 | — | 298 | 298 | 0.01 | 0.01 | 0.32 | 302 |
| 2025 | 0.05 | 0.49 | 0.13 | 0.44 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 82.0 | 82.0 | < 0.005 | < 0.005 | 0.12 | 83.0 |

## 2.3. Construction Emissions by Year, Mitigated

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

| Year | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily - Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 2.37 | 1.95 | 13.8 | 24.7 | 0.03 | 0.50 | 2.42 | 2.93 | 0.46 | 0.51 | 0.97 | — | 5,111 | 5,111 | 0.26 | 0.23 | 9.58 | 5,197 |
| 2025 | 0.65 | 7.42 | 1.47 | 6.20 | < 0.005 | 0.04 | 0.99 | 1.03 | 0.03 | 0.23 | 0.27 | — | 1,213 | 1,213 | 0.03 | 0.04 | 4.19 | 1,230 |
| Daily - Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 3.00 | 8.28 | 17.1 | 30.5 | 0.03 | 0.59 | 3.26 | 3.86 | 0.54 | 0.69 | 1.24 | — | 6,307 | 6,307 | 0.33 | 0.29 | 0.33 | 6,403 |
| 2025 | 1.38 | 8.21 | 4.77 | 13.9 | 0.01 | 0.17 | 1.98 | 2.15 | 0.16 | 0.47 | 0.62 | — | 2,722 | 2,722 | 0.09 | 0.09 | 0.22 | 2,751 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.83 | 0.76 | 4.18 | 8.51 | 0.01 | 0.13 | 1.01 | 1.14 | 0.12 | 0.23 | 0.34 | — | 1,799 | 1,799 | 0.08 | 0.08 | 1.95 | 1,825 |
| 2025 | 0.26 | 2.68 | 0.71 | 2.43 | < 0.005 | 0.02 | 0.39 | 0.41 | 0.02 | 0.09 | 0.11 | — | 495 | 495 | 0.01 | 0.02 | 0.74 | 502 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| 2024 | 0.15 | 0.14 | 0.76 | 1.55 | < 0.005 | 0.02 | 0.18 | 0.21 | 0.02 | 0.04 | 0.06 | — | 298 | 298 | 0.01 | 0.01 | 0.32 | 302 |
| 2025 | 0.05 | 0.49 | 0.13 | 0.44 | < 0.005 | < 0.005 | 0.07 | 0.08 | < 0.005 | 0.02 | 0.02 | — | 82.0 | 82.0 | < 0.005 | < 0.005 | 0.12 | 83.0 |

## 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. | 2.16 | 3.59 | 1.44 | 18.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 4,149 | 4,179 | 3.19 | 0.15 | 14.9 | 4,317 |
| Mit. | 2.16 | 3.59 | 1.44 | 18.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 3,997 | 4,027 | 3.16 | 0.14 | 14.9 | 4,164 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | 4% | 4% | 1% | 2% | — | 4% |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 1.82 | 3.26 | 1.65 | 14.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 3,921 | 3,951 | 3.20 | 0.16 | 0.82 | 4,080 |
| Mit. | 1.82 | 3.26 | 1.65 | 14.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 3,769 | 3,799 | 3.18 | 0.16 | 0.82 | 3,927 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | 4% | 4% | 1% | 2% | — | 4% |
| Average Daily (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 2.20 | 3.60 | 2.55 | 15.4 | 0.04 | 0.09 | 3.20 | 3.29 | 0.08 | 0.81 | 0.90 | 30.0 | 3,753 | 3,783 | 3.19 | 0.14 | 6.03 | 3,911 |
| Mit. | 2.20 | 3.60 | 2.55 | 15.4 | 0.04 | 0.09 | 3.20 | 3.29 | 0.08 | 0.81 | 0.90 | 30.0 | 3,601 | 3,631 | 3.16 | 0.14 | 6.03 | 3,758 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | 4% | 4% | 1% | 2% | — | 4% |
| Annual (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Unmit. | 0.40 | 0.66 | 0.47 | 2.81 | 0.01 | 0.02 | 0.58 | 0.60 | 0.02 | 0.15 | 0.16 | 4.97 | 621 | 626 | 0.53 | 0.02 | 1.00 | 648 |
| Mit. | 0.40 | 0.66 | 0.47 | 2.81 | 0.01 | 0.02 | 0.58 | 0.60 | 0.02 | 0.15 | 0.16 | 4.97 | 596 | 601 | 0.52 | 0.02 | 1.00 | 622 |
| % Reduced | — | — | — | — | — | — | — | — | — | — | — | — | 4% | 4% | 1% | 2% | — | 4% |

## 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 | 1.87 | 1.71 | 1.38 | 15.7 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,971 | 3,971 | 0.15 | 0.14 | 14.4 | 4,030 |
| Area | 0.29 | 1.88 | 0.03 | 3.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 8.31 | 8.31 | < 0.005 | < 0.005 | — | 8.34 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 152 | 152 | 0.02 | < 0.005 | — | 153 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Waste | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Stationary | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vegetation | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Total | 2.16 | 3.59 | 1.44 | 18.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 4,149 | 4,179 | 3.19 | 0.15 | 14.9 | 4,317 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 1.82 | 1.66 | 1.63 | 14.8 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,752 | 3,752 | 0.17 | 0.15 | 0.37 | 3,801 |
| Area | 0.00 | 1.60 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 152 | 152 | 0.02 | < 0.005 | — | 153 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Stationary | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vegetation | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Total | 1.82 | 3.26 | 1.65 | 14.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 3,921 | 3,951 | 3.20 | 0.16 | 0.82 | 4,080 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 1.61 | 1.46 | 1.38 | 12.9 | 0.03 | 0.02 | 3.19 | 3.21 | 0.02 | 0.81 | 0.83 | — | 3,373 | 3,373 | 0.14 | 0.13 | 5.58 | 3,421 |
| Area | 0.14 | 1.74 | 0.01 | 1.52 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 4.10 | 4.10 | < 0.005 | < 0.005 | — | 4.11 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 152 | 152 | 0.02 | < 0.005 | — | 153 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stationary | 0.44 | 0.40 | 1.13 | 1.03 | < 0.005 | 0.06 | 0.00 | 0.06 | 0.06 | 0.00 | 0.06 | 0.00 | 207 | 207 | 0.01 | < 0.005 | 0.00 | 208 |
| Vegetation | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Total | 2.20 | 3.60 | 2.55 | 15.4 | 0.04 | 0.09 | 3.20 | 3.29 | 0.08 | 0.81 | 0.90 | 30.0 | 3,753 | 3,783 | 3.19 | 0.14 | 6.03 | 3,911 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.29 | 0.27 | 0.25 | 2.35 | 0.01 | < 0.005 | 0.58 | 0.59 | < 0.005 | 0.15 | 0.15 | — | 558 | 558 | 0.02 | 0.02 | 0.92 | 566 |
| Area | 0.03 | 0.32 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.68 | 0.68 | < 0.005 | < 0.005 | — | 0.68 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 25.1 | 25.1 | < 0.005 | < 0.005 | — | 25.4 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 0.52 | 2.13 | 2.65 | 0.05 | < 0.005 | — | 4.37 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 4.46 | 0.00 | 4.46 | 0.45 | 0.00 | — | 15.6 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.07 | 0.07 |
| Stationary | 0.08 | 0.07 | 0.21 | 0.19 | < 0.005 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 | 34.3 | 34.3 | < 0.005 | < 0.005 | 0.00 | 34.4 |
| Vegetation | — | < 0.005 | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.81 | 0.81 | — | — | — | 0.81 |
| Total | 0.40 | 0.66 | 0.47 | 2.81 | 0.01 | 0.02 | 0.58 | 0.60 | 0.02 | 0.15 | 0.16 | 4.97 | 621 | 626 | 0.53 | 0.02 | 1.00 | 648 |

## 2.6. Operations Emissions by Sector, Mitigated

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 | 1.87 | 1.71 | 1.38 | 15.7 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,971 | 3,971 | 0.15 | 0.14 | 14.4 | 4,030 |
| Area | 0.29 | 1.88 | 0.03 | 3.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 8.31 | 8.31 | < 0.005 | < 0.005 | — | 8.34 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Stationary | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vegetation | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Total | 2.16 | 3.59 | 1.44 | 18.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 3,997 | 4,027 | 3.16 | 0.14 | 14.9 | 4,164 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 1.82 | 1.66 | 1.63 | 14.8 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,752 | 3,752 | 0.17 | 0.15 | 0.37 | 3,801 |
| Area | 0.00 | 1.60 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Stationary | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Vegetation | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Total | 1.82 | 3.26 | 1.65 | 14.8 | 0.04 | 0.04 | 3.69 | 3.73 | 0.03 | 0.93 | 0.96 | 30.0 | 3,769 | 3,799 | 3.18 | 0.16 | 0.82 | 3,927 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 1.61 | 1.46 | 1.38 | 12.9 | 0.03 | 0.02 | 3.19 | 3.21 | 0.02 | 0.81 | 0.83 | — | 3,373 | 3,373 | 0.14 | 0.13 | 5.58 | 3,421 |
| Area | 0.14 | 1.74 | 0.01 | 1.52 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 4.10 | 4.10 | < 0.005 | < 0.005 | — | 4.11 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Stationary | 0.44 | 0.40 | 1.13 | 1.03 | < 0.005 | 0.06 | 0.00 | 0.06 | 0.06 | 0.00 | 0.06 | 0.00 | 207 | 207 | 0.01 | < 0.005 | 0.00 | 208 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vegetatio | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Total | 2.20 | 3.60 | 2.55 | 15.4 | 0.04 | 0.09 | 3.20 | 3.29 | 0.08 | 0.81 | 0.90 | 30.0 | 3,601 | 3,631 | 3.16 | 0.14 | 6.03 | 3,758 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Mobile | 0.29 | 0.27 | 0.25 | 2.35 | 0.01 | < 0.005 | 0.58 | 0.59 | < 0.005 | 0.15 | 0.15 | — | 558 | 558 | 0.02 | 0.02 | 0.92 | 566 |
| Area | 0.03 | 0.32 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.68 | 0.68 | < 0.005 | < 0.005 | — | 0.68 |
| Energy | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.01 | 0.01 | < 0.005 | < 0.005 | — | 0.01 |
| Water | — | — | — | — | — | — | — | — | — | — | — | 0.52 | 2.07 | 2.59 | 0.05 | < 0.005 | — | 4.31 |
| Waste | — | — | — | — | — | — | — | — | — | — | — | 4.46 | 0.00 | 4.46 | 0.45 | 0.00 | — | 15.6 |
| Refrig. | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.07 | 0.07 |
| Stationar y | 0.08 | 0.07 | 0.21 | 0.19 | < 0.005 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 | 34.3 | 34.3 | < 0.005 | < 0.005 | 0.00 | 34.4 |
| Vegetatio n | — | < 0.005 | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.81 | 0.81 | — | — | — | 0.81 |
| Total | 0.40 | 0.66 | 0.47 | 2.81 | 0.01 | 0.02 | 0.58 | 0.60 | 0.02 | 0.15 | 0.16 | 4.97 | 596 | 601 | 0.52 | 0.02 | 1.00 | 622 |

# 3. Construction Emissions Details

## 3.1. Demolition (2024) - 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 | 0.32 | 0.27 | 2.58 | 3.53 | < 0.005 | 0.08 | — | 0.08 | 0.08 | — | 0.08 | — | 528 | 528 | 0.02 | < 0.005 | — | 530 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Demolition | — | — | — | — | — | — | 0.15 | 0.15 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.16 | 0.21 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 31.8 | 31.8 | < 0.005 | < 0.005 | — | 31.9 |
| 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 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 5.27 | 5.27 | < 0.005 | < 0.005 | — | 5.29 |
| 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 | 0.32 | 0.29 | 0.28 | 3.02 | 0.00 | 0.00 | 0.66 | 0.66 | 0.00 | 0.16 | 0.16 | — | 656 | 656 | 0.02 | 0.03 | 0.08 | 665 |
| 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 | 0.11 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 131 | 131 | 0.02 | 0.02 | 0.01 | 137 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.18 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 39.7 | 39.7 | < 0.005 | < 0.005 | 0.08 | 40.3 |
| 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 | — | 7.88 | 7.88 | < 0.005 | < 0.005 | 0.01 | 8.29 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.57 | 6.57 | < 0.005 | < 0.005 | 0.01 | 6.67 |
| 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 | — | 1.30 | 1.30 | < 0.005 | < 0.005 | < 0.005 | 1.37 |

## 3.2. Demolition (2024) - Mitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.32 | 0.27 | 2.58 | 3.53 | < 0.005 | 0.08 | — | 0.08 | 0.08 | — | 0.08 | — | 528 | 528 | 0.02 | < 0.005 | — | 530 |
| Demolition | — | — | — | — | — | — | 0.15 | 0.15 | — | 0.02 | 0.02 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.16 | 0.21 | < 0.005 | 0.01 | — | 0.01 | < 0.005 | — | < 0.005 | — | 31.8 | 31.8 | < 0.005 | < 0.005 | — | 31.9 |
| 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 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 5.27 | 5.27 | < 0.005 | < 0.005 | — | 5.29 |
| 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 | 0.32 | 0.29 | 0.28 | 3.02 | 0.00 | 0.00 | 0.66 | 0.66 | 0.00 | 0.16 | 0.16 | — | 656 | 656 | 0.02 | 0.03 | 0.08 | 665 |
| 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 | 0.11 | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 131 | 131 | 0.02 | 0.02 | 0.01 | 137 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.18 | 0.00 | 0.00 | 0.04 | 0.04 | 0.00 | 0.01 | 0.01 | — | 39.7 | 39.7 | < 0.005 | < 0.005 | 0.08 | 40.3 |
| 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 | — | 7.88 | 7.88 | < 0.005 | < 0.005 | 0.01 | 8.29 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 6.57 | 6.57 | < 0.005 | < 0.005 | 0.01 | 6.67 |
| 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 | — | 1.30 | 1.30 | < 0.005 | < 0.005 | < 0.005 | 1.37 |

## 3.3. Grading (2024) - Unmitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.20 | 1.01 | 9.58 | 12.9 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 1,967 | 1,967 | 0.08 | 0.02 | — | 1,974 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.53 | 0.53 | — | 0.06 | 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 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.20 | 1.01 | 9.58 | 12.9 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 1,967 | 1,967 | 0.08 | 0.02 | — | 1,974 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.53 | 0.53 | — | 0.06 | 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.22 | 0.18 | 1.73 | 2.34 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 356 | 356 | 0.01 | < 0.005 | — | 357 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.10 | 0.10 | — | 0.01 | 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 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.32 | 0.43 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 58.9 | 58.9 | < 0.005 | < 0.005 | — | 59.1 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dust From Material Movemen: | — | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.33 | 0.30 | 0.22 | 3.37 | 0.00 | 0.00 | 0.66 | 0.66 | 0.00 | 0.16 | 0.16 | — | 704 | 704 | 0.01 | 0.03 | 3.04 | 715 |
| 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 | 0.14 | 0.02 | 1.33 | 0.75 | 0.01 | 0.02 | 0.22 | 0.24 | 0.01 | 0.06 | 0.07 | — | 881 | 881 | 0.12 | 0.14 | 1.83 | 928 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.32 | 0.29 | 0.28 | 3.02 | 0.00 | 0.00 | 0.66 | 0.66 | 0.00 | 0.16 | 0.16 | — | 656 | 656 | 0.02 | 0.03 | 0.08 | 665 |
| 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 | 0.14 | 0.02 | 1.40 | 0.75 | 0.01 | 0.02 | 0.22 | 0.24 | 0.01 | 0.06 | 0.07 | — | 881 | 881 | 0.12 | 0.14 | 0.05 | 926 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.53 | 0.00 | 0.00 | 0.12 | 0.12 | 0.00 | 0.03 | 0.03 | — | 119 | 119 | < 0.005 | 0.01 | 0.24 | 121 |
| 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 | < 0.005 | 0.25 | 0.14 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 159 | 159 | 0.02 | 0.03 | 0.14 | 168 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.10 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 19.7 | 19.7 | < 0.005 | < 0.005 | 0.04 | 20.0 |
| 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 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 26.4 | 26.4 | < 0.005 | < 0.005 | 0.02 | 27.7 |

## 3.4. Grading (2024) - Mitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.20 | 1.01 | 9.58 | 12.9 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 1,967 | 1,967 | 0.08 | 0.02 | — | 1,974 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.53 | 0.53 | — | 0.06 | 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 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 1.20 | 1.01 | 9.58 | 12.9 | 0.02 | 0.43 | — | 0.43 | 0.40 | — | 0.40 | — | 1,967 | 1,967 | 0.08 | 0.02 | — | 1,974 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.53 | 0.53 | — | 0.06 | 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 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.22 | 0.18 | 1.73 | 2.34 | < 0.005 | 0.08 | — | 0.08 | 0.07 | — | 0.07 | — | 356 | 356 | 0.01 | < 0.005 | — | 357 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.10 | 0.10 | — | 0.01 | 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 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.04 | 0.03 | 0.32 | 0.43 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 58.9 | 58.9 | < 0.005 | < 0.005 | — | 59.1 |
| Dust From Material Movemen | — | — | — | — | — | — | 0.02 | 0.02 | — | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.33 | 0.30 | 0.22 | 3.37 | 0.00 | 0.00 | 0.66 | 0.66 | 0.00 | 0.16 | 0.16 | — | 704 | 704 | 0.01 | 0.03 | 3.04 | 715 |
| 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 | 0.14 | 0.02 | 1.33 | 0.75 | 0.01 | 0.02 | 0.22 | 0.24 | 0.01 | 0.06 | 0.07 | — | 881 | 881 | 0.12 | 0.14 | 1.83 | 928 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.32 | 0.29 | 0.28 | 3.02 | 0.00 | 0.00 | 0.66 | 0.66 | 0.00 | 0.16 | 0.16 | — | 656 | 656 | 0.02 | 0.03 | 0.08 | 665 |
| 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 | 0.14 | 0.02 | 1.40 | 0.75 | 0.01 | 0.02 | 0.22 | 0.24 | 0.01 | 0.06 | 0.07 | — | 881 | 881 | 0.12 | 0.14 | 0.05 | 926 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.05 | 0.05 | 0.53 | 0.00 | 0.00 | 0.12 | 0.12 | 0.00 | 0.03 | 0.03 | — | 119 | 119 | < 0.005 | 0.01 | 0.24 | 121 |
| 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 | < 0.005 | 0.25 | 0.14 | < 0.005 | < 0.005 | 0.04 | 0.04 | < 0.005 | 0.01 | 0.01 | — | 159 | 159 | 0.02 | 0.03 | 0.14 | 168 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.01 | 0.01 | 0.01 | 0.10 | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | < 0.005 | < 0.005 | — | 19.7 | 19.7 | < 0.005 | < 0.005 | 0.04 | 20.0 |
| 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 | 0.02 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 26.4 | 26.4 | < 0.005 | < 0.005 | 0.02 | 27.7 |

## 3.5. Building Construction (2024) - Unmitigated

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

| Location | 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 | 0.16 | 2.25 | 2.61 | < 0.005 | 0.06 | — | 0.06 | 0.05 | — | 0.05 | — | 448 | 448 | 0.02 | < 0.005 | — | 449 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.16 | 2.25 | 2.61 | < 0.005 | 0.06 | — | 0.06 | 0.05 | — | 0.05 | — | 448 | 448 | 0.02 | < 0.005 | — | 449 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 1.60 | 1.86 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 319 | 319 | 0.01 | < 0.005 | — | 320 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.29 | 0.34 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 52.8 | 52.8 | < 0.005 | < 0.005 | — | 53.0 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.49 | 0.45 | 0.33 | 5.05 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 1,055 | 1,055 | 0.02 | 0.04 | 4.56 | 1,072 |
| Vendor | 0.01 | < 0.005 | 0.08 | 0.05 | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 57.3 | 57.3 | 0.01 | 0.01 | 0.14 | 60.0 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.44 | 0.41 | 4.52 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 984 | 984 | 0.03 | 0.04 | 0.12 | 997 |
| Vendor | 0.01 | < 0.005 | 0.09 | 0.05 | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 57.3 | 57.3 | 0.01 | 0.01 | < 0.005 | 59.9 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.34 | 0.31 | 0.27 | 3.11 | 0.00 | 0.00 | 0.68 | 0.68 | 0.00 | 0.16 | 0.16 | — | 704 | 704 | 0.02 | 0.03 | 1.40 | 714 |
| Vendor | 0.01 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 40.8 | 40.8 | < 0.005 | 0.01 | 0.04 | 42.7 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.06 | 0.05 | 0.57 | 0.00 | 0.00 | 0.12 | 0.12 | 0.00 | 0.03 | 0.03 | — | 117 | 117 | < 0.005 | < 0.005 | 0.23 | 118 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.76 | 6.76 | < 0.005 | < 0.005 | 0.01 | 7.07 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.6. Building Construction (2024) - Mitigated

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

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

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Off-Road Equipment | 0.20 | 0.16 | 2.25 | 2.61 | < 0.005 | 0.06 | — | 0.06 | 0.05 | — | 0.05 | — | 448 | 448 | 0.02 | < 0.005 | — | 449 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.16 | 2.25 | 2.61 | < 0.005 | 0.06 | — | 0.06 | 0.05 | — | 0.05 | — | 448 | 448 | 0.02 | < 0.005 | — | 449 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 1.60 | 1.86 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 319 | 319 | 0.01 | < 0.005 | — | 320 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.29 | 0.34 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 52.8 | 52.8 | < 0.005 | < 0.005 | — | 53.0 |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.49 | 0.45 | 0.33 | 5.05 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 1,055 | 1,055 | 0.02 | 0.04 | 4.56 | 1,072 |
| Vendor | 0.01 | < 0.005 | 0.08 | 0.05 | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 57.3 | 57.3 | 0.01 | 0.01 | 0.14 | 60.0 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.44 | 0.41 | 4.52 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 984 | 984 | 0.03 | 0.04 | 0.12 | 997 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.01 | < 0.005 | 0.09 | 0.05 | < 0.005 | < 0.005 | 0.01 | 0.02 | < 0.005 | < 0.005 | < 0.005 | — | 57.3 | 57.3 | 0.01 | 0.01 | < 0.005 | 59.9 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.34 | 0.31 | 0.27 | 3.11 | 0.00 | 0.00 | 0.68 | 0.68 | 0.00 | 0.16 | 0.16 | — | 704 | 704 | 0.02 | 0.03 | 1.40 | 714 |
| Vendor | 0.01 | < 0.005 | 0.06 | 0.03 | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | 40.8 | 40.8 | < 0.005 | 0.01 | 0.04 | 42.7 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.06 | 0.06 | 0.05 | 0.57 | 0.00 | 0.00 | 0.12 | 0.12 | 0.00 | 0.03 | 0.03 | — | 117 | 117 | < 0.005 | < 0.005 | 0.23 | 118 |
| Vendor | < 0.005 | < 0.005 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 6.76 | 6.76 | < 0.005 | < 0.005 | 0.01 | 7.07 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.7. Paving (2024) - 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 | 0.33 | 0.28 | 2.99 | 4.00 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 614 | 614 | 0.02 | < 0.005 | — | 616 |
| Paving | — | 0.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 4.81 | 4.81 | < 0.005 | < 0.005 | — | 4.82 |
| Paving | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.80 | 0.80 | < 0.005 | < 0.005 | — | 0.80 |
| Paving | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.44 | 0.41 | 4.52 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 984 | 984 | 0.03 | 0.04 | 0.12 | 997 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 7.73 | 7.73 | < 0.005 | < 0.005 | 0.02 | 7.85 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.28 | 1.28 | < 0.005 | < 0.005 | < 0.005 | 1.30 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.8. Paving (2024) - Mitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.33 | 0.28 | 2.99 | 4.00 | 0.01 | 0.15 | — | 0.15 | 0.14 | — | 0.14 | — | 614 | 614 | 0.02 | < 0.005 | — | 616 |
| Paving | — | 0.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.02 | 0.03 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 4.81 | 4.81 | < 0.005 | < 0.005 | — | 4.82 |
| Paving | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.80 | 0.80 | < 0.005 | < 0.005 | — | 0.80 |
| Paving | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.44 | 0.41 | 4.52 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 984 | 984 | 0.03 | 0.04 | 0.12 | 997 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 7.73 | 7.73 | < 0.005 | < 0.005 | 0.02 | 7.85 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.28 | 1.28 | < 0.005 | < 0.005 | < 0.005 | 1.30 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.9. 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.31 | 0.26 | 2.84 | 4.00 | 0.01 | 0.13 | — | 0.13 | 0.12 | — | 0.12 | — | 614 | 614 | 0.02 | < 0.005 | — | 616 |
| Paving | — | 0.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.01 | 0.16 | 0.22 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 33.7 | 33.7 | < 0.005 | < 0.005 | — | 33.8 |
| Paving | — | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 5.57 | 5.57 | < 0.005 | < 0.005 | — | 5.59 |
| Paving | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.43 | 0.42 | 0.38 | 4.22 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 965 | 965 | 0.03 | 0.04 | 0.11 | 978 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.22 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 53.1 | 53.1 | < 0.005 | < 0.005 | 0.10 | 53.9 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.79 | 8.79 | < 0.005 | < 0.005 | 0.02 | 8.92 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.10. Paving (2025) - Mitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.31 | 0.26 | 2.84 | 4.00 | 0.01 | 0.13 | — | 0.13 | 0.12 | — | 0.12 | — | 614 | 614 | 0.02 | < 0.005 | — | 616 |
| Paving | — | 0.13 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.01 | 0.16 | 0.22 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 33.7 | 33.7 | < 0.005 | < 0.005 | — | 33.8 |
| Paving | — | 0.01 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | 0.03 | 0.04 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 5.57 | 5.57 | < 0.005 | < 0.005 | — | 5.59 |
| Paving | — | < 0.005 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Offsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.43 | 0.42 | 0.38 | 4.22 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 965 | 965 | 0.03 | 0.04 | 0.11 | 978 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.02 | 0.02 | 0.02 | 0.22 | 0.00 | 0.00 | 0.05 | 0.05 | 0.00 | 0.01 | 0.01 | — | 53.1 | 53.1 | < 0.005 | < 0.005 | 0.10 | 53.9 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.04 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 8.79 | 8.79 | < 0.005 | < 0.005 | 0.02 | 8.92 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.11. Architectural Coating (2024) - 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 | 0.22 | 0.18 | 1.21 | 1.53 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Architectural Coatings | — | 6.81 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.39 | 1.39 | < 0.005 | < 0.005 | — | 1.40 |
| Architectural Coatings | — | 0.05 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.23 | 0.23 | < 0.005 | < 0.005 | — | 0.23 |
| 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.44 | 0.41 | 4.52 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 984 | 984 | 0.03 | 0.04 | 0.12 | 997 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 7.73 | 7.73 | < 0.005 | < 0.005 | 0.02 | 7.85 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.28 | 1.28 | < 0.005 | < 0.005 | < 0.005 | 1.30 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.12. Architectural Coating (2024) - Mitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.22 | 0.18 | 1.21 | 1.53 | < 0.005 | 0.04 | — | 0.04 | 0.04 | — | 0.04 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Architectural Coatings | — | 6.81 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.01 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 1.39 | 1.39 | < 0.005 | < 0.005 | — | 1.40 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architect Coatings | — | 0.05 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.23 | 0.23 | < 0.005 | < 0.005 | — | 0.23 |
| 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.48 | 0.44 | 0.41 | 4.52 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 984 | 984 | 0.03 | 0.04 | 0.12 | 997 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.03 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | < 0.005 | < 0.005 | — | 7.73 | 7.73 | < 0.005 | < 0.005 | 0.02 | 7.85 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | < 0.005 | < 0.005 | < 0.005 | 0.01 | 0.00 | 0.00 | < 0.005 | < 0.005 | 0.00 | < 0.005 | < 0.005 | — | 1.28 | 1.28 | < 0.005 | < 0.005 | < 0.005 | 1.30 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.13. Architectural Coating (2025) - Unmitigated

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

| Location | 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 | 1.18 | 1.52 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Architectural Coatings | — | 6.81 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 1.18 | 1.52 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Architectural Coatings | — | 6.81 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.07 | 0.06 | 0.42 | 0.54 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 63.4 | 63.4 | < 0.005 | < 0.005 | — | 63.6 |
| Architectural Coatings | — | 2.43 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.08 | 0.10 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10.5 | 10.5 | < 0.005 | < 0.005 | — | 10.5 |
| Architectural Coatings | — | 0.44 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.45 | 0.43 | 0.30 | 4.68 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 1,035 | 1,035 | 0.02 | 0.04 | 4.19 | 1,051 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.43 | 0.42 | 0.38 | 4.22 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 965 | 965 | 0.03 | 0.04 | 0.11 | 978 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.15 | 0.15 | 0.12 | 1.45 | 0.00 | 0.00 | 0.34 | 0.34 | 0.00 | 0.08 | 0.08 | — | 345 | 345 | 0.01 | 0.01 | 0.64 | 350 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.02 | 0.26 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 57.1 | 57.1 | < 0.005 | < 0.005 | 0.11 | 58.0 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## 3.14. Architectural Coating (2025) - Mitigated

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

| Location | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Onsite | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.21 | 0.17 | 1.18 | 1.52 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Architectural Coatings | — | 6.81 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 1.18 | 1.52 | < 0.005 | 0.04 | — | 0.04 | 0.03 | — | 0.03 | — | 178 | 178 | 0.01 | < 0.005 | — | 179 |
| Architectural Coatings | — | 6.81 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.07 | 0.06 | 0.42 | 0.54 | < 0.005 | 0.01 | — | 0.01 | 0.01 | — | 0.01 | — | 63.4 | 63.4 | < 0.005 | < 0.005 | — | 63.6 |
| Architectural Coatings | — | 2.43 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Off-Road Equipment | 0.01 | 0.01 | 0.08 | 0.10 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 10.5 | 10.5 | < 0.005 | < 0.005 | — | 10.5 |
| Architectural Coatings | — | 0.44 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Onsite truck | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.45 | 0.43 | 0.30 | 4.68 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 1,035 | 1,035 | 0.02 | 0.04 | 4.19 | 1,051 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.43 | 0.42 | 0.38 | 4.22 | 0.00 | 0.00 | 0.99 | 0.99 | 0.00 | 0.23 | 0.23 | — | 965 | 965 | 0.03 | 0.04 | 0.11 | 978 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Average Daily | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.15 | 0.15 | 0.12 | 1.45 | 0.00 | 0.00 | 0.34 | 0.34 | 0.00 | 0.08 | 0.08 | — | 345 | 345 | 0.01 | 0.01 | 0.64 | 350 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Worker | 0.03 | 0.03 | 0.02 | 0.26 | 0.00 | 0.00 | 0.06 | 0.06 | 0.00 | 0.01 | 0.01 | — | 57.1 | 57.1 | < 0.005 | < 0.005 | 0.11 | 58.0 |
| Vendor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hauling | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

# 4. Operations Emissions Details

## 4.1. 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 1.86 | 1.70 | 1.37 | 15.6 | 0.04 | 0.03 | 3.66 | 3.68 | 0.02 | 0.93 | 0.95 | — | 3,950 | 3,950 | 0.15 | 0.13 | 14.3 | 4,008 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | 0.01 | 0.01 | 0.01 | 0.08 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 21.3 | 21.3 | < 0.005 | < 0.005 | 0.08 | 21.6 |
| Total | 1.87 | 1.71 | 1.38 | 15.7 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,971 | 3,971 | 0.15 | 0.14 | 14.4 | 4,030 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 1.81 | 1.65 | 1.62 | 14.7 | 0.04 | 0.03 | 3.66 | 3.68 | 0.02 | 0.93 | 0.95 | — | 3,732 | 3,732 | 0.16 | 0.15 | 0.37 | 3,781 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | 0.01 | 0.01 | 0.01 | 0.08 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | < 0.005 | 20.3 |
| Total | 1.82 | 1.66 | 1.63 | 14.8 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,752 | 3,752 | 0.17 | 0.15 | 0.37 | 3,801 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Condo/T | 0.29 | 0.27 | 0.25 | 2.33 | 0.01 | < 0.005 | 0.58 | 0.58 | < 0.005 | 0.15 | 0.15 | — | 555 | 555 | 0.02 | 0.02 | 0.92 | 563 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | 0.01 | 3.38 |
| Total | 0.29 | 0.27 | 0.25 | 2.35 | 0.01 | < 0.005 | 0.58 | 0.59 | < 0.005 | 0.15 | 0.15 | — | 558 | 558 | 0.02 | 0.02 | 0.92 | 566 |

### 4.1.2. Mitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 1.86 | 1.70 | 1.37 | 15.6 | 0.04 | 0.03 | 3.66 | 3.68 | 0.02 | 0.93 | 0.95 | — | 3,950 | 3,950 | 0.15 | 0.13 | 14.3 | 4,008 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | 0.01 | 0.01 | 0.01 | 0.08 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 21.3 | 21.3 | < 0.005 | < 0.005 | 0.08 | 21.6 |
| Total | 1.87 | 1.71 | 1.38 | 15.7 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,971 | 3,971 | 0.15 | 0.14 | 14.4 | 4,030 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 1.81 | 1.65 | 1.62 | 14.7 | 0.04 | 0.03 | 3.66 | 3.68 | 0.02 | 0.93 | 0.95 | — | 3,732 | 3,732 | 0.16 | 0.15 | 0.37 | 3,781 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Light Industry | 0.01 | 0.01 | 0.01 | 0.08 | < 0.005 | < 0.005 | 0.02 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 20.1 | 20.1 | < 0.005 | < 0.005 | < 0.005 | 20.3 |
| Total | 1.82 | 1.66 | 1.63 | 14.8 | 0.04 | 0.03 | 3.68 | 3.70 | 0.02 | 0.93 | 0.96 | — | 3,752 | 3,752 | 0.17 | 0.15 | 0.37 | 3,801 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.29 | 0.27 | 0.25 | 2.33 | 0.01 | < 0.005 | 0.58 | 0.58 | < 0.005 | 0.15 | 0.15 | — | 555 | 555 | 0.02 | 0.02 | 0.92 | 563 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | < 0.005 | < 0.005 | < 0.005 | 0.01 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.33 | 3.33 | < 0.005 | < 0.005 | 0.01 | 3.38 |
| Total | 0.29 | 0.27 | 0.25 | 2.35 | 0.01 | < 0.005 | 0.58 | 0.59 | < 0.005 | 0.15 | 0.15 | — | 558 | 558 | 0.02 | 0.02 | 0.92 | 566 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | 125 | 125 | 0.02 | < 0.005 | — | 126 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 22.8 | 22.8 | < 0.005 | < 0.005 | — | 23.1 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | — | 3.91 | 3.91 | < 0.005 | < 0.005 | — | 3.94 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 152 | 0.02 | < 0.005 | — | 153 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | 125 | 125 | 0.02 | < 0.005 | — | 126 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 22.8 | 22.8 | < 0.005 | < 0.005 | — | 23.1 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | — | 3.91 | 3.91 | < 0.005 | < 0.005 | — | 3.94 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 152 | 152 | 0.02 | < 0.005 | — | 153 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | 20.7 | 20.7 | < 0.005 | < 0.005 | — | 20.9 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 3.78 | 3.78 | < 0.005 | < 0.005 | — | 3.82 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | — | 0.65 | 0.65 | < 0.005 | < 0.005 | — | 0.65 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 25.1 | 25.1 | < 0.005 | < 0.005 | — | 25.4 |

### 4.2.2. Electricity Emissions By Land Use - Mitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 0.06 | 0.06 | < 0.005 | < 0.005 | — | 0.06 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 | < 0.005 | < 0.005 | — | 0.01 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 | < 0.005 | < 0.005 | — | 0.01 |

### 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| 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 |
| 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 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| 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 |
| 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 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| 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 |
| 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 |

## 4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| 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 |
| 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 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| 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 |
| 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 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |
| 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 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | 1.35 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.29 | 0.28 | 0.03 | 3.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 8.31 | 8.31 | < 0.005 | < 0.005 | — | 8.34 |
| Total | 0.29 | 1.88 | 0.03 | 3.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 8.31 | 8.31 | < 0.005 | < 0.005 | — | 8.34 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | 1.35 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Architectural | — | 0.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 0.00 | 1.60 | 0.00 | 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | 0.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.03 | 0.02 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.68 | 0.68 | < 0.005 | < 0.005 | — | 0.68 |
| Total | 0.03 | 0.32 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.68 | 0.68 | < 0.005 | < 0.005 | — | 0.68 |

### 4.3.2. Mitigated

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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | 1.35 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.29 | 0.28 | 0.03 | 3.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 8.31 | 8.31 | < 0.005 | < 0.005 | — | 8.34 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | 0.29 | 1.88 | 0.03 | 3.09 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 8.31 | 8.31 | < 0.005 | < 0.005 | — | 8.34 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | 1.35 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | 0.00 | 1.60 | 0.00 | 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Hearths | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Consumer Products | — | 0.25 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Architectural Coatings | — | 0.04 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Landscape Equipment | 0.03 | 0.02 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | — | 0.68 | 0.68 | < 0.005 | < 0.005 | — | 0.68 |
| Total | 0.03 | 0.32 | < 0.005 | 0.28 | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | — | < 0.005 | 0.00 | 0.68 | 0.68 | < 0.005 | < 0.005 | — | 0.68 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.9 | 16.0 | 0.32 | 0.01 | — | 26.4 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 0.52 | 2.13 | 2.65 | 0.05 | < 0.005 | — | 4.37 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 0.52 | 2.13 | 2.65 | 0.05 | < 0.005 | — | 4.37 |

### 4.4.2. Mitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 3.13 | 12.5 | 15.6 | 0.32 | 0.01 | — | 26.0 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 0.52 | 2.07 | 2.59 | 0.05 | < 0.005 | — | 4.31 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 0.52 | 2.07 | 2.59 | 0.05 | < 0.005 | — | 4.31 |

## 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) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 21.6 | 0.00 | 21.6 | 2.16 | 0.00 | — | 75.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 5.32 | 0.00 | 5.32 | 0.53 | 0.00 | — | 18.6 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 21.6 | 0.00 | 21.6 | 2.16 | 0.00 | — | 75.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 5.32 | 0.00 | 5.32 | 0.53 | 0.00 | — | 18.6 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 3.57 | 0.00 | 3.57 | 0.36 | 0.00 | — | 12.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.88 | 0.00 | 0.88 | 0.09 | 0.00 | — | 3.08 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 4.46 | 0.00 | 4.46 | 0.45 | 0.00 | — | 15.6 |

### 4.5.2. Mitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 21.6 | 0.00 | 21.6 | 2.16 | 0.00 | — | 75.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 5.32 | 0.00 | 5.32 | 0.53 | 0.00 | — | 18.6 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 21.6 | 0.00 | 21.6 | 2.16 | 0.00 | — | 75.5 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 5.32 | 0.00 | 5.32 | 0.53 | 0.00 | — | 18.6 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 26.9 | 0.00 | 26.9 | 2.69 | 0.00 | — | 94.2 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | 3.57 | 0.00 | 3.57 | 0.36 | 0.00 | — | 12.5 |
| Parking Lot | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | 0.00 |
| General Light Industry | — | — | — | — | — | — | — | — | — | — | — | 0.88 | 0.00 | 0.88 | 0.09 | 0.00 | — | 3.08 |
| Total | — | — | — | — | — | — | — | — | — | — | — | 4.46 | 0.00 | 4.46 | 0.45 | 0.00 | — | 15.6 |

## 4.6. Refrigerant Emissions by Land Use

### 4.6.1. Unmitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Condo/T | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.07 | 0.07 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.07 | 0.07 |

### 4.6.2. Mitigated

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

| Land Use | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.45 | 0.45 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Condo/Townhouse | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.07 | 0.07 |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | 0.07 | 0.07 |

## 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.7.2. Mitigated

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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Emergency Generator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Emergency Generator | 0.08 | 0.07 | 0.21 | 0.19 | < 0.005 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 | 34.3 | 34.3 | < 0.005 | < 0.005 | 0.00 | 34.4 |
| Total | 0.08 | 0.07 | 0.21 | 0.19 | < 0.005 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 | 34.3 | 34.3 | < 0.005 | < 0.005 | 0.00 | 34.4 |

### 4.8.2. Mitigated

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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Emergency Generator | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 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 | 0.00 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Emergency Generator | 0.08 | 0.07 | 0.21 | 0.19 | < 0.005 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 | 34.3 | 34.3 | < 0.005 | < 0.005 | 0.00 | 34.4 |
| Total | 0.08 | 0.07 | 0.21 | 0.19 | < 0.005 | 0.01 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 | 0.00 | 34.3 | 34.3 | < 0.005 | < 0.005 | 0.00 | 34.4 |

## 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 | 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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.9.2. Mitigated

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 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.10 | 0.10 | — | — | — | 0.10 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.44 | 0.44 | — | — | — | 0.44 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.10 | 3.10 | — | — | — | 3.10 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.21 | 0.21 | — | — | — | 0.21 |
| Green Wattle(Acacia irrorata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.20 | 0.20 | — | — | — | 0.20 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Mayten(Maytenus boaria) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.86 | 0.86 | — | — | — | 0.86 |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Narrow-leaf | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Tarata(Pittosporum eugenioides) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Bishop pine(Pinus muricata) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.18 | -0.18 | — | — | — | -0.18 |
| Boxelder (Acer negundo) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.45 | -0.45 | — | — | — | -0.45 |
| California laurel(Umbellularia californica) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.16 | -0.16 | — | — | — | -0.16 |
| Coast redwood(Sequoia sempervirens) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Mountain Mahogany spp(Cercocarpus) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.94 | -0.94 | — | — | — | -0.94 |
| Oregon ash(Fraxinus latifolia) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.85 | -0.85 | — | — | — | -0.85 |
| Red alder(Alnus rubra) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.93 | -0.93 | — | — | — | -0.93 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serviceb spp(Amelanchier) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.76 | -0.76 | — | — | — | -0.76 |
| Subtotal | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | — | — | — | 2.04 |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | — | — | — | 0.00 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | — | — | — | — | — | — | — | — | — | — | 5.19 | 5.19 | — | — | — | 5.19 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | — | — | — | — | — | — | — | — | — | — | 1.46 | 1.46 | — | — | — | 1.46 |
| Green Wattle(Acacia irrorata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.15 | 0.15 | — | — | — | 0.15 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | — | — | — | — | — | — | — | — | — | — | 2.60 | 2.60 | — | — | — | 2.60 |
| Mayten(Maytenus boaria) | — | — | — | — | — | — | — | — | — | — | — | — | 2.91 | 2.91 | — | — | — | 2.91 |

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| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.19 | 0.19 | — | — | — | 0.19 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | — | — | — | — | — | — | — | — | — | — | 1.90 | 1.90 | — | — | — | 1.90 |
| Tarata(Pittosporum eugenioides) | — | — | — | — | — | — | — | — | — | — | — | — | 0.84 | 0.84 | — | — | — | 0.84 |
| Bishop pine(Pinus muricata) | — | — | — | — | — | — | — | — | — | — | — | — | -0.36 | -0.36 | — | — | — | -0.36 |
| Boxelder (Acer negundo) | — | — | — | — | — | — | — | — | — | — | — | — | -2.68 | -2.68 | — | — | — | -2.68 |
| California laurel(Umbellularia californica) | — | — | — | — | — | — | — | — | — | — | — | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Coast redwood(Sequoia sempervirens) | — | — | — | — | — | — | — | — | — | — | — | — | -1.00 | -1.00 | — | — | — | -1.00 |
| Mountain Mahogany spp(Cercocarpus) | — | — | — | — | — | — | — | — | — | — | — | — | -0.47 | -0.47 | — | — | — | -0.47 |

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| Oregon ash(Fraxinus latifolia) | — | — | — | — | — | — | — | — | — | — | — | — | -2.55 | -2.55 | — | — | — | -2.55 |
| Red alder(Alnus rubra) | — | — | — | — | — | — | — | — | — | — | — | — | -2.42 | -2.42 | — | — | — | -2.42 |
| Serviceberry spp(Amelanchier) | — | — | — | — | — | — | — | — | — | — | — | — | -2.44 | -2.44 | — | — | — | -2.44 |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | 2.87 | 2.87 | — | — | — | 2.87 |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | 0.02 | — | < 0.005 | 0.01 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Green Wattle(Acacia irrorata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mayten(boaria) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Tarata(Pittosporum eugenioides) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Bishop pine(Pinus muricata) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Boxelder (Acer negundo) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| California laurel(Umbellularia californica) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Coast redwood(Sequoia sempervirens) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |

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| Mountain Mahogany spp(Cercocarpus) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Oregon ash(Fraxinus latifolia) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Red alder(Alnus rubra) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Serviceberry spp(Amelanchier) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Subtotal | — | — | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.10 | 0.10 | — | — | — | 0.10 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.44 | 0.44 | — | — | — | 0.44 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.10 | 3.10 | — | — | — | 3.10 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.21 | 0.21 | — | — | — | 0.21 |

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| Green Wattle(Acacia irrorata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.20 | 0.20 | — | — | — | 0.20 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Mayten(Maytenus boaria) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.86 | 0.86 | — | — | — | 0.86 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Tarata(Pittosporum eugenioides) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Bishop pine(Pinus muricata) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.18 | -0.18 | — | — | — | -0.18 |
| Boxelder (Acer negundo) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.45 | -0.45 | — | — | — | -0.45 |

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| California laurel(Umbellularia californica) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.16 | -0.16 | — | — | — | -0.16 |
| Coast redwood(Sequoia sempervirens) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Mountain Mahogany spp(Cercocarpus) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.94 | -0.94 | — | — | — | -0.94 |
| Oregon ash(Fraxinus latifolia) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.85 | -0.85 | — | — | — | -0.85 |
| Red alder(Alnus rubra) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.93 | -0.93 | — | — | — | -0.93 |
| Serviceberry spp(Amelanchier) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.76 | -0.76 | — | — | — | -0.76 |
| Subtotal | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | — | — | — | 2.04 |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | — | — | — | 0.00 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | — | — | — | — | — | — | — | — | — | — | 5.19 | 5.19 | — | — | — | 5.19 |

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| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | — | — | — | — | — | — | — | — | — | — | 1.46 | 1.46 | — | — | — | 1.46 |
| Green Wattle(Acacia irrorata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.15 | 0.15 | — | — | — | 0.15 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | — | — | — | — | — | — | — | — | — | — | 2.60 | 2.60 | — | — | — | 2.60 |
| Mayten(Maytenus boaria) | — | — | — | — | — | — | — | — | — | — | — | — | 2.91 | 2.91 | — | — | — | 2.91 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.19 | 0.19 | — | — | — | 0.19 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | — | — | — | — | — | — | — | — | — | — | 1.90 | 1.90 | — | — | — | 1.90 |
| Tarata(Pittosporum eugenioides) | — | — | — | — | — | — | — | — | — | — | — | — | 0.84 | 0.84 | — | — | — | 0.84 |
| Bishop pine(Pinus muricata) | — | — | — | — | — | — | — | — | — | — | — | — | -0.36 | -0.36 | — | — | — | -0.36 |

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| Boxelder (Acer negundo | — | — | — | — | — | — | — | — | — | — | — | — | -2.68 | -2.68 | — | — | — | -2.68 |
| California laurel(Umbellularia californica) | — | — | — | — | — | — | — | — | — | — | — | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Coast redwood(Sequoia sempervirens) | — | — | — | — | — | — | — | — | — | — | — | — | -1.00 | -1.00 | — | — | — | -1.00 |
| Mountain Mahogany spp(Cercocarpus) | — | — | — | — | — | — | — | — | — | — | — | — | -0.47 | -0.47 | — | — | — | -0.47 |
| Oregon ash(Fraxinus latifolia) | — | — | — | — | — | — | — | — | — | — | — | — | -2.55 | -2.55 | — | — | — | -2.55 |
| Red alder(Alnus rubra) | — | — | — | — | — | — | — | — | — | — | — | — | -2.42 | -2.42 | — | — | — | -2.42 |
| Serviceberry spp(Amelanchier) | — | — | — | — | — | — | — | — | — | — | — | — | -2.44 | -2.44 | — | — | — | -2.44 |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | 2.87 | 2.87 | — | — | — | 2.87 |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

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| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | 0.02 | — | < 0.005 | 0.01 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Green Wattle(Acacia irrorata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Mayten(Maytenus boaria) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

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| Tarata(Pittosporum eugenioides) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Bishop pine(Pinus muricata) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Boxelder (Acer negundo) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| California laurel(Umbellularia californica) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Coast redwood(Sequoia sempervirens) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Mountain Mahogany spp(Cercocarpus) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Oregon ash(Fraxinus latifolia) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Red alder(Alnus rubra) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Serviceberry spp(Amelanchier) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Subtotal | — | — | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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| Total | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.02 | 0.02 | — | — | — | 0.02 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.07 | 0.07 | — | — | — | 0.07 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.51 | 0.51 | — | — | — | 0.51 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.03 | 0.03 | — | — | — | 0.03 |
| Green Wattle(Acacia irrorata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.03 | 0.03 | — | — | — | 0.03 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.12 | 0.12 | — | — | — | 0.12 |
| Mayten(Maytenus boaria) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.14 | 0.14 | — | — | — | 0.14 |

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| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Tarata(Pittosporum eugenioides) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.12 | 0.12 | — | — | — | 0.12 |
| Bishop pine(Pinus muricata) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.03 | -0.03 | — | — | — | -0.03 |
| Boxelder (Acer negundo) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.07 | -0.07 | — | — | — | -0.07 |
| California laurel(Umbellularia californica) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.03 | -0.03 | — | — | — | -0.03 |
| Coast redwood(Sequoia sempervirens) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.08 | -0.08 | — | — | — | -0.08 |
| Mountain Mahogany spp(Cercocarpus) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.15 | -0.15 | — | — | — | -0.15 |

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| Oregon ash(Fraxinus latifolia) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.14 | -0.14 | — | — | — | -0.14 |
| Red alder(Alnus rubra) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.15 | -0.15 | — | — | — | -0.15 |
| Serviceberry spp(Amelanchier) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.13 | -0.13 | — | — | — | -0.13 |
| Subtotal | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.34 | 0.34 | — | — | — | 0.34 |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | — | — | — | 0.00 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 | — | — | — | 0.01 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | — | — | — | — | — | — | — | — | — | — | 0.86 | 0.86 | — | — | — | 0.86 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | — | — | — | — | — | — | — | — | — | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Green Wattle(Acacia irrorata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.02 | 0.02 | — | — | — | 0.02 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | — | — | — | — | — | — | — | — | — | — | 0.43 | 0.43 | — | — | — | 0.43 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mayten(boaria) | — | — | — | — | — | — | — | — | — | — | — | — | 0.48 | 0.48 | — | — | — | 0.48 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.03 | 0.03 | — | — | — | 0.03 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | — | — | — | — | — | — | — | — | — | — | 0.32 | 0.32 | — | — | — | 0.32 |
| Tarata(Pittosporum eugenioides) | — | — | — | — | — | — | — | — | — | — | — | — | 0.14 | 0.14 | — | — | — | 0.14 |
| Bishop pine(Pinus muricata) | — | — | — | — | — | — | — | — | — | — | — | — | -0.06 | -0.06 | — | — | — | -0.06 |
| Boxelder (Acer negundo) | — | — | — | — | — | — | — | — | — | — | — | — | -0.44 | -0.44 | — | — | — | -0.44 |
| California laurel(Umbellularia californica) | — | — | — | — | — | — | — | — | — | — | — | — | -0.08 | -0.08 | — | — | — | -0.08 |
| Coast redwood(Sequoia sempervirens) | — | — | — | — | — | — | — | — | — | — | — | — | -0.17 | -0.17 | — | — | — | -0.17 |

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| Mountain Mahogany spp(Cercocarpus) | — | — | — | — | — | — | — | — | — | — | — | — | -0.08 | -0.08 | — | — | — | -0.08 |
| Oregon ash(Fraxinus latifolia) | — | — | — | — | — | — | — | — | — | — | — | — | -0.42 | -0.42 | — | — | — | -0.42 |
| Red alder(Alnus rubra) | — | — | — | — | — | — | — | — | — | — | — | — | -0.40 | -0.40 | — | — | — | -0.40 |
| Serviceberry spp(Amelanchier) | — | — | — | — | — | — | — | — | — | — | — | — | -0.40 | -0.40 | — | — | — | -0.40 |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | 0.48 | 0.48 | — | — | — | 0.48 |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Green Wattle(Acacia irrorata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Mayten(Maytenus boaria) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Tarata(Pittosporum eugenioides) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Bishop pine(Pinus muricata) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Boxelder (Acer negundo) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| California laurel(Umbellularia californic | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Coast redwood(Sequoia sempervirens) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Mountain Mahogany spp(Cercocarpus) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Oregon ash(Fraxinus latifolia) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Red alder(Alnus rubra) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Serviceberry spp(Amelanchier) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Subtotal | — | — | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | < 0.005 | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.81 | 0.81 | — | — | — | 0.81 |

### 4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

| Vegetation | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

### 4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

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

### 4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

| Species | TOG | ROG | NOx | CO | SO2 | PM10E | PM10D | PM10T | PM2.5E | PM2.5D | PM2.5T | BCO2 | NBCO2 | CO2T | CH4 | N2O | R | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Summer (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.10 | 0.10 | — | — | — | 0.10 |

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| Blue gum eucalyptus(Eucalyptus globulus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.44 | 0.44 | — | — | — | 0.44 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.10 | 3.10 | — | — | — | 3.10 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.21 | 0.21 | — | — | — | 0.21 |
| Green Wattle(Acacia irrorata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.20 | 0.20 | — | — | — | 0.20 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Mayten(Maytenus boaria) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.86 | 0.86 | — | — | — | 0.86 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |

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| Tarata(Pi eugenioides) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Bishop pine(Pinus muricata) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.18 | -0.18 | — | — | — | -0.18 |
| Boxelder (Acer negundo) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.45 | -0.45 | — | — | — | -0.45 |
| California laurel(Umbellularia californica) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.16 | -0.16 | — | — | — | -0.16 |
| Coast redwood(Sequoia sempervirens) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Mountain Mahogany spp(Cercocarpus) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.94 | -0.94 | — | — | — | -0.94 |
| Oregon ash(Fraxinus latifolia) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.85 | -0.85 | — | — | — | -0.85 |
| Red alder(Alnus rubra) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.93 | -0.93 | — | — | — | -0.93 |
| Serviceberry spp(Amelanchier) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.76 | -0.76 | — | — | — | -0.76 |
| Subtotal | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | — | — | — | 2.04 |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | — | — | — | 0.00 |

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| Blue gum eucalyptus(Eucalyptus globulus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | — | — | — | — | — | — | — | — | — | — | 5.19 | 5.19 | — | — | — | 5.19 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | — | — | — | — | — | — | — | — | — | — | 1.46 | 1.46 | — | — | — | 1.46 |
| Green Wattle(Acacia irrorata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.15 | 0.15 | — | — | — | 0.15 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | — | — | — | — | — | — | — | — | — | — | 2.60 | 2.60 | — | — | — | 2.60 |
| Mayten(Maytenus boaria) | — | — | — | — | — | — | — | — | — | — | — | — | 2.91 | 2.91 | — | — | — | 2.91 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.19 | 0.19 | — | — | — | 0.19 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | — | — | — | — | — | — | — | — | — | — | 1.90 | 1.90 | — | — | — | 1.90 |

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| Tarata(Pi eugenioides) | — | — | — | — | — | — | — | — | — | — | — | — | 0.84 | 0.84 | — | — | — | 0.84 |
| Bishop pine(Pinus muricata) | — | — | — | — | — | — | — | — | — | — | — | — | -0.36 | -0.36 | — | — | — | -0.36 |
| Boxelder (Acer negundo) | — | — | — | — | — | — | — | — | — | — | — | — | -2.68 | -2.68 | — | — | — | -2.68 |
| California laurel(Umbellularia californica) | — | — | — | — | — | — | — | — | — | — | — | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Coast redwood(Sequoia sempervirens) | — | — | — | — | — | — | — | — | — | — | — | — | -1.00 | -1.00 | — | — | — | -1.00 |
| Mountain Mahogany spp(Cercocarpus) | — | — | — | — | — | — | — | — | — | — | — | — | -0.47 | -0.47 | — | — | — | -0.47 |
| Oregon ash(Fraxinus latifolia) | — | — | — | — | — | — | — | — | — | — | — | — | -2.55 | -2.55 | — | — | — | -2.55 |
| Red alder(Alnus rubra) | — | — | — | — | — | — | — | — | — | — | — | — | -2.42 | -2.42 | — | — | — | -2.42 |
| Serviceberry spp(Amelanchier) | — | — | — | — | — | — | — | — | — | — | — | — | -2.44 | -2.44 | — | — | — | -2.44 |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | 2.87 | 2.87 | — | — | — | 2.87 |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | — | — | — | — | — | — |

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| Blue gum eucalyptus(Eucalyptus globulus) | — | — | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | 0.02 | — | < 0.005 | 0.01 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Green Wattle(Acacia irrorata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Mayten(Maytenus boaria) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

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| Tarata(Pi eugenioides) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Bishop pine(Pinus muricata) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Boxelder (Acer negundo) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| California laurel(Umbellularia californica) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Coast redwood(Sequoia sempervirens) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Mountain Mahogany spp(Cercocarpus) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Oregon ash(Fraxinus latifolia) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Red alder(Alnus rubra) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Serviceberry spp(Amelanchier) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Subtotal | — | — | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily, Winter (Max) | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.10 | 0.10 | — | — | — | 0.10 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.44 | 0.44 | — | — | — | 0.44 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 3.10 | 3.10 | — | — | — | 3.10 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.21 | 0.21 | — | — | — | 0.21 |
| Green Wattle(Acacia irrorata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.20 | 0.20 | — | — | — | 0.20 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Mayten(Maytenus boaria) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.86 | 0.86 | — | — | — | 0.86 |

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| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Tarata(Pittosporum eugenioides) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.71 | 0.71 | — | — | — | 0.71 |
| Bishop pine(Pinus muricata) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.18 | -0.18 | — | — | — | -0.18 |
| Boxelder (Acer negundo) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.45 | -0.45 | — | — | — | -0.45 |
| California laurel(Umbellularia californica) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.16 | -0.16 | — | — | — | -0.16 |
| Coast redwood(Sequoia sempervirens) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Mountain Mahogany spp(Cercocarpus) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.94 | -0.94 | — | — | — | -0.94 |

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| Oregon ash(Fraxinus latifolia) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.85 | -0.85 | — | — | — | -0.85 |
| Red alder(Alnus rubra) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.93 | -0.93 | — | — | — | -0.93 |
| Serviceberry spp(Amelanchier) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.76 | -0.76 | — | — | — | -0.76 |
| Subtotal | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 2.04 | 2.04 | — | — | — | 2.04 |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | — | — | — | 0.00 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | — | — | — | — | — | — | — | — | — | — | 5.19 | 5.19 | — | — | — | 5.19 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | — | — | — | — | — | — | — | — | — | — | 1.46 | 1.46 | — | — | — | 1.46 |
| Green Wattle(Acacia irrorata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.15 | 0.15 | — | — | — | 0.15 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | — | — | — | — | — | — | — | — | — | — | 2.60 | 2.60 | — | — | — | 2.60 |

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| Mayten(boaria) | — | — | — | — | — | — | — | — | — | — | — | — | 2.91 | 2.91 | — | — | — | 2.91 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.19 | 0.19 | — | — | — | 0.19 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | — | — | — | — | — | — | — | — | — | — | 1.90 | 1.90 | — | — | — | 1.90 |
| Tarata(Pittosporum eugenioides) | — | — | — | — | — | — | — | — | — | — | — | — | 0.84 | 0.84 | — | — | — | 0.84 |
| Bishop pine(Pinus muricata) | — | — | — | — | — | — | — | — | — | — | — | — | -0.36 | -0.36 | — | — | — | -0.36 |
| Boxelder (Acer negundo) | — | — | — | — | — | — | — | — | — | — | — | — | -2.68 | -2.68 | — | — | — | -2.68 |
| California laurel(Umbellularia californica) | — | — | — | — | — | — | — | — | — | — | — | — | -0.49 | -0.49 | — | — | — | -0.49 |
| Coast redwood(Sequoia sempervirens) | — | — | — | — | — | — | — | — | — | — | — | — | -1.00 | -1.00 | — | — | — | -1.00 |

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| Mountain Mahogany spp(Cercocarpus) | — | — | — | — | — | — | — | — | — | — | — | — | -0.47 | -0.47 | — | — | — | -0.47 |
| Oregon ash(Fraxinus latifolia) | — | — | — | — | — | — | — | — | — | — | — | — | -2.55 | -2.55 | — | — | — | -2.55 |
| Red alder(Alnus rubra) | — | — | — | — | — | — | — | — | — | — | — | — | -2.42 | -2.42 | — | — | — | -2.42 |
| Serviceberry spp(Amelanchier) | — | — | — | — | — | — | — | — | — | — | — | — | -2.44 | -2.44 | — | — | — | -2.44 |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | 2.87 | 2.87 | — | — | — | 2.87 |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | 0.02 | — | < 0.005 | 0.01 | 0.01 | 0.01 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Green Wattle(Acacia irrorata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

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| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Mayten(Maytenus boaria) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Tarata(Pittosporum eugenioides) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Bishop pine(Pinus muricata) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Boxelder (Acer negundo) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |

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| California laurel(Umbellularia californic | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Coast redwood(Sequoia sempervirens) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Mountain Mahogany spp(Cercocarpus) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Oregon ash(Fraxinus latifolia) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Red alder(Alnus rubra) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Serviceberry spp(Amelanchier) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Subtotal | — | — | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | < 0.005 | 0.03 | — | < 0.005 | 0.01 | 0.01 | 0.02 | < 0.005 | < 0.005 | 0.01 | — | 4.92 | 4.92 | — | — | — | 4.92 |
| Annual | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Avoided | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.02 | 0.02 | — | — | — | 0.02 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.07 | 0.07 | — | — | — | 0.07 |

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| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.51 | 0.51 | — | — | — | 0.51 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.03 | 0.03 | — | — | — | 0.03 |
| Green Wattle(Acacia irrorata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.03 | 0.03 | — | — | — | 0.03 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.12 | 0.12 | — | — | — | 0.12 |
| Mayten(Maytenus boaria) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.14 | 0.14 | — | — | — | 0.14 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.04 | 0.04 | — | — | — | 0.04 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.04 | 0.04 | — | — | — | 0.04 |

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| Tarata(Pittosporum eugenioides) | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.12 | 0.12 | — | — | — | 0.12 |
| Bishop pine(Pinus muricata) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.03 | -0.03 | — | — | — | -0.03 |
| Boxelder (Acer negundo) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.07 | -0.07 | — | — | — | -0.07 |
| California laurel(Umbellularia californica) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.03 | -0.03 | — | — | — | -0.03 |
| Coast redwood(Sequoia sempervirens) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.08 | -0.08 | — | — | — | -0.08 |
| Mountain Mahogany spp(Cercocarpus) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.15 | -0.15 | — | — | — | -0.15 |
| Oregon ash(Fraxinus latifolia) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.14 | -0.14 | — | — | — | -0.14 |
| Red alder(Alnus rubra) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.15 | -0.15 | — | — | — | -0.15 |
| Serviceberry spp(Amelanchier) | — | > -0.005 | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | -0.13 | -0.13 | — | — | — | -0.13 |
| Subtotal | — | < 0.005 | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.34 | 0.34 | — | — | — | 0.34 |
| Sequestered | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

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| Alder spp(Alnus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.00 | 0.00 | — | — | — | 0.00 |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | — | — | — | — | — | — | — | — | — | — | 0.01 | 0.01 | — | — | — | 0.01 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | — | — | — | — | — | — | — | — | — | — | 0.86 | 0.86 | — | — | — | 0.86 |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | — | — | — | — | — | — | — | — | — | — | 0.24 | 0.24 | — | — | — | 0.24 |
| Green Wattle(Acacia irrorata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.02 | 0.02 | — | — | — | 0.02 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | — | — | — | — | — | — | — | — | — | — | 0.43 | 0.43 | — | — | — | 0.43 |
| Mayten(Maytenus boaria) | — | — | — | — | — | — | — | — | — | — | — | — | 0.48 | 0.48 | — | — | — | 0.48 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | — | — | — | — | — | — | — | — | — | — | — | — | 0.03 | 0.03 | — | — | — | 0.03 |

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| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | — | — | — | — | — | — | — | — | — | — | 0.32 | 0.32 | — | — | — | 0.32 |
| Tarata(Pittosporum eugenioides) | — | — | — | — | — | — | — | — | — | — | — | — | 0.14 | 0.14 | — | — | — | 0.14 |
| Bishop pine(Pinus muricata) | — | — | — | — | — | — | — | — | — | — | — | — | -0.06 | -0.06 | — | — | — | -0.06 |
| Boxelder (Acer negundo) | — | — | — | — | — | — | — | — | — | — | — | — | -0.44 | -0.44 | — | — | — | -0.44 |
| California laurel(Umbellularia californica) | — | — | — | — | — | — | — | — | — | — | — | — | -0.08 | -0.08 | — | — | — | -0.08 |
| Coast redwood(Sequoia sempervirens) | — | — | — | — | — | — | — | — | — | — | — | — | -0.17 | -0.17 | — | — | — | -0.17 |
| Mountain Mahogany spp(Cercocarpus) | — | — | — | — | — | — | — | — | — | — | — | — | -0.08 | -0.08 | — | — | — | -0.08 |
| Oregon ash(Fraxinus latifolia) | — | — | — | — | — | — | — | — | — | — | — | — | -0.42 | -0.42 | — | — | — | -0.42 |
| Red alder(Alnus rubra) | — | — | — | — | — | — | — | — | — | — | — | — | -0.40 | -0.40 | — | — | — | -0.40 |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Serviceberry spp(Ame | — | — | — | — | — | — | — | — | — | — | — | — | -0.40 | -0.40 | — | — | — | -0.40 |
| Subtotal | — | — | — | — | — | — | — | — | — | — | — | — | 0.48 | 0.48 | — | — | — | 0.48 |
| Removed | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Alder spp(Alnus) | — | — | 0.00 | — | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | — | — | — | — | — | — | — |
| Blue gum eucalyptus(Eucalyptus globulus) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Flooded gum eucalyptus(Eucalyptus grandis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Green Wattle(Acacia irrorata) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Mayten(Maytenus boaria) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Narrow-leaf peppermint(Eucalyptus | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Tarata(Pittosporum eugenioides) | — | — | < 0.005 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| Bishop pine(Pinus muricata) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Boxelder (Acer negundo) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| California laurel(Umbellularia californica) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Coast redwood(Sequoia sempervirens) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Mountain Mahogany spp(Cercocarpus) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Oregon ash(Fraxinus latifolia) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Red alder(Alnus rubra) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Serviceberry spp(Amelanchier) | — | — | > -0.005 | — | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | > -0.005 | — | — | — | — | — | — | — |
| Subtotal | — | — | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | — | — | — | — | — | — |
| — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |
| Total | — | < 0.005 | 0.01 | — | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | < 0.005 | — | 0.81 | 0.81 | — | — | — | 0.81 |

# 5. Activity Data

## 5.1. Construction Schedule

| Phase Name | Phase Type | Start Date | End Date | Days Per Week | Work Days per Phase | Phase Description |
|---|---|---|---|---|---|---|
| Demolition | Demolition | 1/1/2024 | 1/30/2024 | 5.00 | 22.0 | — |
| Grading | Grading | 1/1/2024 | 4/1/2024 | 5.00 | 66.0 | — |
| Building Construction | Building Construction | 1/1/2024 | 12/27/2024 | 5.00 | 260 | — |
| Paving | Paving | 12/28/2024 | 1/28/2025 | 5.00 | 22.0 | — |
| Architectural Coating | Architectural Coating | 12/28/2024 | 7/1/2025 | 5.00 | 132 | — |

## 5.2. Off-Road Equipment

### 5.2.1. Unmitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Demolition | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Demolition | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 71.0 | 0.37 |
| Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Grading | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Grading | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 71.0 | 0.37 |
| Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Building Construction | Forklifts | Diesel | Average | 1.00 | 8.00 | 82.0 | 0.20 |
| Building Construction | Aerial Lifts | Diesel | Average | 2.00 | 8.00 | 46.0 | 0.31 |
| Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Paving | Paving Equipment | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 8.00 | 37.0 | 0.48 |

### 5.2.2. Mitigated

| Phase Name | Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|---|
| Demolition | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Demolition | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 71.0 | 0.37 |
| Grading | Excavators | Diesel | Average | 2.00 | 8.00 | 36.0 | 0.38 |
| Grading | Tractors/Loaders/Backhoes | Diesel | Average | 3.00 | 8.00 | 84.0 | 0.37 |
| Grading | Skid Steer Loaders | Diesel | Average | 1.00 | 8.00 | 71.0 | 0.37 |
| Grading | Graders | Diesel | Average | 1.00 | 8.00 | 148 | 0.41 |
| Building Construction | Forklifts | Diesel | Average | 1.00 | 8.00 | 82.0 | 0.20 |
| Building Construction | Aerial Lifts | Diesel | Average | 2.00 | 8.00 | 46.0 | 0.31 |
| Paving | Pavers | Diesel | Average | 1.00 | 8.00 | 81.0 | 0.42 |
| Paving | Paving Equipment | Diesel | Average | 1.00 | 8.00 | 89.0 | 0.36 |
| Architectural Coating | Air Compressors | Diesel | Average | 1.00 | 8.00 | 37.0 | 0.48 |

## 5.3. Construction Vehicles

### 5.3.1. Unmitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Demolition | — | — | — | — |
| Demolition | Worker | 80.0 | 11.7 | LDA,LDT1,LDT2 |
| Demolition | Vendor | — | 8.40 | HHDT,MHDT |
| Demolition | Hauling | 1.73 | 20.0 | HHDT |
| Demolition | Onsite truck | — | — | HHDT |
| Grading | — | — | — | — |
| Grading | Worker | 80.0 | 11.7 | LDA,LDT1,LDT2 |
| Grading | Vendor | — | 8.40 | HHDT,MHDT |
| Grading | Hauling | 11.6 | 20.0 | HHDT |
| Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 120 | 11.7 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 2.00 | 8.40 | HHDT,MHDT |
| Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 120 | 11.7 | LDA,LDT1,LDT2 |
| Paving | Vendor | — | 8.40 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20.0 | HHDT |
| Paving | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 120 | 11.7 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 8.40 | HHDT,MHDT |
| Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |

### 5.3.2. Mitigated

| Phase Name | Trip Type | One-Way Trips per Day | Miles per Trip | Vehicle Mix |
|---|---|---|---|---|
| Demolition | — | — | — | — |
| Demolition | Worker | 80.0 | 11.7 | LDA,LDT1,LDT2 |
| Demolition | Vendor | — | 8.40 | HHDT,MHDT |
| Demolition | Hauling | 1.73 | 20.0 | HHDT |
| Demolition | Onsite truck | — | — | HHDT |
| Grading | — | — | — | — |
| Grading | Worker | 80.0 | 11.7 | LDA,LDT1,LDT2 |
| Grading | Vendor | — | 8.40 | HHDT,MHDT |
| Grading | Hauling | 11.6 | 20.0 | HHDT |
| Grading | Onsite truck | — | — | HHDT |
| Building Construction | — | — | — | — |
| Building Construction | Worker | 120 | 11.7 | LDA,LDT1,LDT2 |
| Building Construction | Vendor | 2.00 | 8.40 | HHDT,MHDT |
| Building Construction | Hauling | 0.00 | 20.0 | HHDT |
| Building Construction | Onsite truck | — | — | HHDT |
| Paving | — | — | — | — |
| Paving | Worker | 120 | 11.7 | LDA,LDT1,LDT2 |
| Paving | Vendor | — | 8.40 | HHDT,MHDT |
| Paving | Hauling | 0.00 | 20.0 | HHDT |
| Paving | Onsite truck | — | — | HHDT |
| Architectural Coating | — | — | — | — |
| Architectural Coating | Worker | 120 | 11.7 | LDA,LDT1,LDT2 |
| Architectural Coating | Vendor | — | 8.40 | HHDT,MHDT |
| Architectural Coating | Hauling | 0.00 | 20.0 | HHDT |
| Architectural Coating | Onsite truck | — | — | HHDT |

## 5.4. Vehicles

### 5.4.1. Construction Vehicle Control Strategies

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) |
|---|---|---|---|---|---|
| Architectural Coating | 126,465 | 42,155 | 1,011 | 337 | 2,799 |

## 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) |
|---|---|---|---|---|---|
| Demolition | 0.00 | 0.00 | 0.00 | 3,278 | — |
| Grading | 3,070 | 3,070 | 33.0 | 0.00 | — |
| Paving | 0.00 | 0.00 | 0.00 | 0.00 | 1.07 |

### 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 |
|---|---|---|
| Condo/Townhouse | — | 0% |
| Parking Lot | 1.07 | 100% |
| 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 |
|---|---|---|---|---|
| 2024 | 0.00 | 204 | 0.03 | < 0.005 |
| 2025 | 0.00 | 204 | 0.03 | < 0.005 |

## 5.9. Operational Mobile Sources

### 5.9.1. Unmitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Condo/Townhouse | 395 | 440 | 339 | 143,658 | 4,679 | 5,203 | 4,014 | 1,700,609 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | 2.08 | 2.08 | 2.08 | 759 | 28.1 | 28.1 | 28.1 | 10,240 |

### 5.9.2. Mitigated

| Land Use Type | Trips/Weekday | Trips/Saturday | Trips/Sunday | Trips/Year | VMT/Weekday | VMT/Saturday | VMT/Sunday | VMT/Year |
|---|---|---|---|---|---|---|---|---|
| Condo/Townhouse | 395 | 440 | 339 | 143,658 | 4,679 | 5,203 | 4,014 | 1,700,609 |
| Parking Lot | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| General Light Industry | 2.08 | 2.08 | 2.08 | 759 | 28.1 | 28.1 | 28.1 | 10,240 |

## 5.10. Operational Area Sources

### 5.10.1. Hearths

#### 5.10.1.1. Unmitigated

| Hearth Type | Unmitigated (number) |
|---|---|
| Condo/Townhouse | — |
| Wood Fireplaces | 0 |
| Gas Fireplaces | 0 |
| Propane Fireplaces | 0 |
| Electric Fireplaces | 0 |
| No Fireplaces | 26 |
| Conventional Wood Stoves | 0 |
| Catalytic Wood Stoves | 0 |
| Non-Catalytic Wood Stoves | 0 |
| Pellet Wood Stoves | 0 |

### 5.10.1.2. Mitigated

| Hearth Type | Unmitigated (number) |
|---|---|
| Condo/Townhouse | — |
| Wood Fireplaces | 0 |
| Gas Fireplaces | 0 |
| Propane Fireplaces | 0 |
| Electric Fireplaces | 0 |
| No Fireplaces | 26 |
| Conventional Wood Stoves | 0 |
| Catalytic Wood Stoves | 0 |
| Non-Catalytic Wood Stoves | 0 |
| Pellet Wood Stoves | 0 |

## 5.10.2. Architectural Coatings

| Residential Interior Area Coated (sq ft) | Residential Exterior Area Coated (sq ft) | Non-Residential Interior Area Coated (sq ft) | Non-Residential Exterior Area Coated (sq ft) | Parking Area Coated (sq ft) |
|---|---|---|---|---|
| 126465.29999999999 | 42,155 | 1,011 | 337 | 2,799 |

### 5.10.3. Landscape Equipment

| Season | Unit | Value |
|---|---|---|
| Snow Days | day/yr | 0.00 |
| Summer Days | day/yr | 180 |

### 5.10.4. Landscape Equipment - Mitigated

| 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) |
|---|---|---|---|---|---|
| Condo/Townhouse | 223,481 | 204 | 0.0330 | 0.0040 | 0.00 |
| Parking Lot | 40,868 | 204 | 0.0330 | 0.0040 | 0.00 |
| General Light Industry | 6,988 | 204 | 0.0330 | 0.0040 | 0.00 |

### 5.11.2. Mitigated

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) |
|---|---|---|---|---|---|
| Condo/Townhouse | 0.00 | 204 | 0.0330 | 0.0040 | 0.00 |

| | | | | | |
|---|---|---|---|---|---|
| Parking Lot | 0.00 | 204 | 0.0330 | 0.0040 | 0.00 |
| General Light Industry | 111 | 204 | 0.0330 | 0.0040 | 0.00 |

## 5.12. Operational Water and Wastewater Consumption

### 5.12.1. Unmitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Condo/Townhouse | 1,631,988 | 2,527,494 |
| Parking Lot | 0.00 | 0.00 |
| General Light Industry | 0.00 | 0.00 |

### 5.12.2. Mitigated

| Land Use | Indoor Water (gal/year) | Outdoor Water (gal/year) |
|---|---|---|
| Condo/Townhouse | 1,631,988 | 2,527,494 |
| Parking Lot | 0.00 | 0.00 |
| General Light Industry | 0.00 | 0.00 |

## 5.13. Operational Waste Generation

### 5.13.1. Unmitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Condo/Townhouse | 40.1 | — |
| Parking Lot | 0.00 | — |
| General Light Industry | 9.88 | — |

### 5.13.2. Mitigated

| Land Use | Waste (ton/year) | Cogeneration (kWh/year) |
|---|---|---|
| Condo/Townhouse | 40.1 | — |
| Parking Lot | 0.00 | — |
| General Light Industry | 9.88 | — |

## 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 |
|---|---|---|---|---|---|---|---|
| Condo/Townhouse | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088 | < 0.005 | 2.50 | 2.50 | 10.0 |
| Condo/Townhouse | Household refrigerators and/or freezers | R-134a | 1,430 | 0.12 | 0.60 | 0.00 | 1.00 |

### 5.14.2. Mitigated

| Land Use Type | Equipment Type | Refrigerant | GWP | Quantity (kg) | Operations Leak Rate | Service Leak Rate | Times Serviced |
|---|---|---|---|---|---|---|---|
| Condo/Townhouse | Average room A/C & Other residential A/C and heat pumps | R-410A | 2,088 | < 0.005 | 2.50 | 2.50 | 10.0 |
| Condo/Townhouse | Household refrigerators and/or freezers | R-134a | 1,430 | 0.12 | 0.60 | 0.00 | 1.00 |

## 5.15. Operational Off-Road Equipment

### 5.15.1. Unmitigated

| Equipment Type | Fuel Type | Engine Tier | Number per Day | Hours Per Day | Horsepower | Load Factor |
|---|---|---|---|---|---|---|

### 5.15.2. Mitigated

| 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 | 0.00 | 150 | 300 | 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 |
|---|---|---|---|

#### 5.18.1.2. Mitigated

| Vegetation Land Use Type | Vegetation Soil Type | Initial Acres | Final Acres |
|---|---|---|---|

### 5.18.1. Biomass Cover Type

### 5.18.1.1. Unmitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

### 5.18.1.2. Mitigated

| Biomass Cover Type | Initial Acres | Final Acres |
|---|---|---|

## 5.18.2. Sequestration

### 5.18.2.1. Unmitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|
| Bishop pine(Pinus muricata) | 1.00 | 2,172 | 10.9 |
| Boxelder(Acer negundo) | 5.00 | 6,657 | 21.4 |
| California laurel(Umbellularia californica) | 1.00 | 2,021 | 9.90 |
| Coast redwood(Sequoia sempervirens) | 3.00 | 6,119 | 30.4 |
| Mountain Mahogany spp(Cercocarpus) | 8.00 | 11,865 | 56.0 |
| Oregon ash(Fraxinus latifolia) | 9.00 | 12,733 | 40.9 |
| Red alder(Alnus rubra) | 9.00 | 13,850 | 44.6 |
| Serviceberry spp(Amelanchier) | 11.0 | 11,412 | 36.6 |
| Alder spp(Alnus) | -1.00 | 1,233 | 6.60 |
| Blue gum eucalyptus(Eucalyptus globulus) | -2.00 | 5,733 | 30.0 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | -13.0 | 37,410 | 196 |
| Flooded gum eucalyptus(Eucalyptus grandis) | -1.00 | 2,561 | 13.1 |
| Green Wattle(Acacia irrorata) | -1.00 | 2,381 | 12.4 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | -3.00 | 8,599 | 45.0 |
| Mayten(Maytenus boaria) | -4.00 | 10,429 | 54.1 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | -1.00 | 2,940 | 15.3 |

| | | | |
|---|---|---|---|
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | -1.00 | 2,866 | 15.0 |
| Tarata(Pittosporum eugenioides) | -4.00 | 8,800 | 43.4 |

### 5.18.2.2. Mitigated

| Tree Type | Number | Electricity Saved (kWh/year) | Natural Gas Saved (btu/year) |
|---|---|---|---|
| Bishop pine(Pinus muricata) | 1.00 | 2,172 | 10.9 |
| Boxelder(Acer negundo) | 5.00 | 6,657 | 21.4 |
| California laurel(Umbellularia californica) | 1.00 | 2,021 | 9.90 |
| Coast redwood(Sequoia sempervirens) | 3.00 | 6,119 | 30.4 |
| Mountain Mahogany spp(Cercocarpus) | 8.00 | 11,865 | 56.0 |
| Oregon ash(Fraxinus latifolia) | 9.00 | 12,733 | 40.9 |
| Red alder(Alnus rubra) | 9.00 | 13,850 | 44.6 |
| Serviceberry spp(Amelanchier) | 11.0 | 11,412 | 36.6 |
| Alder spp(Alnus) | -1.00 | 1,233 | 6.60 |
| Blue gum eucalyptus(Eucalyptus globulus) | -2.00 | 5,733 | 30.0 |
| Dwarf blue gum(Eucalyptus globulus v. compacta) | -13.0 | 37,410 | 196 |
| Flooded gum eucalyptus(Eucalyptus grandis) | -1.00 | 2,561 | 13.1 |
| Green Wattle(Acacia irrorata) | -1.00 | 2,381 | 12.4 |
| Manna gum(Eucalyptus viminalis ssp. viminalis) | -3.00 | 8,599 | 45.0 |
| Mayten(Maytenus boaria) | -4.00 | 10,429 | 54.1 |
| Narrow-leaf peppermint(Eucalyptus radiata ssp. radiata) | -1.00 | 2,940 | 15.3 |
| Red box(Eucalyptus polyanthemos ssp. polyanthemos) | -1.00 | 2,866 | 15.0 |
| Tarata(Pittosporum eugenioides) | -4.00 | 8,800 | 43.4 |

# 6. Climate Risk Detailed Report

## 6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

| Climate Hazard | Result for Project Location | Unit |
|---|---|---|
| Temperature and Extreme Heat | 9.52 | annual days of extreme heat |
| Extreme Precipitation | 15.3 | annual days with precipitation above 20 mm |
| Sea Level Rise | — | meters of inundation depth |
| Wildfire | 19.1 | annual hectares burned |

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

## 6.2. Initial Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | N/A | N/A | N/A | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | N/A | N/A | N/A | N/A |
| Wildfire | N/A | N/A | N/A | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |

| | | | | |
|---|---|---|---|---|
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

## 6.3. Adjusted Climate Risk Scores

| Climate Hazard | Exposure Score | Sensitivity Score | Adaptive Capacity Score | Vulnerability Score |
|---|---|---|---|---|
| Temperature and Extreme Heat | N/A | N/A | N/A | N/A |
| Extreme Precipitation | N/A | N/A | N/A | N/A |
| Sea Level Rise | N/A | N/A | N/A | N/A |
| Wildfire | N/A | N/A | N/A | N/A |
| Flooding | N/A | N/A | N/A | N/A |
| Drought | N/A | N/A | N/A | N/A |
| Snowpack Reduction | N/A | N/A | N/A | N/A |
| Air Quality Degradation | N/A | N/A | N/A | N/A |

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

## 6.4. Climate Risk Reduction Measures

# 7. Health and Equity Details

## 7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Exposure Indicators | — |

| | |
|---|---|
| AQ-Ozone | 7.52 |
| AQ-PM | 6.96 |
| AQ-DPM | 1.57 |
| Drinking Water | 93.3 |
| Lead Risk Housing | 50.6 |
| Pesticides | 36.0 |
| Toxic Releases | 17.3 |
| Traffic | 17.3 |
| Effect Indicators | — |
| CleanUp Sites | 7.71 |
| Groundwater | 91.7 |
| Haz Waste Facilities/Generators | 22.0 |
| Impaired Water Bodies | 83.0 |
| Solid Waste | 97.9 |
| Sensitive Population | — |
| Asthma | 7.29 |
| Cardio-vascular | 2.72 |
| Low Birth Weights | 40.7 |
| Socioeconomic Factor Indicators | — |
| Education | 23.3 |
| Housing | 54.6 |
| Linguistic | 22.9 |
| Poverty | 33.2 |
| Unemployment | 3.21 |

## 7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

| Indicator | Result for Project Census Tract |
|---|---|
| Economic | — |
| Above Poverty | 49.85243167 |
| Employed | 76.27357885 |
| Median HI | 33.70973951 |
| Education | — |
| Bachelor's or higher | 68.40754523 |
| High school enrollment | 100 |
| Preschool enrollment | 22.58437059 |
| Transportation | — |
| Auto Access | 58.09059412 |
| Active commuting | 86.24406519 |
| Social | — |
| 2-parent households | 76.55588349 |
| Voting | 97.48492237 |
| Neighborhood | — |
| Alcohol availability | 88.39984602 |
| Park access | 17.09226229 |
| Retail density | 3.310663416 |
| Supermarket access | 10.18863082 |
| Tree canopy | 92.91672013 |
| Housing | — |
| Homeownership | 42.43551906 |
| Housing habitability | 54.88258694 |
| Low-inc homeowner severe housing cost burden | 28.48710381 |
| Low-inc renter severe housing cost burden | 59.11715642 |
| Uncrowded housing | 54.07416913 |

| | |
|---|---|
| Health Outcomes | — |
| Insured adults | 64.90440139 |
| Arthritis | 0.0 |
| Asthma ER Admissions | 93.7 |
| High Blood Pressure | 0.0 |
| Cancer (excluding skin) | 0.0 |
| Asthma | 0.0 |
| Coronary Heart Disease | 0.0 |
| Chronic Obstructive Pulmonary Disease | 0.0 |
| Diagnosed Diabetes | 0.0 |
| Life Expectancy at Birth | 79.5 |
| Cognitively Disabled | 32.0 |
| Physically  Disabled | 19.5 |
| Heart Attack ER Admissions | 98.8 |
| Mental Health Not Good | 0.0 |
| Chronic Kidney Disease | 0.0 |
| Obesity | 0.0 |
| Pedestrian Injuries | 65.3 |
| Physical Health Not Good | 0.0 |
| Stroke | 0.0 |
| Health Risk Behaviors | — |
| Binge Drinking | 0.0 |
| Current Smoker | 0.0 |
| No Leisure Time for Physical Activity | 0.0 |
| Climate Change Exposures | — |
| Wildfire Risk | 0.0 |
| SLR Inundation Area | 46.4 |

| | |
|---|---|
| Children | 88.7 |
| Elderly | 4.0 |
| English Speaking | 51.9 |
| Foreign-born | 27.2 |
| Outdoor Workers | 11.7 |
| Climate Change Adaptive Capacity | — |
| Impervious Surface Cover | 96.4 |
| Traffic Density | 12.5 |
| Traffic Access | 23.0 |
| Other Indices | — |
| Hardship | 30.0 |
| Other Decision Support | — |
| 2016 Voting | 98.2 |

## 7.3. Overall Health & Equity Scores

| Metric | Result for Project Census Tract |
|---|---|
| CalEnviroScreen 4.0 Score for Project Location (a) | 16.0 |
| Healthy Places Index Score for Project Location (b) | 69.0 |
| Project Located in a Designated Disadvantaged Community (Senate Bill 535) | No |
| Project Located in a Low-Income Community (Assembly Bill 1550) | Yes |
| Project Located in a Community Air Protection Program Community (Assembly Bill 617) | No |

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

## 7.4. Health & Equity Measures

No Health & Equity Measures selected.

## 7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

## 7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

# 8. User Changes to Default Data

| Screen | Justification |
|---|---|
| Land Use | Per project description. |
| Construction: Construction Phases | Per project description. |
| Construction: Off-Road Equipment | Per project description. |
| Operations: Energy Use | All electric per project description. |
| Operations: Water and Waste Water | Assume 0 indoor water use for WWTP. |
| Operations: Solid Waste | WWTP solid waste placeholder. |
| Operations: Refrigerants | No refrigerant use at WWTP. |
| Operations: Emergency Generators and Fire Pumps | Placeholder. |
| Operations: Hearths | All electric per project description. |
| Construction: Trips and VMT | Per project description. |
| Operations: Vehicle Data | Assume 1 worker per day at WWTF. |

# APPENDIX D

# HISTORIC RESOURCE ASSESSMENT

est. 2021

GROUNDWORK

PLANNING & PRESERVATION



# HISTORIC RESOURCE ASSESSMENT

U.S. COAST GUARD HOUSING FACILITY, COMMUNICATIONS AREA MASTER STATION PACIFIC (CAMSPAC), POINT REYES STATION, CALIFORNIA

NOVEMBER 20, 2023

Prepared by Gretchen Hilyard Boyce
Groundwork Planning & Preservation

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# Acronyms/Abbreviations

| | |
|---|---|
| California Register | California Register of Historical Resources |
| CAMSPAC | Communications Area Master Plan Pacific |
| CEQA | California Environmental Quality Act |
| CLAM | Community Land Trust Association of West Marin |
| DPR form | State of California Department of Parks & Recreation DPR 523 form |
| Eden | Eden Housing, Inc. |
| Groundwork | Groundwork Planning & Preservation |
| HRA | Historic Resource Assessment |
| IS/MND | Initial Study/Mitigated Negative Declaration |
| National Register | National Register of Historic Places |
| USCG | United States Coast Guard |

# Summary of Findings

Community Land Trust Association of West Marin (CLAM) and Eden Housing, Inc. (Eden) are proposing to adaptively reuse and repurpose the former United States Coast Guard (USCG) Housing Facility for the Communications Area Master Plan Pacific (CAMSPAC) at Point Reyes Station, California to provide affordable housing units in Point Reyes Station.

This Historic Resource Assessment (HRA) was prepared by Groundwork Planning & Preservation (Groundwork) on behalf of Panorama Environmental, Inc. (environmental consultant) for the County of Marin (lead agency). The HRA was conducted for the project in compliance with the lead agencies responsibilities under the California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act. The purpose of this report is to evaluate historic-age properties within the study area to determine if any would qualify as historical resources under CEQA to inform the analysis of the proposed project in the Initial Study/Mitigated Negative Declaration (IS/MND) being prepared by Panorama Environmental, Inc. for the County of Marin. The HRA was prepared by Groundwork's founder, Gretchen Hilyard Boyce, who exceeds the *Secretary of the Interior's Professional Qualification Standards* in History and Architectural History.

This HRA identifies and evaluates historic-age properties within the study area for eligibility for listing in the National Register of Historic Places (National Register) and California Register of Historical Resources (California Register) The study area contains one historic-age property, the former USCG Housing Facility for the CAMSPAC at Point Reyes Station, which is comprised of 23 buildings, structures, and recreational features. Detailed evaluations of these properties are recorded on State of California Department of Parks and Recreation DPR 523 forms (DPR forms), which are attached in the Appendix.

Groundwork concludes that the historic-age property located within the study area does not meet the criteria for listing in the National Register or California Register and does not qualify as a historical resource under CEQA. The final determination will be made by the County of Marin during their review of the findings of this HRA and attached DPR forms. Due to the absence of historical resources within the study area, there is no potential for the proposed project to impact historical resources. A separate archeological study is being conducted for the project by a separate consultant.

# I. Description of the Undertaking

## Property Description

The subject property is known as the U.S. Coast Guard Housing Facility for the Communications Area Master Station Pacific (CAMSPAC) and is located approximately 1.5 miles east of the town of Point Reyes Station in unincorporated Marin County, California **(see Figure A: Location Map).** The approximately 33.59-acre property sits on a terrace that is 110 feet in elevation and is developed with buildings, structures and recreational features associated with its use as housing for the CAMSPAC. The property was constructed in 1973-1974 and

contains 23 features, including: 11 residential buildings, 7 non-residential structures, and 5 recreational facilities including a playground area, tennis court, basketball court, and aboveground pool, and hot tub/spa.

The property is bounded on the west by Point Reyes Family Homes affordable housing, on the north and northeast by an unimproved parcel, and on the east and south by Golden Gate National Recreation Area and Lagunitas Creek, which frames the southern and eastern border of the Property. A commercial property and a small farm are adjacent to the property to the south.

Access to the subject property is from Mesa Road, near the intersection of Mesa Road and State Highway 1, immediately northeast of the town of Point Reyes Station. Commodore Webster Drive extends east from Mesa Road and provides access into the property on a northeast axis, creating a central spine along which many of the buildings are oriented. Commodore Webster Drive is an asphalt paved, two-lane private road that terminates in a small cul-de-sac at the north end of the property.

## Project Description

CLAM and Eden, referred to jointly as Applicant, have filed an application with Marin County for a Coastal Permit and Conditional Use Permit to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. The proposed project would:

1. Rehabilitate existing townhomes contained in 10, two-story buildings (Buildings 101, 102, 103, 104, 201, 202, 203, 204, 205, 206) to provide 36 affordable housing units;
2. Rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units;
3. Rehabilitate "Building 100A" to provide 3 housing units;
4. Renovate and expand an existing kitchen/galley building (Building 1) to provide a resident services building;
5. Construct a new, on-site wastewater treatment system;
6. Remove trees from a riparian area; and
7. Reconstruct an existing playground.

The project would require re-parcelization to create four parcels within the project site. Marin County is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

## Study Area

The study area **(see Figure A)** for the evaluation includes the approximately 33.59-acre property located at 100 Commodore Webster Drive in Point Reyes Station in Marin County, California. The property is located approximately 1.5 miles southeast of Point Reyes Station, in a semi-rural setting. The property occupies Marin County Assessor Parcel Numbers 119-240-73 and 119-236-10. The property is bound on the west by Point Reyes Family Homes affordable housing, on the north and northeast by an unimproved parcel, and on the east

and south by Golden Gate National Recreation Area and Lagunitas Creek, which frames the southern and eastern border of the Property. A commercial property and a small farm are located adjacent to the property to the south.

# II. Study Methods and Findings

## Current Historic Status

Historic-age properties identified within the study area have not previously been evaluated for listing in any local, state, or federal historic registry or database, including the National Register nor the California Register.

## Methodology

Groundwork prepared this report using primary and secondary sources collected at various repositories and based on field investigation conducted in September 2023. Archival research was targeted at archives and online repositories as needed to obtain information about the development of the property, historic context, and alterations over time.

### Cultural Resources Background and Research

Groundwork prepared this report using primary and secondary sources available at the following archives: Marin County Free Library, California State Archives, National Park Service Point Reyes National Seashore Photograph Archive, newspapers.com, and Ancestry.com. Research support was provided by Ettienne LeFebre, a Master of Arts in Public History candidate at California State University, Sacramento.

Table 1 below lists the key technical reports which provided background information to inform the evaluations:

***Table 1. Previous Studies and Reports in the Area of Potential Effects***

| Author | Date | Report Title |
|---|---|---|
| Essel Environmental Engineering and Consulting | 2021 | *Phase I Environmental Site Assessment: Commodore Webster Drive, Point Reyes Station, California* |
| EMG | 2018 | *Facility Condition Assessment of Point Reyes Station, Commodore Webster Drive, Point Reyes, California* |
| Tetra Tech | 2016 | *Environmental Compliance Due Diligence Activities Report: U.S. Coast Guard Point Reyes Station, California Housing Units* |
| Alshuth and Oringer | 2016 | *A Historical Resources Study for the Point Reyes Station U.S. Coast Guard Base Housing Project, Point Reyes Station U.S. Coast Guard Base, Marin County, California* |

## Historical Resources Field Investigation

On September 5, 2023, Groundwork staff Gretchen Hilyard Boyce, Principal, visited the site and conducted a pedestrian survey for field verification of the presence or absence of historical resources. At various locations, she observed the existing conditions of the buildings, structures, and recreational features. The site visit included the survey of 23 historic-age features listed below **(see Figure B).**

***Table 2. Historic-Age Buildings, Structures and Recreational Features Surveyed***

| DPR # | Building # (keyed to Figure B) | Type | Building/Feature Name |
|---|---|---|---|
| 1 | 1 | Building | Galley (kitchen) |
| 2 | 50 | Building | Bachelor Enlisted Quarters |
| 3 | 100A | Building | Facilities and Engineering Building |
| 4 | 100B | Building | Chemical and Equipment Storage Building |
| 5 | 100C | Building | Mechanical Shop/Yard Maintenance Building |
| 6 | 101 A,B,C,D | Building | residential |
| 7 | 102 A,B,C,D | Building | residential |
| 8 | 103 A,B,C,D | Building | residential |
| 9 | 104 A,B,C,D | Building | residential |
| 10 | 201 A,B,C,D | Building | residential |
| 11 | 202 A,B,C,D | Building | residential |
| 12 | 203 A,B,C,D | Building | residential |
| 13 | 204 A,B | Building | residential |
| 14 | 205 A,B,C | Building | residential |
| 15 | 206 A,B,C | Building | residential |

| | | | |
|---|---|---|---|
| 16 | | Structure | Landscape Equipment Storage Shed |
| 17 | | Structure | Storage Shed/Housing Lawn Shed |
| 18 | | Structure | Wood Recreational Pavilion |
| 19 | | Recreational Feature | Play Area and Recreational Pavilion |
| 20 | | Recreational Feature | Basketball Court |
| 21 | | Recreational Feature | Hot Tub |
| 22 | | Recreational Feature | Pool |
| 23 | | Recreational Feature | Tennis Court |

## Evaluation of Potential Historical Resources

The subject property was constructed as a housing facility in 1973-1974 and is comprised of 23 buildings, structures, and recreational features. It was determined that the property would be best evaluated as a potential historic district. Groundwork prepared a DPR 523 D (District) record for the subject property and 23 DPR 523 A (Primary) records for individual buildings, structures, and recreational features located within the study area (see Appendix). The findings of those evaluations and historic context sections are summarized below.

### Historic Context

*Early Settlement of the Point Reyes Peninsula*

The Coastal Miwok inhabited the Point Reyes Peninsula for over 3,000 years before the arrival of the first European, Sir Francis Drake, who observed the area in 1579. Tribes throughout the peninsula and Tomales Bay managed the grasslands through controlled burning and selective harvesting (MIG Inc., 15). European settlement did not start in the region until the Spanish established Mission San Rafael Arcángel in San Rafael, California in 1817, which had a large agricultural output and introduced over 2,000 cattle to the peninsula. The longhorn cattle were raised mainly for their hides and tallow, as both were lucrative products in global markets at the time. The cattle drastically altered the Point Reyes and Tomales Bay landscape due to free-range grazing that disturbed the native vegetation that was curated and cultivated by the Coast Miwok (Edmonds et. al, 16-17).

Mexico gained independence from Spain in 1821 and the secularization of the Mission System in 1834 transformed land ownership patterns across the state. Large Mexican land grants were claimed by Californios

of Mexican and foreign origin. The land on which the subject property is located today was within the boundaries of 8,863-acre Rancho Tomales y Baulenes (**Figure 10)**[1]. Established in 1837 by Mexican corporal Rafael Garcia, who built the first non-indigenous settlement outside of Mission San Rafael in Bolinas Bay in 1833, Rancho Tomales y Baulenes continued the cattle ranching tradition of the previous Spanish occupants (Edmonds et. al, 17). This land was also claimed by the nearby 9,478-acre Nicasio Land Grant, which was common as many Mexican Land Grants had informal record keeping methods and boundaries were often disputed **(Figure 11)** (CA Department of Transportation, 17). In 1851, James Black purchased the section of the Nicasio Land Grant that encompasses present-day Point Reyes Station (Alshuth and Origer, 5).

After the United States acquired California in the Mexican American War in 1848, the San Francisco Bay area and surrounding regions experienced an influx of migration from the Eastern United States and other countries. Land disputes between Anglo settlers and Mexican land grant holders became common, exacerbated by the fact that there was little government oversight of these transactions in the northern frontier of Mexico. In 1850, the U.S. Congress passed the California Land Act of 1850, which led Rafael Garcia to enter a protracted land grant battle before the California Land Commission in 1853 due to the Mexican government never ratifying his deed of purchase (Avery, 39). In 1866 Garcia obtained the title to his land and died four months later and by this time had already sold 4,336 acres of the land.

*The Proliferation of Dairy Farming and the Founding of Point Reyes Station*

Sometime in the 1860s Sheriff James C. Stocker rented the subject property from Black and utilized it as a dairy farm (EIP Corporation, 58). Since Stocker was a renter, it is possible he was a tenant dairy farmer who participated in the burgeoning butter industry. By this time, Point Reyes and Olema Valley had become a center for dairy farming in California; the Point Reyes Peninsula farms were established in 1857 and the Olema Valley dairies in 1856. The Shafter brothers, lawyers based in San Francisco, purchased former rancho land and also likely received some land as payment by ranchero owners who were their clients (Edmonds et al., 20). Rancheros, the Mexican Californios who owned the land grants, were often rich in land but poor in actual capital, so they often paid their lawyers in land (Pitt, 89). The Shafter brothers acquired about 66,000 acres of land and developed a system of tenant dairy farms on the northern end of the peninsula **(Figure 12)**. Between 1865 and 1875 the Shafter's and Howard's system of tenant dairy farms - often rented by European immigrants like the Irish, Italians, Italian-speaking Swiss, and Azorean Portuguese - became well known for their butter production across the state. Chinese farm workers also occupied the area in the 1870s, but their presence on the peninsula diminished by the end of the nineteenth century (CA Department of Transportation, 6). The Shafters were involved in the management and construction of the dairy farms with their tenants, whose leases

[1] *Note: Figure references below refer to the DPR District Record included in the Appendix.*

often ran one to three years (Edmonds et al., 22). The Shafters focused on butter because it did not spoil as quickly as other dairy products when transporting via schooner and steamship to San Francisco.

The Olema Valley Ranches, located on the southern end of the peninsula, were established both as tenant farms and independent dairies starting in 1856 with the Stewart, Randall, and Genazzi Ranches **(Figure 13)** (Edmonds et al., 25). The Olema Farms also focused on butter production and contributed to the Marin County dairy industry, which was considered the most productive and profitable dairy production region in the state.

In 1875, Mary Black (daughter of James Black and owner of James Stocker's rented land) sold the land to the North Pacific Coast Railroad. The North Pacific Coast Railroad established a railroad station on the former pastureland, which was followed by the establishment of Point Reyes Station and its growth in the late 1870s and 1880s **(Figure 14)** (EIR Corporation, 58; Peterson and Patterson, 4). A portion of this railroad line ran across the subject property along the contemporary Commodore Webster Drive. Point Reyes Station's new status as a stopping point on the railroad led to a population boom in the town and provided the dairy farms with faster, more reliable, and safer transportation of their products (CA Department of Transportation, 5). The dairy industry grew at an accelerated pace as butter could be transported in a matter of hours rather than the three days it took by schooner. The railroad was also used by local farmers for the transportation of cattle and hogs. As legislation surrounding dairy production increased in the late nineteenth and early twentieth century, the surrounding farms upgraded their traditional wood dairy barns to industrial Grade A dairy warehouses. In 1915, the California Pure Milk Law passed and required all milk produced in the state to be pasteurized. To meet this regulation, as most dairy farmers in the area did not possess the equipment to pasteurize, the Point Reyes Dairymen Association established the Point Reyes Cooperative Creamery at Point Reyes Station (Edmonds et al., 24).

*Point Reyes' Maritime History and the U.S. Coast Guard*

As early as 1854 there were calls for a lighthouse to be built on the Point Reyes Peninsula (White, 17). Maritime routes to San Francisco often passed by the Point Reyes Peninsula, which was dangerous for ships due to the topography of the seashore and the high likelihood of foggy conditions. From 1854 to 1869 the U.S. Congress authorized thousands of dollars for the construction of a lighthouse and fog signal, but delays in the adjudication of Mexican Land Grants in the region stalled the construction project. In 1857 the Shafter brothers and son-in-law Charles Webb Howard acquired the Rancho de los Reyes land grant, which would be the eventual site of the proposed lighthouse (Edmonds et al.,20). In 1869, 83 acres of this land was sold to the U.S. government for construction of the lighthouse at the west most point of the peninsula. On December 1, 1870, the lighthouse became operable **(Figure 15)**, and provided mariners with a new sense of safety traveling parallel to the coast, including ships transporting lumber from Portland, Oregon and Seattle, Washington, as well as the schooners that transported butter to San Francisco from the Marin County dairy farms (*Point Reyes Lifeboat Station: CLR*, 18). However, shipwrecks persisted, including eight major shipwrecks occurring throughout the 1870s and 1880s, and only lighthouse personnel and dairy ranchers were able to provide assistance to the

crews of shipwrecked boats. In 1878 the U.S. Life-saving Service, an early precursor to the U.S. Coast Guard, was founded to address rising numbers of shipwrecks due to a nationwide increase in maritime shipping. In 1886, the U.S. Life-saving Service began negotiations with Charles Webb Howard to purchase property for the establishment of a Life-saving station on the Point Reyes coast.

In 1888 Howard sold a 3.5-acre property on Ten-Mile beach, three miles north of the point. The Point Reyes Life-saving Station began operations on July 8, 1890, with 37 crewmembers **(Figure 16)**. The station operated until 1927 and assisted in numerous small rescue operations and 14 major shipwrecks during its 37 years of operation (*Point Reyes Lifeboat Station: CLR*, 18). The location of the life-saving station, however, was poor for the launch of the boats needed to conduct life-saving missions, which led to the construction of an auxiliary boathouse on Howard's land a few hundred yards north of the station in 1894. It was clear that the life-saving station needed a new location even after the construction of the auxiliary boathouse, yet construction stalled for several decades and led to deteriorating conditions of the Point Reyes Life-saving Station. In 1915, the U.S. Life-Saving Service joined with the Revenue Cutter Service to create the U.S. Coast Guard Service, who took over operations of the life-saving station. Finally in 1928, the Coast Guard established the Point Reyes Lifeboat Station in a new location on land bought from the heirs of Howard in northwestern Drake's Bay **(Figure 17)** (*Point Reyes Lifeboat Station: CLR*, 20-24).

The Lifeboat Station operated for 41 years until 1957. During this time crew members assisted with numerous incidents relating to fishing boats and private boating. During both World War I and World War II, Coast Guard personnel were enlisted into military service to protect the Pacific Coastline. Life at the station was particularly difficult for Coast Guard members who had family, as family housing was not provided by the station: men were expected to either find nearby lodging for their family on their own, live away from their family, or relocate to stations with family lodging (*Point Reyes Lifeboat Station: CLR*, 27-30). In 1946 the Coast Guard expanded the facility, expecting long-term activity at the station to increase, but the vast improvements in maritime navigational technology and decreased fishing fleet numbers led to the eventual shuttering of the station in 1968 (*Point Reyes Lifeboat Station: CLR,* 49).

*U.S. Coast Guard Communications Operations in the Point Reyes National Seashore (PRNS)*

In the mid-1960s, during the closure of the Point Reyes Lifeboat Station, the Coast Guard made plans to create a Pacific-wide Communication System to meet the demands of new maritime navigational technology ("Coast Guard berths in Pt. Reyes Station," Leane). The Coast Guard hired Palo Alto communications consulting firm Grangers Associates to determine where would be the best location for the communications system, and ten options across the west coastline were considered. Ultimately the Point Reyes Peninsula was recommended as an ideal location for a maritime communications facility, where RCA and AT&T had already been conducting commercial maritime communications for years. In 1970 Congress authorized $5 million for the construction of communications stations with family and individual housing for Coast Guard personnel. This was a notable departure from earlier Coast Guard operations that failed to provide housing for families.

*Establishment of the Point Reyes National Seashore*

From the late 1950s to the 1970s, the National Park Service began establishing federally protected parkland closer to urban centers for recreational purposes and the preservation of the environment from urban sprawl (Watt, 67). The rise of environmentalism in California during this period contributed to calls for federal protection of Point Reyes Peninsula from environmentalists and residents concerned with urban and suburban sprawl disturbing the natural landscapes on the peninsula. However, while the NPS formally began drawing up leaseback agreements with the regions dairy farmers, many of which descended from the original dairy farmers on the peninsula 100 years before, some farmers and residents of West Marin County opposed the establishment of a national park and criticized NPS officials and lawmakers for their lack of inclusion in discussions on the park proposal (Watt, 79). Proposed protected pastoral zones were often situated on land unsuitable for cattle grazing, and there were concerns in some communities about noise level and traffic increases from park visitors. RCA and AT&T, who owned private property for radio operating systems on the peninsula also opposed designation, as the low noise levels on the peninsula made radio operation conditions excellent at Point Reyes (Watt, 78). Additionally, the NPS wanted to designate segments of pastureland into "wilderness zones" and remove man-made influences on the land, which would effectively prohibit some dairy farmers from using their inherited land. Despite these concerns and heated debates that prompted years of tense negotiations between the NPS and farmers, the NPS officially owned the majority of the Point Reyes Peninsula and designated it a protected national seashore in 1962. By this time, the largest entities that still owned private land on the peninsula included RCA, AT&T, and the U.S. Coast Guard.

*Creation and Operation of the U.S. Coast Guard Point Reyes Housing Facility*

Two communications stations were built on the Point Reyes peninsula from 1970-1973, one on the seashore near the town of Inverness and the other about 16 miles southeast of Bolinas. Lieutenant Commander Stephen P. Leane was appointed commanding officer and Lieutenant Phillip Ellia was appointed executive officer of the communications station (Leane, "Coast Guard berths in Pt. Reyes Station").

*Stephen P. Leane*

Stephen Patrick Leane was born on October 31, 1939, in Center, Indiana to John Hawkins Leane and Kathryn Louise Gish, and was raised in Indianapolis, Indiana ("Stephen Patrick Leane Birth Certificate," Ancestry.com). He attended Thomas Carr High School in Indianapolis from about 1954-1958, and afterwards attended and graduated from the U.S. Coast Guard Academy in New London, Connecticut in 1961 ("Stephen Patrick Leane Yearbook Picture," Ancestry.com; "Coast Guard Groundbreaking at Point Reyes Station," *Petaluma-Argus Courier*). After graduating, he worked for the Coast Guard on the Atlantic Coast until moving to Monterrey, California in 1964 to attend the Navy's Postgraduate School. On December 3, 1965, he married Dana Timmins in Monterrey, and graduated from the Navy Postgraduate school in 1966 with a master's degree in communications engineering ("Stephen P Leane and Dana T Willcox Marriage Index Entry," Ancestry.com).

Leane worked in various communications positions at the Coast Guard headquarters after earning his masters, and around the late 1960s and early 1970s worked as the executive officer of the Cutter's Steadfast in St. Petersburg, Florida. In 1972 he was appointed the commanding officer of the Point Reyes Coast Guard Communications Facility ("Coast Guard Groundbreaking at Point Reyes Station," *Petaluma-Argus Courier*). While stationed in Point Reyes he was instrumental in negotiations with the West Marin School for the school and the communications housing complex to jointly share the school's recreational facilities in exchange for the Coast Guard contributing money to a recreation fund ("Coast Guard and school pool recreation efforts," *Daily Independent Journal*). Around 1978 Leane was transferred to the Coast Guard's 11th District Long Beach Station and acted as a Planning Officer in Staff of Commander ("Navy will meet," *Camarillo Daily News*). In 1986 he worked for the Coast Guard in Alaska monitoring commercial fishing fleets and was involved in a tense encounter in Soviet waters during this time. In 1987 he received the Captain David H. Jarvis Award for Inspirational Leadership from the Navy ("Award Recipients for the Annual Navy League Awards," Navy League of the United States). At unknown times in his career, he also served in Honolulu and Washington D.C. for the Coast Guard.

After retiring from the Coast Guard in 1987, he lived in Yuba City, California and worked as a director of general services for the county. A year after moving to Yuba City he moved to San Luis Obispo with his wife, and in 1991 became the harbor manager of Port San Luis (Porter, *The County Telegram-Tribune*). He and his wife have two children.

*Phillip Ellia*

Phillip Ellia was born on July 12, 1930, in Fitchburg, Massachusetts to Suka and Seloka Ellia ("Phillip Ellia 1940 Census Entry," Ancestry.com). He joined the Coast Guard as a communications officer circa 1950 and married Ardyth Loreen Frick on August 1, 1951 in Hoquiam, Washington ("Coast Guard Groundbreaking at Point Reyes Station," *Petaluma-Argus Courier*.; "Marriage Certificate No. 21298," Ancestry.com) Around this time he was stationed at a Coast Guard station in Seattle, Washington, and served at a station in Portland, Maine out of Coos Bay in circa 1959 ("Phillip Ellia 1959 Portland, Maine City Directory Entry," Ancestry.com). During the 1960s Ellia served for the Coast Guard in Wisconsin; Adak Island, Alaska; and Guam both as a communications officer on ships and in land-based stations. In the late 1960s he served as the assistant chief for the communications branch in San Francisco, California on the staff of the commander, and in 1972 he was assigned as the executive officer of the Point Reyes Coast Guard Communications Station ("Coast Guard Groundbreaking at Point Reyes Station," *Petaluma-Argus Courier*). He lived in the San Francisco Bay Area until at least 1974, and by the mid-1980s had retired from the Coast Guard and relocated to Weymouth, Massachusetts with his wife. In 1988 his wife passed away in Weymouth. His last recorded residence was in 2020 in Weymouth, Massachusetts, and he and his wife had at least two children ("Ardyth Loreen Ellia Obituary," Ancestry.com).

Despite the communications stations themselves being built with relative ease, there were multiple issues with the planning and construction of the accompanying family housing complex. The Coast Guard originally proposed to convert the Inverness Valley Inn and pastureland on Tomales Bay into housing facilities in 1969. However, local residents and Marin County planners objected to the plans on the grounds that population density of the area would skyrocket to twice the proposed density outlined in the West Marin Master Plan, and that the development of the inn would diminish the rustic feeling of the town (Cook, "Marin Village Battling Coast Guard Development").

Despite Coast Guard officials designating the Inverness site as the best location for the housing complex due to its proximity to the communications stations and adequate water on site, in August of 1971 officials announced the housing complex would be constructed adjacent to the town of Point Reyes Station on the 37-acre subject property (EIP Corporation, 29). Previously the property had served as pastureland for surrounding farms **(Figures 18 and 19)**. 109 buildings were present in Point Reyes Station prior to construction of the facility, and the population of the town was 394. The construction of the subject property, located northeast of Point Reyes Station, would add 13 buildings and 175 people to the community (EIP Corporation, 28). Gil Construction Company of Pacheco, California was commissioned to build the $1.1 million complex, and on July 7, 1972, a groundbreaking ceremony was held on the property with local residents and invited government officials ("Coast Guard Groundbreaking at Point Reyes Station," *Petaluma-Argus Courier*).

Construction of the residential buildings were planned to be completed in March of 1973, but delays occurred again due to several reasons **(Figure 20)** (EIR Corporation, 29). First, construction costs exceeded the budget, prompting changes to construction plans. Second, local attorney Paul Keyfetz challenged the construction due to the lack of an Environmental Impact Report prior to groundbreaking, which the Coast Guard explained was due to these reports not being required in 1971 when the project was authorized. Finally, existing and new wastewater treatment issues in Point Reyes Station complicated construction, an issue that continually plagued the facility (EIR Corporation, 30). The Environmental Health Department of the Marin County Public Health Department already disapproved of Point Reyes Station's septic tank system that contained its sewage on site until private contractors could truck the waste away. The confluence of low elevation, soil type, and frequent rainfall in Point Reyes Station, caused sewage leaks on several occasions into Tomales Bay and surrounding pastureland. Concerns were raised that the introduction of the Coast Guard Housing Facility could complicate the issues further (EIR Corporation, 25). Originally the Coast Guard planned to build its own sewage reclamation system, but after the North Marin County Water District was advised in June of 1970 to oversee construction, and after several rejected locations, the Coast Guard employed the Environmental Impact Planning Corporation to prepare an Environmental Impact Statement to better determine the fate of the facility's wastewater system. Ultimately sewage concerns were not remedied before completion of the housing complex, and like Point Reyes Station, the housing facility planned to have its waste contained on on-site in septic tanks that would be trucked into Petaluma for treatment (Wells, "Rescue only part of coast guard job").

The facility was designed by architect Kenneth A. Klein of Fresno, California and engineers from the U.S. Coast Guard's 12th District, Office of Civil Engineering located in San Francisco. The property was constructed by the Gil Construction Company of Pacheco, California. Full scale radio operations began at the communications station on February 1, 1973, and the housing facility was officially completed in 1974.

*Kenneth A. Klein*

Kenneth August Klein was born on November 5, 1932, in Los Angeles, California to Edward T. Klein and Sophia Moser, and was raised in Pasadena, California ("Kenneth August Klein Obituary," *The Fresno Bee.*; "Kenneth Klein 1950 Census Entry," Ancestry.com). He attended Herbert Hoover High School in Glendale, California from 1947-1950, and started attending Pasadena Junior College in 1951 ("Kenneth Klein Yearbook Picture," Ancestry.com.; "Pasadena Junior College Architecture Club Entry," Ancestry.com). At Pasadena Junior College he was a member of the Architecture Club and modern design was a focus of the group. In 1955 Klein was a senior in the California State Polytechnic School studying architectural engineering, and on June 25, 1955, Klein married Shirley Thurber of Fresno, California at the Calvary Presbyterian Church ("Shirley Thurber Will Recite Vows in June Wedding," *The Fresno Bee*).

By 1973 Klein relocated to Fresno where he worked as an architect and acted as lieutenant governor of the Kiwanis Club ("News in Brief - Kiwanis Club," *The Fresno Bee*). In 1973 he designed the Point Reyes Coast Guard Communications Housing Facility for the U.S. Coast Guard (Klein, "United States Coast Guard Housing: Point Reyes Station, California"). In 1975 his wife Shirley passed away, and on June 3, 1978, he remarried to Georgiea T. Skinner in Fresno ("Kenneth August Klein Obituary," *The Fresno Bee.*; "Kenneth A. Klein and Georgiea T. Skinner," Ancestry.com). He and Skinner divorced in September of 1984, and the same year he remarried for a third time to Twyla Hinson-Bane ("Kenneth A. Klein and Georgiea T, Ancestry.com.; "Kenneth August Klein Obituary," *The Fresno Bee*). In 1987 Klein and Hinson-Bane were baptized as Jehovah's Witnesses and he was known as a devout follower of the faith for the remainder of his life. He worked at Fresno City College for 40 years as an architecture professor, and in his private practice notably volunteered to build and plan Jehovah's Witness houses of worship for 20 years. He passed away in Fresno, California on January 1, 2017, at the age of 85. He was survived by two children from Thurber and four adopted children from Hinson-Bane.

*U.S. Coast Guard, 12th District, Office of Civil Engineering, San Francisco*

The U.S. Coast Guard (USCG) is organized in two geographic regions (Atlantic, Pacific) and three organizational divisions: Deputy Commandant for Mission Support (DCMS), Deputy Commandant for Operations (DO), and Direct Reports. All are overseen by USCG Headquarters. The civil engineering for the subject property was designed by the Office of Civil Engineering of the 12th District, Pacific

Region, which was located in San Francisco and is no longer in operation. Currently, District 11 (located in Alameda, California) is responsible for Coast Guard activities in California, Nevada, Utah and Arizona. According to the United States Coast Guard:

> "The Office of Civil Engineering is responsible for managing the shore facility capital asset portfolio for the Coast Guard, providing the necessary planning, designing, contracting, acquiring, engineering and environmental stewardship services to support the "right" facility, at the "right" location, at the "right" time, and for the "right" cost. The office also provides technical support for visual and audible aids to navigation and pollution response hardware." (U.S. Coast Guard, "Program Offices" and "Organizational Chart")

*Gil Construction Company*

Gil Construction Company was located in Pacheco, California and operated from ca. 1960s to the 1970s ("Coast Guard Groundbreaking at Point Reyes Station," *Petaluma-Argus Courier*). They were successful in bidding for building contracts throughout Northern California, primarily in the San Francisco Bay area. Building projects mainly consisted of large municipal buildings and facilities for cities, universities, and the federal government ("Gil Awarded Pittsburg Contract," *Oakland Tribune*.; "College Contract to Pacheco Firm," *Morning News-Gazette*.; "Army Awards Pact for SC Pump Station," *Santa Cruz Sentinel*). In the 1970s their name changed to the Gil-Wynn Construction Company ("Westmoor Bid Awarded," *South San Francisco Enterprise-Journal*). This company built the original complex in 1973-1974.

*Post-1974 to Present*

After 1974, the Point Reyes Coast Guard Housing Complex provided housing for hundreds of enlisted Coast Guard personnel **(Figure 21)**. The facility included 11 residential buildings that housed Coast Guard personnel and their families, including ten family townhouses on Commodore Webster Drive and one Bachelors Enlisted Quarters (Building 50). A Galley (Building 1) served as a cafeteria for the Bachelors Enlisted Quarters, and multiple recreation facilities, including pavilions, a basketball court, tennis court, pool and spa were provided to residents. In 1975, Stephen P. Leane negotiated with the West Marin School to share joint access of the school's recreation facilities in exchange for a contribution to the school's recreation fund from the Point Reyes Coast Guard ("Coast Guard and school pool recreation efforts," *Daily Independent Journal*). In the 1980s agency cutbacks forced the closure of several San Francisco Bay Area Coast Guard stations. The then-90 employee Point Reyes Coast Guard Housing Complex remained one of the few stations unaffected by the cutbacks (Horowitz, "Coast Guard cutbacks boost boating risk").

The 1990s and 2000s saw a series of alterations to both the structures and sewage system of the Point Reyes Coast Guard Housing Complex. In 1993, the Coast Guard authorized a rehabilitation project to update the residential buildings in the complex, which largely included rehabilitation of the townhouse interiors,

fenestration, and some of the siding for both the townhouses and the Bachelors Enlisted Quarters (U.S. Coast Guard Civil Engineering Division, "CAMPSAC Housing Rehab," 1). In 1995 the plans were revised, and construction was completed in ca. 1997 date by Gil Construction & Associates (note: Despite a similar name, this is a different company that the Gil Construction Company that built the subject property in the 1970s).

*Gil Construction & Associates*

Gil Construction & Associates was founded in 1995 as a Residential and Commercial General Contractor to serve the San Francisco Bay and Peninsula region. Their headquarters is located in Millbrae, California and their owner and director of operations in the San Francisco Bay Area is Ron Gil. They are currently still in operation and specialize in residential and commercial construction services ("About Gil Construction & Associates Inc.," Gil Construction & Associates, Inc.). This company worked on the renovations to the subject property in the 1990s.

In 1997 the Coast Guard conducted a study on new strategies to dispose of wastewater on the property, as wastewater was still being transported to Petaluma for treatment, which was both costly and had the potential to contaminate the nearby Nicasio Reservoir and Tomales Bay in the process of transportation (Sox, 1). The status quo system was still considered to be a primary choice for future wastewater treatment, but new methods were also considered including: the creation and use of septic tanks and leach fields at the subject property and neighboring Toby Giacommi property, the construction of a secondary treatment plant for nearby non-residential reuse operations, and the creation of a city-wide municipal system for full sewage treatment. However, action does not seem to have been taken until 2009, when the Coast Guard rehabilitated the previous sump tank system (U.S. Coast Guard Civil Engineering Division, "Sewer System Rehab," 1). It appears that the sewage line that runs under Commodore Webster Drive was simply updated and the sump tanks already employed were replaced with superior models, indicating that the Point Reyes Coast Guard Housing Complex still does not have a process for treating wastewater on-site in any capacity. Three septic tanks remain on the western side of the property (Tetra Tech, Inc., A-16).

At an unknown time, Commander Glenn Stocks became the final commanding officer of the CAMPSAC station (Johnson, "Affordable housing plan gets support"). Around 2013 a nationwide trend of decommissioning surplus military facilities affected Coast Guard stations across the San Francisco Bay area (*Associated Press*, "Bay Area bases to be closed"). Beginning in 2014, Marin County and the Coast Guard also entered negotiations to transform the Point Reyes Coast Guard Housing Complex into affordable housing **(Figure 22).** These two factors seem to have contributed to the CAMPSAC communications facilities closure on September 11, 2015, and the County of Marin purchased the vacant property in 2019 ("Cdr. Glenn Stocks, commanding officer of communications," NARA & DVIDS Public Domain Archive.; Johnson, "Affordable housing plan gets support"). Since 2019 the Marin County Fire Department has used the former housing facility as a storage and training facility.

## Evaluation Summary

The evaluation of the subject property is summarized below, and the detailed evaluation can be found in the Appendix, *Department of Parks and Recreation 523 District Record: U.S. Coast Guard Housing Facility, Communications Area Master Station Pacific (CAMSPAC), Point Reyes Station.*

*Criterion A*

To be eligible under the event criterion, the property cannot merely be associated with historic events or trends but must have a specific association to be considered significant. The subject property provided housing for the USCG Communications Area Master Station Pacific (CAMSPAC) facilities at Point Reyes from its construction in 1974 until the property was vacated by the USCG in 2016, as part of a larger national trend in decommissioning surplus military facilities. The property was purchased by the County of Marin in 2019 to be rehabilitated into affordable housing and is currently used as a training facility by the Marin County Fire Department.

The facility was constructed late in the development of Coast Guard facilities in the area, which began with the establishment of the Point Reyes Lighthouse in 1870 and Life-saving Station in 1886. As a housing facility supporting the cluster of associated Coast Guard and communication facilities constructed in the 20th century on the Point Reyes peninsula, the subject property does not stand out singularly within this context. The property was constructed as part of a community-wide need to provide housing for the Coast Guard personnel stationed on the Point Reyes Peninsula. Research did not uncover any other important events or associations of the property with the development of Point Reyes Station or Coast Guard operations in the 20th century.

Based on the evaluation above, the subject property does not appear to qualify for listing in the National Register under Criterion A or California Register under Criterion 1 (Events).

*Criterion B*

During its history, the subject property served as housing and support services for Coast Guard personnel who were living and working on the Point Reyes peninsula. The subject property is associated with numerous individuals from the Coast Guard who resided at the property during its occupation from 1974 to 2016, including the original commanding officer Stephen P. Leane and executive officer Phillip Ellia. Research did not uncover any significant contributions by Leane and Ellia such that the subject property would be eligible under this criterion. To be found eligible under Criterion B, the property must be directly tied to a historically important person and the place where the individual conducted or produced the work for which he or she is known. If Leane and Ellia were found to have made significant contributions to the Coast Guard operations on the Point Reyes peninsula, those contributions would most likely be associated with the communications facilities they managed, not the housing complex where personnel lived. Research did not uncover the names of any additional individuals who would be significantly associated with the property.

Based on the evaluation above, the subject property does not appear to qualify for listing in the National Register under Criterion A or the California Register under Criterion 2 (Persons).

*Criterion C*

The subject property was constructed in 1974 in a Contemporary architectural style, which was widely applied by builders and architects for residential buildings across California and the United States in the late 20th century. The residential buildings are not distinctive in their architectural design and have minimal architectural detailing, limited to overhanging eaves, hipped roofs, and square posts supporting projecting porch entries. The non-residential buildings are not distinctive in their architectural design and architectural features include: overhanging eaves, hipped roofs, vertical panels on the facades, rows of metal or vinyl windows, shared balconies, and exterior metal stairs supported by metal posts. The structures and recreational features are functional and utilitarian in their design and do not represent any particular architectural style. Overall, these buildings and structures are moderate examples of Contemporary style architecture and do not embody the characteristics of a particular type, period, region, or method of construction.

The buildings were designed by architect Kenneth A. Klein of Fresno, California, the property was built by the Gil Construction Company of Pacheco, California, and the site and infrastructure was designed by engineers from the U.S. Coast Guard's 12th District office in San Francisco, California. Research did not reveal any evidence to indicate that Klein, Gil Construction, or the 12th district engineers should be considered master designers and therefore the subject property is not an example of a work of a master, nor does it possess high artistic values.

Based on the evaluation above, the subject property does not appear to qualify for listing in the National Register under Criterion C or the California Register under Criterion 3 (Design/Construction).

*Criterion D*

Criterion D/4 most commonly applies to archaeological resources. A separate archeological study is being conducted for the project by another consultant, which will cover the archeological evaluation of the property.

Where historical resources are concerned, Criterion D most commonly applies to transitional buildings or sites that demonstrate rare construction types or technologies such as an early use of a newly developed material, engineering techniques, or blending of design typologies. The subject property is not an example of a rare construction type and does not appear to qualify for listing in the National Register under Criterion D or California Register under Criterion 4 (Information Potential).

## Integrity

In order to qualify for listing in the National Register/California Register, a property must possess significance under one of the aforementioned criteria *and* retain sufficient historic integrity to convey its significance. The

subject property does not appear to be historically significant under any of the National Register/California Register criteria; therefore, an evaluation of integrity is not pertinent or included here.

### Conclusion

As outlined above, the subject property is not eligible for listing in the National Register/California Register due to its lack of significance under the evaluative criteria. Therefore, the subject property should not be considered a historical resource for the purposes of environmental review.

## III. References

Alshuth, Taylor and Thomas M. Oringer. *A Historical Resources Study for the Point Reyes Station U.S. Coast Guard Base Housing Project, Point Reyes Station U.S. Coast Guard Base, Marin County, California*. 2016.

Essel Environmental Engineering and Consulting. *Phase I Environmental Site Assessment: Commodore Webster Drive, Point Reyes Station, California*. 2021.

EMG, *Facility Condition Assessment of Point Reyes Station, Commodore Webster Drive, Point Reyes, California*. 2018.

Tetra Tech. *Environmental Compliance Due Diligence Activities Report: U.S. Coast Guard Point Reyes Station, California Housing Units.* 2016.

## IV. Preparer's Qualifications

Gretchen Hilyard Boyce (B.A. Architectural History, University of Virginia; M.S. Historic Preservation, University of Pennsylvania) is a Principal Architectural Historian and Cultural Landscape Specialist and meets the *Secretary of the Interior's Professional Qualifications Standards* for Architectural History and History. Ms. Boyce has 20 years of specialized experience in architectural history, historic preservation, and cultural landscapes. Ms. Boyce's work has focused on California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), National Register, and Section 106 cultural resources assessments throughout California.

Ettienne LeFebre (B.A. History, California State University, Sacramento), is an intern with Groundwork Planning & Preservation. Ms. LeFebre is a Master of Arts candidate in Public Historic at California State University, Sacramento.

# V. Appendix

- Location Maps
- Department of Parks and Recreation 523 District Record
- Department of Parks and Recreation 523 Primary Records




Figure A: Location Map, Google Earth modified by author, 2023. Study area outlined in yellow.




Figure B: Site Plan prepared by Groundwork Planning & Preservation. Base: Google Earth aerial, 2023.

# APPENDIX E

# GEOTECHNICAL INVESTIGATION

ROCKRIDGE GEOTECHNICAL

Prepared for **Eden Housing**

**GEOTECHNICAL INVESTIGATION**
**PROPOSED RESIDENTIAL DEVELOPMENT**
**RENOVATION AND IMPROVEMENTS**
**POINT REYES COAST GUARD HOUSING**
**POINT REYES STATION, CALIFORNIA**

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July 14, 2022
Project No. 21-2050

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ROCKRIDGE GEOTECHNICAL

July 14, 2022
Project No. 21-2050

Mr. Jeremy Hoffman
Associate Director of Real Estate Development
Eden Housing
22645 Grand Street
Hayward, California 94541

Subject: Final Report
Geotechnical Investigation
Proposed Residential Development Renovation and Improvements
Point Reyes Coast Guard Housing
Point Reyes Station, California

Dear Mr. Hoffman,

This report presents the results of our geotechnical investigation for the proposed residential development renovations to be performed at the Point Reyes Coast Guard Housing in Point Reyes Station, California. Our geotechnical investigation was performed in accordance with our proposal dated June 10, 2021.

The subject property is located at the terminus of Commodore Webster Road, approximately one-quarter mile east of downtown Point Reyes Station. The site is currently occupied by 10 townhome buildings, two administrative buildings, parking lots, a tennis court, and landscaped areas.

Plans are to renovate the existing buildings, including adding 14 one-bedroom apartments, installing an elevator, and constructing an enlarged community kitchen/gathering space at Building 50. Other proposed improvements include upgrades to wastewater treatment facilities, constructing additional community spaces, and upgrading outdoor common spaces, roadways, pedestrian paths, and sidewalks.

From a geotechnical standpoint, we conclude the proposed improvements can be constructed as planned. We conclude the proposed improvements may be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades

The recommendations contained in our report are based on a limited subsurface exploration and laboratory testing program. Consequently, variations between expected and actual subsurface conditions may be found in localized areas during construction. Therefore, we should be engaged to observe excavation, grading, and installation of

foundations, during which time we may make changes in our recommendations, if deemed necessary.

We appreciate the opportunity to provide our services to you on this project. If you have any questions, please call.

Sincerely,
ROCKRIDGE GEOTECHNICAL, INC.




Craig S. Shields, P.E., G.E.
Principal Geotechnical Engineer

Enclosure

ROCKRIDGE GEOTECHNICAL

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Figure 2 Site Plan

Figure 3 Regional Geologic Map

Figure 4 Regional Fault Map

Figure 5 Liquefaction Susceptibility Map


### APPENDIX A


Figures A-1 through A-4 Logs of Borings B-1 through B-4

Figures A-5 Soil Classification Chart

Figure A-6 Physical Properties Criteria for Rock Descriptions


### APPENDIX B


Figure B-1 Plasticity Chart

Figure B-2 Particle Size Distribution

Figure B-3 Soil Corrosivity Test Results


### APPENDIX C


Logs of Previous Borings and Monitoring Wells by Questa

ROCKRIDGE GEOTECHNICAL

**GEOTECHNICAL INVESTIGATION**
**PROPOSED RESIDENTIAL DEVELOPMENT RENOVATION AND IMPROVEMENTS**
**POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
**Point Reyes Station, California**

## 1.0 INTRODUCTION

This report presents the results of the geotechnical investigation performed by Rockridge Geotechnical, Inc. for the proposed residential development renovation and improvements to be performed at the Point Reyes Coast Guard Housing at 100 Commodore Webster Drive in Point Reyes Station, California. The project site is at the terminus of Commodore Webster Drive, east of its intersection with Mesa Road, as shown on the Site Location Map, Figure 1.

The site is relatively level and located approximately one-quarter mile east of downtown Point Reyes Station. It is currently occupied by 10 at-grade, wood-framed, two- to three-story townhome buildings and two administrative buildings, as well as parking lots and landscaped areas.

Plans are to renovate the existing buildings, including adding 14 one-bedroom apartments, installing an elevator, and constructing an enlarged community kitchen/gathering space at Building 50. Other proposed improvements include improvements to wastewater treatment facilities, constructing additional community spaces, and upgrading outdoor common spaces, roadways, pedestrian paths, and sidewalks.

## 2.0 SCOPE OF SERVICES

Our investigation was performed in accordance with our proposal dated June 10, 2021. Our scope of services consisted of exploring subsurface conditions at the site by drilling four test borings, performing laboratory testing on selected soil samples, and performing engineering analyses to develop conclusions and recommendations regarding:

- site seismicity and seismic hazards, including potential for liquefaction and liquefaction-induced ground failure

- the most appropriate foundation type(s) for the proposed improvements
- design criteria for the recommended foundation type(s), including vertical and lateral capacities
- estimates of foundation settlement under static and seismic conditions
- design groundwater elevation
- lateral earth pressures for design of the retaining walls, including below-grade walls for the proposed elevator pit
- subgrade preparation for slab-on-grade floors and exterior flatwork
- site grading and excavation, including criteria for fill quality and compaction
- flexible and rigid pavement sections
- corrosivity of the near-surface soil and the potential effects on buried concrete and metal structures and foundations
- 2019 California Building Code (CBC) site class and design spectral response acceleration parameters
- construction considerations.

## 3.0 PREVIOUS GEOTECHINCAL INVESTIGATION

Questa Engineering Corporation (Questa) previously performed subsurface investigations at the site in November 2000 and December 2020. Questa's investigation in 2020 included drilling four test borings to depths ranging from 21 to 40 feet below the ground surface (bgs). In 2000, Questa installed seven monitoring wells to depths ranging from 13 to 40 feet bgs. Monitoring wells MW-1 and MW-2 were drilled east and northeast of the project site, respectively, and were not considered for our investigation. The approximate locations of Questa's test borings and monitoring wells MW-3 through MW-7 are shown on Figure 2. The logs of the borings and monitoring wells are attached in Appendix C.

## 4.0 FIELD INVESTIGATION AND LABORATORY TESTING

Our field investigation consisted of drilling four test borings and performing laboratory testing on selected soil samples. Prior to advancing the borings, we obtained a drilling permit from the Marin County Environmental Health Services (MCEHS). We also contacted Underground

Service Alert (USA) to notify them of our work, as required by law, and retained a private utility locator, Precision Locating, LLC, to reduce the potential for encountering existing buried utilities in the boreholes. Details of the field investigation and laboratory testing are described below.

### 4.1 Test Borings

Subsurface conditions at the site were explored by drilling four test borings, designated as B-1 through B-4. at the approximate locations shown on Figure 2. The borings were advanced on July 6, 2021 by Benevent Building of Concord, California to a depth of 21-1/2 feet below the existing ground surface (bgs) using a limited-access drill rig equipped with four-inch-diameter solid-stem flight augers. During drilling, our field engineer logged the soil encountered and obtained representative samples for visual classification and laboratory testing. The logs of the borings are presented in Appendix A on Figures A-1 through A-4. The soil and bedrock encountered in the borings were classified in accordance with the classification charts shown on Figures A-5 and A-6, respectively.

Soil samples were obtained using the following samplers:

- Modified California (MC) split-barrel sampler with a 3.0-inch outside diameter and 2.5-inch inside diameter, lined with 2.43-inch inside diameter stainless steel tubes.
- Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside and 1.5-inch inside diameter; the sampler was designed to accommodate liners, but liners were not used.

The type of sampler used was selected based on material type and the desired sample quality for laboratory testing. The MC and SPT samplers were driven with a 140-pound safety hammer falling 30 inches per drop using a rope-and-cathead system. The samplers were driven up to 18 inches and the hammer blows required to drive the samplers were recorded every six inches and are presented on the boring logs. A “blow count” is defined as the number of hammer blows per six inches of penetration or 50 blows for six inches or less of penetration. The blow counts required to drive the MC and SPT samplers were converted to approximate SPT N-values using factors of 0.7 and 1.2, respectively, to account for sampler type and approximate hammer energy.

The blow counts used for this conversion were the last two blow counts. The converted SPT N-values are presented on the boring logs.

Upon completion, the boreholes were backfilled with cement grout in accordance with MCEHS requirements. Soil cuttings generated from the soil borings were spread near the boring locations.

### 4.2 Laboratory Testing

We re-examined each soil and bedrock sample obtained from our borings to confirm the field classifications and selected representative samples for laboratory testing. Soil samples were tested by Construction Materials Testing, Inc. of Livermore, California to measure moisture content, dry density, Atterberg limits, particles passing the No. 200 sieve, and resistance value (R-value). Soil samples were also tested by Project X Corrosion Engineering of Murrieta, California to measure corrosivity potential. The results of the laboratory tests are presented on the boring logs and in Appendix B.

## 5.0 SUBSURFACE CONDITIONS

Regional geologic information (Figure 3) indicates the site is underlain by Holocene-age alluvium (Qhy). The site is near the geologic contact of Pleistocene-age alluvium, Holocene-age alluvium, and Pleistocene-age marine terrace deposits. A review of an aerial photograph from 1965, which was prior to development of the site, indicates the site sloped gently down to the southeast prior to development.

Based on the results of our field investigation and the previous field investigations by Questa, we conclude the site is blanketed by fill ranging in thickness from approximately 1-1/2 feet at the Boring B-1 location to about six feet at the Boring B-2 location. The logs of the Questa borings drilled in 2020 indicate fill ranging in thickness from from 3 to 4 feet was encountered in Borings CG-2 through CG-4. No fill was noted on the log of Boring CG-1. The fill in our borings consisted of medium dense to dense clayey sand and very stiff to hard clay with varying sand and gravel content. Based on the SPT N-values, the fill appears to be well compacted. Atterberg limits tests performed on two samples of the near-surface clay at depths of 1.5 and 4

feet bgs resulted in plasticity indices (PI) of 4 and 9, respectively indicating the clay has a low expansion potential.

At the locations of Borings B-1, B-2, and B-4, the fill is underlain by native soil consisting of terrace deposits and old alluvium that extends to depths ranging from about 8 to 18 feet bgs. The native soil encountered in our borings consisted of medium dense to dense clayey sand with varying gravel content, dense clayey gravel with sand, dense sand, and hard sandy clay with gravel. Below the native soil, we encountered either residual soil (i.e., decomposed bedrock) consisting of very stiff to hard sandy clay or deeply to completely weathered Franciscan mélange bedrock. At the Boring B-3 location, moderately weathered sandstone was encountered below the fill at a depth of approximately five feet bgs. The Franciscan mélange bedrock encountered in our borings was moderately to completely weathered and included sandstone, shale/serpentinite, and greenstone.

### 5.1 Groundwater

Groundwater was encountered in borings B-1 and B-2 at depths of 12 feet and 11 feet bgs, respectively. The groundwater levels measured in the borings may not have stabilized at the time when the measurements were taken. During Questa Engineering's field investigation in 2000, groundwater was encountered between 8 and 33 feet bgs. To further estimate the highest potential groundwater level at the site, we reviewed information on the State of California Water Resources Control Board GeoTracker website (https://geotracker.waterboards.ca.gov/). From the GeoTracker website, we obtained information from monitoring wells installed for a former Chevron storage facility located at 11095 State Route 1, located about 0.25 miles southwest of the site. Summary of groundwater level measurements presented in the *2010 Annual Groundwater Monitoring Report, Former Redwood Oil/Chevron Bulk Terminal 20-6457, 11095 State Route 1, Point Reyes, California* prepared by Conestoga-Rovers & Associates (CRA) indicate the groundwater level was measured between May 2004 to May 2010. Measured groundwater levels ranged from 4.37 to 14.18 feet bgs.

The depth to groundwater is expected to vary several feet annually depending on rainfall amounts. We estimate the historic high groundwater at the site to be about five feet bgs.

## 6.0 SEISMIC CONSIDERATIONS

### 6.1 Regional Seismicity

The site is in the Coast Ranges geomorphic province of California that is characterized by northwest-southeast trending valleys and ridges. These topographic features are controlled by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent strike-slip faulting along the San Andreas Fault system. The San Andreas Fault is more than 600 miles long from Point Arena in the north to the Gulf of California in the south. The Coast Ranges province is bounded on the east by the Great Valley and on the west by the Pacific Ocean.

The major active faults in the area are the San Andreas, San Gregorio and Hayward faults. These and other faults of the region are shown on Figure 4. For these and other active faults within a 50-kilometer radius of the site, the distance and direction from the site and characteristic moment magnitude[1] [Petersen et al. (2014) & Thompson et al. (2016)] are summarized in Table 1. These references are based on the Third Uniform California Earthquake Rupture Forecast (UCERF3), prepared by Field et al. (2013).

[1] Moment magnitude is an energy-based scale and provides a physically meaningful measure of the size of a faulting event. Moment magnitude is directly related to average slip and fault rupture area.

**TABLE 1**
**Regional Faults and Seismicity**

| Fault Segment | Approximate Distance from Site (km) | Direction from Site | Characteristic Moment Magnitude |
|---|---|---|---|
| Total North San Andreas (SAO+SAN+SAP+SAS) | 1.3 | Southwest | 8.04 |
| North San Andreas (North Coast, SAN) | 1.3 | Southwest | 7.52 |
| San Gregorio (North) | 17 | Southeast | 7.44 |
| North San Andreas (Peninsula, SAP) | 22 | Southeast | 7.38 |
| Total Hayward + Rodgers Creek (RC+HN+HS+HE) | 31 | East | 7.58 |
| Hayward (North, HN) | 31 | East | 6.90 |
| Rodgers Creek - Healdsburg | 31 | Northeast | 7.19 |
| West Napa | 48 | East | 6.97 |
| Maacama | 50 | Northeast | 7.55 |

In the past 200 years, four major earthquakes have been recorded on the San Andreas Fault. In 1836, an earthquake with an estimated maximum intensity of VII on the Modified Mercalli (MM) scale occurred east of Monterey Bay on the San Andreas Fault (Toppozada and Borchardt 1998). The estimated moment magnitude, $M_w$, for this earthquake is about 6.25. The San Francisco Earthquake of 1906 caused the most significant damage in the history of the Bay Area in terms of loss of lives and property damage. This earthquake created a surface rupture along the San Andreas Fault from Shelter Cove to San Juan Bautista approximately 470 kilometers in length. It had a maximum intensity of XI (MM), an $M_w$ of about 7.9, and was felt 560 kilometers away in Oregon, Nevada, and Los Angeles. The Loma Prieta Earthquake of October 17, 1989 had an $M_w$ of 6.9 and occurred approximately 140 kilometers south of the site.

In 1868, an earthquake with an estimated maximum intensity of X on the MM scale occurred on the southern segment (between San Leandro and Fremont) of the Hayward Fault. The estimated $M_w$ for the earthquake is 7.0. In 1861, an earthquake of unknown magnitude (probably an $M_w$ of about 6.5) was reported on the Calaveras Fault. The most recent significant earthquake on this fault was the 1984 Morgan Hill earthquake which had an $M_w$ of 6.2.

In the North Bay, on August 24, 2014, an earthquake occurred on a splay of the West Napa fault about 48 kilometers northeast of the site. The epicenter of this earthquake was located about 10 kilometers southwest of the Town of Napa, California. The earthquake had an $M_w$ of 6.0 and a maximum intensity of VIII on the MM scale.

As a part of the UCERF3 project, researchers estimate that the probability of at least one $M_w \geq$ 6.7 earthquake occurring in the greater San Francisco Bay Area during a 30-year period (starting in 2014) is 72 percent. The highest probabilities are assigned to sections of the Hayward (South), Calaveras (Central) and the North San Andreas (Santa Cruz Mountains) faults. The respective probabilities are approximately 25, 21, and 17 percent.

## 6.2 Geologic Hazards

Because the project site is in a seismically active region, we evaluated the potential for earthquake-induced geologic hazards including ground shaking, ground surface rupture, liquefaction,[2] lateral spreading,[3] and cyclic densification[4]. We used the results of our field investigation to evaluate the potential of these phenomena occurring at the project site.

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2 Liquefaction is a phenomenon where loose, saturated, cohesionless soil experiences temporary reduction in strength during cyclic loading such as that produced by earthquakes.

3 Lateral spreading is a phenomenon in which surficial soil displaces along a shear zone that has formed within an underlying liquefied layer. Upon reaching mobilization, the surficial blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

4 Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement.

### 6.2.1 Ground Shaking

The seismicity of the site is governed by the activity of the San Andreas fault, which is located approximately 1.3 kilometers southwest of the site, although ground shaking from future earthquakes on other faults will also be felt at the site. The intensity of earthquake ground motion at the site will depend upon the characteristics of the generating fault, distance to the earthquake epicenter, and magnitude and duration of the earthquake. We judge that strong to very strong ground shaking could occur at the site during a large earthquake on one of the nearby faults.

### 6.2.2 Ground Surface Rupture

Historically, ground surface displacements closely follow the trace of geologically young faults. The site is not within an Earthquake Fault Zone, as defined by the Alquist-Priolo Earthquake Fault Zoning Act, and no known active or potentially active faults exist on the site. We therefore conclude the risk of fault offset at the site from a known active fault is very low. In a seismically active area, the remote possibility exists for future faulting in areas where no faults previously existed; however, we conclude the risk of surface faulting and consequent secondary ground failure from previously unknown faults is also very low.

### 6.2.3 Liquefaction and Associated Hazards

When a saturated, cohesionless soil liquefies, it experiences a temporary loss of shear strength created by a transient rise in excess pore pressure generated by strong ground motion. Soil susceptible to liquefaction includes loose to medium dense sand and gravel, low-plasticity silt, and some low-plasticity clay deposits. Flow failure, lateral spreading, differential settlement, loss of bearing strength, ground fissures and sand boils are evidence of excess pore pressure generation and liquefaction.

The site is located within a “low” level of liquefaction susceptibility as shown on the map titled *Liquefaction Susceptibility Hazards Map 2-11, San Francisco Bay Region, California*, dated 2000 (see Figure 5). We evaluated the liquefaction potential of soil encountered below groundwater at the site using data collected in our borings and the methodology proposed by

Youd et al. (2001). Our analysis was performed using a high groundwater depth of five feet bgs. In accordance with the 2019 California Building Code (CBC), we used a peak ground acceleration of 1.12 times gravity (g) in our liquefaction evaluation; this peak ground acceleration is consistent with the Maximum Considered Earthquake Geometric Mean ($MCE_G$) peak ground acceleration adjusted for site effects ($PGA_M$) for a Site Class D. We also used a moment magnitude 8.04 earthquake, which is consistent with the mean characteristic moment magnitude for the San Andreas Fault, as presented in Table 1.

Based on the results of our analyses, we conclude the potential for liquefaction and ground failures associated with liquefaction, including lateral spreading, to occur at the site during a seismic event is low due to the high relative density and/or cohesion of the soil below the design groundwater level.

### 6.2.4 Cyclic Densification

Cyclic densification (also referred to as differential compaction) of non-saturated sand (sand above groundwater table) can occur during an earthquake, resulting in settlement of the ground surface and overlying improvements. Based on our investigation, we conclude the granular soil above the groundwater table is not susceptible to cyclic densification because of its cohesion and/or relative density. Therefore, we conclude the potential for settlement of the ground surface and the site improvements due to cyclic densification is very low.

## 8.0 RECOMMENDATIONS

Our recommendations for site preparation and grading, foundation design, pavement design, seismic design, and other geotechnical aspects of the project are presented in this section.

### 8.1 Site Preparation and Grading

Site demolition for any new construction, including the addition at Building 50, should include the removal of all existing pavements, underground utilities and buried foundations that will interfere with new construction. In general, abandoned underground utilities should be removed

to the property line or service connections and properly capped or plugged with concrete. Where existing utility lines are outside of the proposed addition footprint and will not interfere with the proposed construction, they may be abandoned in-place provided the lines are filled with lean concrete or cement grout to the property line. It may be feasible to leave existing foundations in place if they will not interfere with new construction; however, this should be evaluated on a case-by-case basis. Voids resulting from demolition activities should be properly backfilled with compacted fill under the observation of our field engineer and following the recommendations provided in this section.

In areas that will receive fill or improvements (i.e., pavement, foundations, or concrete flatwork), the soil subgrade should be scarified to a depth of at least eight inches, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction[5]. The upper eight inches of soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding. The soil subgrade should be kept moist until it is covered by fill or improvements.

Fill should consist of on-site soil or imported soil (select fill) that is free of organic matter, contains no rocks or lumps larger than three inches in greatest dimension, has a liquid limit of less than 40 and a plasticity index lower than 12, and is approved by the Geotechnical Engineer. Samples of proposed imported fill material should be submitted to the Geotechnical Engineer at least three business days prior to use at the site. The grading contractor should provide analytical test results or other suitable environmental documentation indicating the imported fill is free of hazardous materials at least three days before use at the site. If this data is not available, up to two weeks should be allowed to perform analytical testing on the proposed imported material.

Fill should be placed in horizontal lifts not exceeding eight inches in uncompacted thickness, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent

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5 Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same material, as determined by the ASTM D1557 laboratory compaction procedure.

relative compaction. Fill consisting of clean sand or gravel (defined as poorly-graded soil with less than five percent fines by weight) should be compacted to at least 95 percent relative compaction. Fill greater than five feet in thickness should also be compacted to at least 95 percent relative compaction.

### 8.1.1 Utility Trench Backfill

Excavations for trenches can readily be made with a backhoe. All trenches should conform to the current CAL-OSHA requirements. To provide uniform support, pipes or conduits should be bedded on a minimum of four inches of clean sand or fine gravel. After the pipes and conduits are tested, inspected (if required) and approved, they should be covered to a depth of six inches with clean sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill and should be placed and compacted according to the recommendations previously presented. Special care should be taken when backfilling utility trenches within the building footprint and beneath pavements. Poor compaction may result in excessive settlement and damage to the building and/or pavements. If imported clean sand or gravel (defined as poorly-graded soil with less than five percent fines by weight) is used for trench backfill, it should be compacted to at least 95 percent relative compaction. Jetting of trench backfill should not be permitted.

### 8.1.2 Exterior Concrete Flatwork

Exterior concrete flatwork that will not receive vehicular traffic (i.e. sidewalk) should be underlain by at least four inches of Class 2 aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.

### 8.1.3 Drainage and Landscaping

Positive surface drainage should be provided around the buildings to direct surface water away from foundations and below-grade walls. To reduce the potential for water ponding adjacent to

the buildings, we recommend the ground surface within a horizontal distance of five feet from the buildings slope down away from the buildings with a surface gradient of at least two percent in unpaved areas and one percent in paved areas. In addition, roof downspouts should be discharged into controlled drainage facilities to keep the water away from the foundation and below-grade walls.

### 8.2 Spread Footings

We anticipate the existing buildings, which are relatively light, are supported on spread footings bottomed in the existing fill, although some footings may extend into the native soil. If new loads will be imposed on the existing footings, test pits should be excavated to determine the depth and width of the footings. Assuming the footings are bottomed at least 18 inches below the lowest adjacent grade, an allowable bearing pressure of 2,500 pounds per square foot (psf) may be used to evaluate existing footings for dead-plus-live-load conditions. The value may be increased by one-third for total load conditions. We estimate settlement of existing footings will not exceed 1/2 inch.

Proposed improvements may be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades. Continuous footings should be at least 16 inches wide and isolated footings should be at least 18 inches wide. Footings should be bottomed at least 18 inches below the lowest adjacent soil subgrade. Spread footings should be designed using an allowable bearing pressure of 2,500 psf for dead-plus-live loads; this value may be increased by one-third for total design loads, which include wind or seismic forces; these values include factors of safety of at least 2.0 and 1.5, respectively. We estimate total settlement of new footings under static loads will not exceed 3/4 inch and differential settlement will be less than 1/2 inch over a horizontal distance of 30 feet.

Lateral loads may be resisted by a combination of passive pressure on the vertical faces of the footings and friction between the bottoms of the footings and the supporting soil. To compute lateral resistance provided by footings, we recommend using an equivalent fluid weight of 260 pounds per cubic foot (pcf). Passive pressure in the upper one foot of soil should be neglected

unless confined by a slab or pavement. Frictional resistance should be computed using a base friction coefficient of 0.30. The passive pressure and frictional resistance values include a factor of safety of at least 1.5 and may be used in combination without reduction.

We should check footing excavations prior to the placement of reinforcing steel. Footing excavations should be free of standing water, debris, and disturbed materials prior to placing concrete. If unsuitable bearing material is encountered at the bottom of footing excavations, as determined by our field engineer, the unsuitable material should be removed until competent bearing soil is reached. The overexcavation should be backfilled with lean concrete or controlled low-strength material (CLSM). If the unsuitable bearing material is less than one foot thick, the soil may be compacted in place to at least 90 percent relative compaction using a jumping-jack-type compactor.

If footings are excavated during the rainy season, they should incorporate a rat slab to protect the footing subgrade. This will involve over-excavating the footing by about 2 to 3 inches and placing lean concrete or CLSM in the bottom (following an inspection by our engineer). A rat slab will help protect the footing subgrade during the placement of reinforcing steel. Water, if present, can then be pumped from the excavations prior to the placement of structural concrete. The bottoms and sides of the footing excavations should be moistened following excavation and maintained in a moist condition until the concrete is placed.

### 8.3 Concrete Slab-on-Grade Floors

The subgrade for new slab-on-grade floors should be prepared in accordance with our recommendations in Section 8.1. Where water vapor transmission through the new floor slab is not desirable, we recommend installing a capillary moisture break and water vapor retarder beneath the floor slab. A capillary moisture break consists of at least four inches of clean, free-draining gravel or crushed rock. The particle size of the capillary break material should meet the gradation requirements presented in Table 2.

**TABLE 2**
**Gradation Requirements for Capillary Moisture Break**

| Sieve Size | Percentage Passing Sieve |
|---|---|
| 1 inch | 90 – 100 |
| 3/4 inch | 30 – 100 |
| 1/2 inch | 5 – 25 |
| 3/8 inch | 0 – 6 |

The vapor retarder should meet the requirements for Class B vapor retarders stated in ASTM E1745. The vapor retarder should be placed in accordance with the requirements of ASTM E1643. These requirements include overlapping seams by six inches, taping seams, and sealing penetrations in the vapor retarder.

Concrete mixes with high water/cement (w/c) ratios result in excess water in the concrete, which increases the cure time and can result in excessive vapor transmission through the slab/mat. Where the concrete is poured directly over the vapor retarder, we recommend the w/c ratio of the concrete not exceed 0.45. Water should not be added to the concrete mix in the field. If necessary, workability should be increased by adding plasticizers. In addition, the slab/mat should be properly cured. Before the floor covering is placed, the contractor should check that the concrete surface and the moisture emission levels (if emission testing is required) meet the manufacturer's requirements.

### 8.4 Permanent Retaining Walls

Retaining walls should be designed to resist static lateral earth pressures, lateral pressures caused by earthquakes, and traffic loads (if vehicular traffic is expected within a horizontal distance equal to 1.5 times the wall height). All on-site walls, including low retaining walls in landscaped areas, should be designed in accordance with the recommendations presented in this section, although checking the walls for seismic loading is not required for walls less than six feet high.

Retaining walls that are restrained from movement at the top or sides (e.g., a wall with a 90-degree turn) should be designed using the at-rest pressure presented in Table 3. Walls that are not restrained from rotation may be designed using the active pressure presented in Table 3.

**TABLE 3**
**Lateral Earth Pressures for Retaining Wall Design**

| Wall Restraint Condition | Wall Drainage | Static Equivalent Fluid Weight | Seismic Equivalent Fluid Weight[2] |
|---|---|---|---|
| Unrestrained | Drained | 35 pcf[1] | 35 pcf + 19 pcf |
| Unrestrained | Undrained | 80 pcf | 80 pcf + 9 pcf |
| Restrained | Drained | 55 pcf | 35 pcf + 47 pcf |
| Restrained | Undrained | 90 pcf | 80 pcf + 23 pcf |

1. Equivalent fluid weight (triangular distribution); pcf = pounds per cubic foot)
2. Seismic condition to be checked for walls that retain more than six feet of soil

The recommended pressures above are based on a level backfill condition with no additional surcharge loads. To avoid surcharging the elevator pit walls with lateral pressures imposed by the proposed footings, the footings should be bottomed below a zone-of-influence line projected upward at an inclination of 1.5:1 (horizontal:vertical) from the bottom of the below-grade walls. Where there will be vehicular traffic behind the top of a permanent wall within a horizontal distance equal to 1.5 times the height of the wall, the wall should be designed for vehicular surcharge of 50 psf, applied over the entire wall height.

To protect against moisture migration, below-grade walls should be waterproofed and water stops should be placed at all construction joints. Although the below-grade walls will be above the design groundwater level, water can accumulate behind the walls from other sources, such as rainfall, irrigation, and broken water lines, etc. If the "drained" earth pressures (i.e., pressures for above design groundwater table) presented above are used to design the walls, they will need to incorporate a drainage system. Alternatively, the walls may be designed for the recommended

"undrained" earth pressures (i.e., pressures for below the groundwater table) presented above over their entire height, in which case the drainage system may be omitted.

One acceptable method for back-draining a retaining wall is to place a prefabricated drainage panel against the back of the wall. The drainage panel should extend down to a perforated PVC collector pipe. The pipe should be surrounded on all sides by at least four inches of Caltrans Class 2 permeable material or 3/4-inch drain rock wrapped in filter fabric (Mirafi NC or equivalent). A proprietary, prefabricated collector drain system, such as Tremdrain Total Drain or Hydroduct Coil (or equivalent), designed to work in conjunction with the drainage panel may be used in lieu of the perforated pipe surrounded by gravel described above. The pipe should be connected to a suitable discharge point; a sump and pump system may be required to drain the collector pipes if the grades do not permit draining by gravity to the storm drain system.

If backfill is required behind walls, it should consist of engineered fill. Placement of the engineered fill may impose unacceptable surcharges on the walls. The project structural engineer should determine when the concrete has sufficient strength to resist surcharges imposed by compaction equipment. Bracing may be used to mitigate construction-related surcharge pressures. We recommend lightweight, hand-compaction equipment be used to minimize the potential for damage.

### 8.5 Flexible (Asphaltic Concrete) Pavement Design

The State of California flexible pavement design method was used to develop the recommended asphaltic concrete (AC) pavement sections. Results of laboratory tests indicate the near surface clay has an R-value of 44. Recommended pavement sections for traffic indices (TIs) ranging from 4.5 to 6.5 are presented in Table 4. The project civil engineer should determine the appropriate design TI based on the anticipated vehicular traffic the pavement will experience. We can provide additional pavement sections for different TIs upon request.

**TABLE 4**
**Asphalt Concrete Pavement Sections**

| Traffic Index | Asphaltic Concrete (inches) | Class 2 Aggregate Base R = 78 (inches) |
|---|---|---|
| 4.5 | 2.5 | 6.0[1] |
| 5.0 | 3.0 | 6.0 |
| 5.5 | 3.0 | 6.0 |
| 6.0 | 3.5 | 6.0 |
| 6.5 | 4.0 | 6.0 |

1. The minimum recommended AB thickness beneath AC pavements is six inches.

The soil subgrade beneath AC pavements should be scarified to a depth of eight inches, moisture-conditioned to near optimum moisture content, and compacted to at least 95 percent relative compaction. In addition, the subgrade should be a firm and non-yielding surface. The subgrade should be proof-rolled to confirm it is non-yielding prior to placing the aggregate base. The Class 2 aggregate base should be moisture-conditioned to near optimum moisture content and compacted to at least 95 percent relative compaction and be non-yielding

### 8.6 Portland Cement Concrete Pavement

Concrete pavement design is based on a maximum single-axle load of 20,000 pounds and a maximum tandem axle load of 32,000 pounds and moderate truck traffic (i.e., several trucks per week). The recommended rigid pavement section for these axle loads is six inches of Portland cement concrete (PCC) over six inches of Class 2 aggregate base. For areas that will receive fire truck traffic, the PCC thickness should be increased to seven inches. For areas that will experience only passenger vehicle traffic, the recommended pavement section is five inches of PCC over six inches of Class 2 aggregate base.

The modulus of rupture and unconfined compressive strength of the concrete should be at least 500 and 4,000 pounds per square inch (psi) at 28 days, respectively. Contraction joints should be

placed at maximum 15-foot spacing. Where the outer edge of concrete pavement meets asphalt pavement, the concrete slab should be thickened by 50 percent at a taper not to exceed a slope of 1 in 10. The pavement should be reinforced with a minimum of No. 4 bars at 18 inches on center in both directions.

The subgrade and aggregate base should be compacted in accordance with the recommendations for asphalt pavement in Section 8.1.

### 8.7 Soil Corrosivity

Corrosivity analyses were performed by Project X Corrosion Engineering to evaluate the corrosivity of the near-surface soil from Boring B-1 at a depth of 3.25 feet bgs and B-2 at a depth of 1 feet bgs, the results of which are presented in Appendix B.

The resistivity test results (3,350 ohm-cm and 12,730 ohm-cm) indicate the near-surface soil is "mildly corrosive to corrosive[6]" to buried metallic structures. The pH (6.3 and 6.8) indicate the soil is "mildly to moderately corrosive" to buried metal. The chloride ion concentration (42.8 mg/kg and 47.5 mg/kg) and sulfate ion concentration (34.1 mg/kg and 114.5 mg/kg) indicate the near-surface soil is "negligibly corrosive" to buried metallic structures and reinforcing steel in concrete structures below ground.

Despite the soil apparently having a relatively low corrosion potential, we believe it would be prudent to protect buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric-coated steel or iron to reduce the potential for corrosion. If it is necessary to have metal in contact with soil, a corrosion engineer should be consulted to provide recommendations for corrosion protection.

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6 Roberge, Pierre R. (2018). *Corrosion Basics, an Introduction, Third Edition*. NACE International, P. 189.

### 8.8 Seismic Design

For design in accordance with the 2019 California Building Code (CBC), we recommend Site Class D be used. The latitude and longitude of the site are 38.0682° and -122.8004°, respectively. Hence, in accordance with the 2019 CBC, we recommend the following:

- $S_S$ = 2.381g, $S_1$ = 0.997g

The 2019 CBC is based on the guidelines contained within ASCE 7-16 which stipulates that where $S_1$ is greater than 0.2 times gravity (g) for Site Class D, a ground motion hazard analysis is needed unless the seismic response coefficient ($C_s$) value will be calculated as outlined in Section 11.4.8, Exception 2. Assuming the $C_s$ value will be calculated as outlined in Section 11.4.8, Exception 2, we recommend the following seismic design parameters:

- $F_a$ = 1.0, $F_v$ = 1.7
- $S_{MS}$ = 2.381g, $S_{M1}$ = 1.695g
- $S_{DS}$ = 1.587g, $S_{D1}$ = 1.130g
- Seismic Design Category E (for Risk Categories I, II and III).

### 8.9 Construction Considerations

The near-surface soil at the site consists mainly of clayey and silty sand and sandy clay with varying amounts of gravel that can be excavated with conventional earth-moving equipment such as loaders and backhoes. Removal of existing foundations will require equipment capable of breaking up reinforced concrete, such as a hoe-ram. All disturbed soil resulting from demolition activities that will be below the building pad or footing subgrade should be overexcavated and recompacted in accordance with the recommendations in Section 8.1 under the observation of our field engineer.

Excavations that will be deeper than five feet or will extend below groundwater and will be entered by workers should be sloped or shored in accordance with CAL-OSHA standards (29 CFR Part 1926). The contractor should be responsible for the construction and safety of temporary slopes.

Groundwater may be encountered when excavating utility trenches. Dewatering should be the responsibility of the contractor. The dewatering system selected by the contractor should be capable of providing a dry subgrade to allow proper placement and compaction of fill.

## 9.0 ADDITIONAL GEOTECHNICAL SERVICES

Prior to construction, Rockridge Geotechnical should review the project plans and specifications to verify that they conform to the intent of our recommendations. During construction, our field engineer should provide on-site observation and testing during site preparation, placement and compaction of fill, and preparation of building foundations. These observations will allow us to compare actual with anticipated subsurface conditions and to verify that the contractor's work conforms to the geotechnical aspects of the plans and specifications.

## 10.0 LIMITATIONS

This geotechnical investigation has been conducted in accordance with the standard of care commonly used as state-of-practice in the profession. No other warranties are either expressed or implied. The recommendations made in this report are based on the assumption that the subsurface soil and groundwater conditions do not deviate appreciably from those disclosed in the exploratory borings. If any variations or undesirable conditions are encountered during construction, we should be notified so that additional recommendations can be made. The foundation recommendations presented in this report are developed exclusively for the proposed development described in this report and are not valid for other locations and construction in the project vicinity.

## REFERENCES

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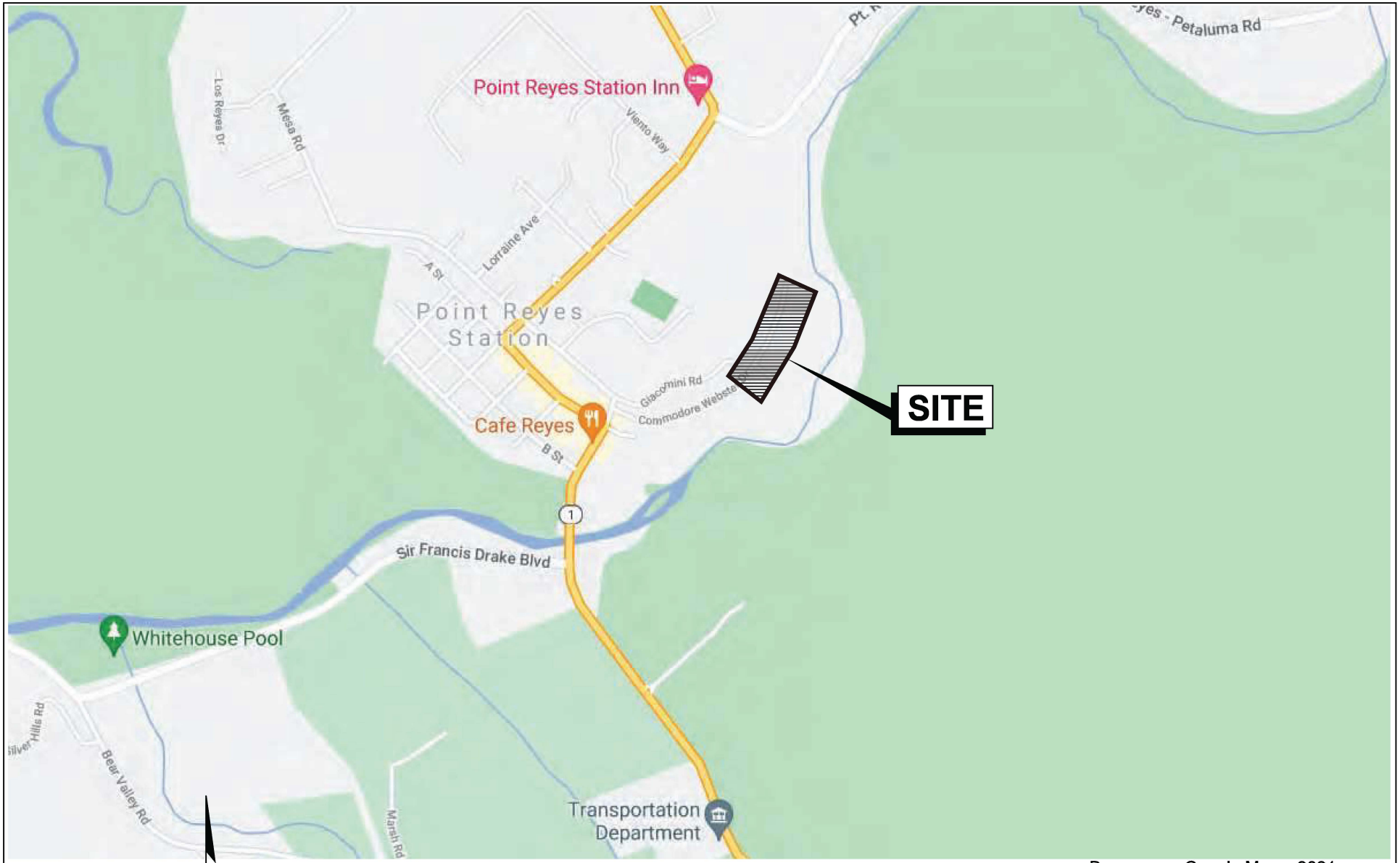
# FIGURES




Base map: Google Maps, 2021

0 1,000 2,000 Feet

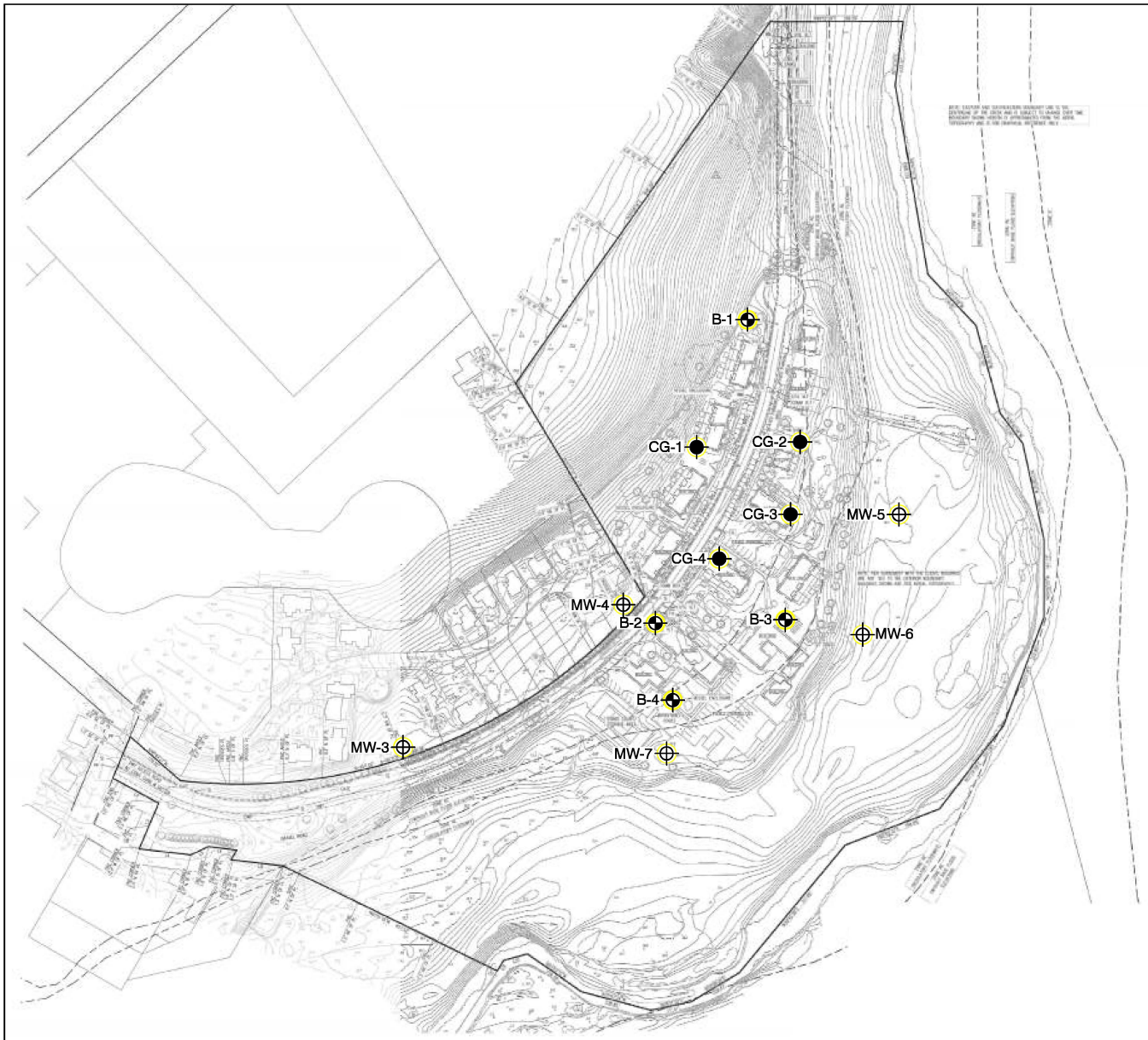
Approximate scale

**POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

ROCKRIDGE GEOTECHNICAL

## SITE LOCATION MAP

Date 06/30/22 | Project No. 21-2050 | Figure 1




**EXPLANATION**

B-1 — Approximate location of boring by Rockridge Geotechnical, Inc., July 6, 2021

CG-1 — Approximate location of boring by Questa Engineering, December 2020

MW-3 — Approximate location of monitoring wells by Questa Engineering, November 2000

N

0 200 Feet

Approximate scale

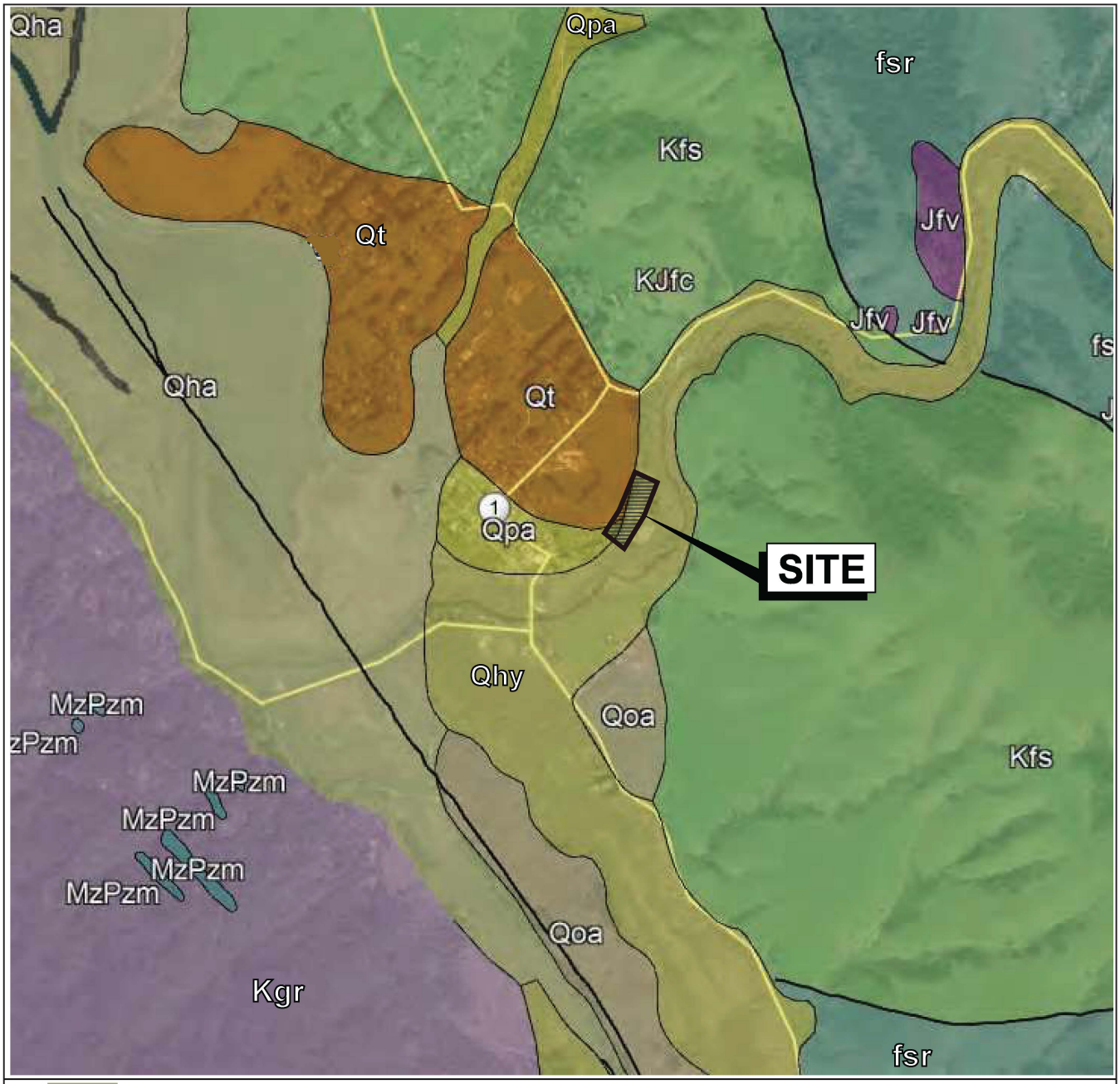
Reference: Base map from a drawing titled "A.L.T.A./ N.S.P.S. Land Title Survey, 100 Commodore Webster Drive", by cbg Surveyors, December 23, 2021.

**POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

**SITE PLAN**

| Date 07/13/22 | Project No. 21-2050 | Figure 2 |
|---|---|---|

ROCKRIDGE GEOTECHNICAL




| | |
|---|---|
| Qhy | Alluvium (late Holocene) |
| Qpa | Alluvium (Pleistocene) |
| Qha | Alluvium (Holocene) |
| Qt | Marine terrace deposits (Pleistocene) |
| Qoa | Alluvium (early (Pleistocene) |
| fsr | Franciscan Complex melange (Eocene, Paleocene, and (or) Late Cretaceous) |
| Kgr | Salinian complex plutonic (granite) rocks (Cretaceous) |
| Kfs | Franciscan Complex sedimentary rocks (Cretaceous) |
| KJfc | Franciscan Complex chert (Early Cretaceous and (or) Late Jurassic) |
| Jfv | Franciscan Complex volcanic rocks (Jurassic) |
| MzPzm | Salinian complex metamorphic rocks (Mesozoic and (or) Paleozoic) |

Base map: Google Earth with U.S. Geological Survey (USGS), Marin County, 2021

Geologic contact: dashed where approximate and dotted where concealed, queried where uncertain

N

0 2,000 4,000 Feet

Approximate scale

**POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

ROCKRIDGE GEOTECHNICAL

## REGIONAL GEOLOGIC MAP

Date 06/30/22 | Project No. 21-2050 | Figure 3




Base Map: U.S. Geological Survey (USGS), National Seismic Hazards Maps - Fault Sources, 2014.

**EXPLANATION**

- Strike slip
- Thrust (Reverse)
- Normal

N

0 10 20 Miles

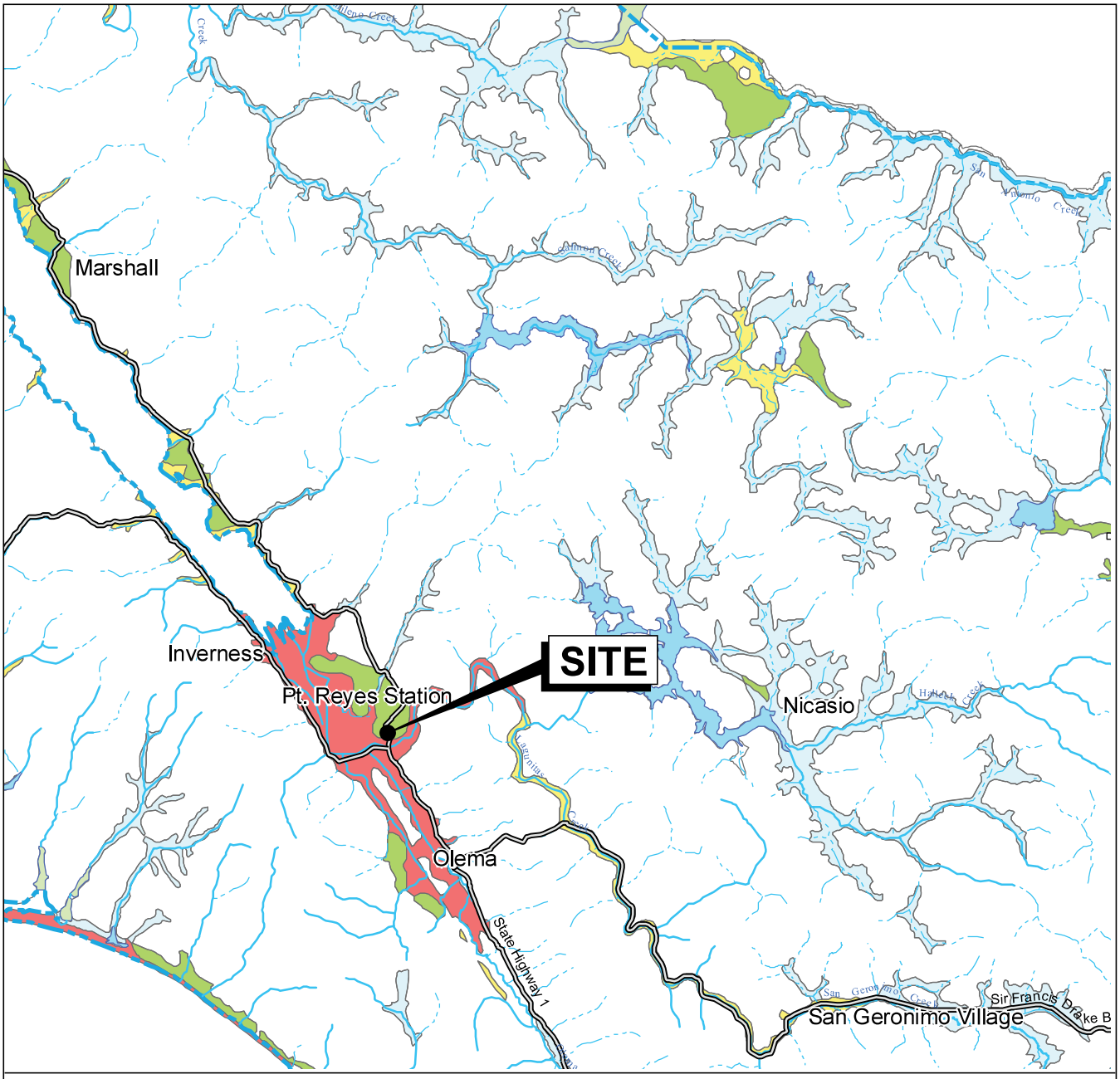
Approximate scale

**POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

**REGIONAL FAULT MAP**

ROCKRIDGE GEOTECHNICAL

| Date 06/30/22 | Project No. 21-2050 | Figure 4 |
|---|---|---|




## Legend

**Water Bodies**
- Lakes
- Lagoons

County Boundary
City Boundary
Highways and Major Roads

**Streams**
- Perennial
- Intermittent
- Ephemeral

**Level of Liquefaction Susceptibility***
- Very High
- High
- Moderate
- Low
- Very Low

Reference:
Liquefaction Susceptibility Hazards Map 2-11
San Francisco Bay Region, California:
A Digital Database, Open-File Report 00-44,
Online Version 1.0, U.S. Geological Survey, 2000.

N

0 2 4 Miles

Approximate scale

**POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

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# LIQUEFACTION SUSCEPTIBILITY MAP

Date 06/30/22 | Project No. 21-2050 | Figure 5

ROCKRIDGE GEOTECHNICAL

# APPENDIX A

## Logs of Test Borings

PROJECT: **POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

# Log of Boring B-1



Boring location: See Site Plan, Figure 2
Date started: 07/06/2021 Date finished: 07/06/2021
Drilling method: 4-inch-diameter solid stem auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Rope & cathead safety hammer
Sampler: Modified California (MC), Standard Penetration Test (SPT)

Logged by: A. Limpert
Drilled by: Benevent Building
Rig: Portable Hydraulic Rig

| DEPTH (feet) | Sampler Type | Sample | Blows/ 6" | SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | SANDY CLAY (CL)<br>yellow grades to brown with yellow-brown mottling, very stiff, moist, fine sand | FILL | | | | | | |
| 2 | MC | | 14<br>15<br>24 | 27 | CL | SANDY CLAY (CL)<br>yellow-brown to red-yellow with gray veins, hard, moist<br>Soil Corrosivity Test; see Appendix B | TERRACE DEPOSITS | | | | | | |
| 3 | | | | | | | | | | | | | |
| 4 | MC | | 17<br>27<br>40 | 47 | | | | | | | | | |
| 5 | | | | | | trace gravel | | | | | | | |
| 6 | SPT | | 10<br>13<br>20 | 40 | | | | | | | | | |
| 7 | | | | | SC | CLAYEY SAND with GRAVEL (SC)<br>red-yellow with yellow-brown and light brown, medium dense to dense, moist, fine angular gravel | | | | | | | |
| 8 | SPT | | 16<br>14<br>11 | 30 | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| 10 | | | | | | CLAYEY SAND (SC)<br>brown, medium dense, moist, fine to coarse sand | OLD ALLUVIUM | | | | | | |
| 11 | SPT | | 12<br>8<br>9 | 20 | | Particle Size Distribution; see Appendix B | | | | | 36 | 20.4 | |
| 12 | | | | | SC | ▽ (07/06/2021; 9:10 AM) | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | SPT | | 11<br>15<br>15 | 36 | SP | SAND (SP)<br>brown, dense, wet | | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | SPT | | 10<br>14<br>14 | 34 | | decreasing coarse sand | | | | | | | |
| 19 | | | | | | SANDY CLAY (CL)<br>blue to gray with black, hard, wet, fine sand | RESIDUAL SOIL | | | | | | |
| 20 | | | | | CL | | | | | | | | |
| 21 | SPT | | 13<br>14<br>17 | 37 | | melange, serpentinite and sheared | | | | | | | |
| 22 | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 12 feet during drilling.

[1] MC and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2050
Figure: A-1

PROJECT: **POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

# Log of Boring B-2



Boring location: See Site Plan, Figure 2
Date started: 07/06/2021 Date finished: 07/06/2021
Drilling method: 4-inch-diameter solid stem auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Rope & cathead safety hammer
Sampler: Modified California (MC), Standard Penetration Test (SPT)

Logged by: A. Limpert
Drilled by: Benevent Building
Rig: Portable Hydraulic Rig

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | SANDY CLAY (CL)<br>dark brown with trace red veins, very stiff, moist, trace fine gravel, rootlets | FILL | | | | | | |
| 2 | MC | | 10<br>12<br>14 | 18 | CL | Soil Corrosivity Test; see Appendix B | | | | | | | |
| 3 | | | | | | brown, hard, increasing gravel content | | | | | | | |
| 4 | MC | | 18<br>24<br>28 | 36 | | LL = 25, PI = 9; see Appendix B | | | | | | 11.8 | 118 |
| 5 | | | | | | | | | | | | | |
| 6 | MC | | 16<br>26<br>34 | 42 | | brown grades to dark brown mottled with brown, increasing sand content | | | | | | | |
| 7 | | | | | SC | CLAYEY SAND with GRAVEL (SC)<br>brown with black gravel pieces, dense, moist, medium sand, fine subrounded gravel | TERRACE DEPOSITS | | | | | | |
| 8 | | | | | | | | | | | | | |
| 9 | | | | | | CLAYEY SAND with GRAVEL (SC)<br>brown with black gravel pieces, dense, moist to wet, medium sand, fine subrounded gravel | OLD ALLUVIUM (?) | | | | | | |
| 10 | | | | | | | | | | | | | |
| 11 | SPT | | 21<br>19<br>11 | 36 | | ▽ (07/06/2021; 12:55 PM) | | | | | | | |
| 12 | | | | | SC | | | | | | | | |
| 13 | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | |
| 16 | | | | | | SANDY CLAY (CL)<br>gray, very stiff, wet, trace sand and gravel | RESIDUAL SOIL | | | | | | |
| 17 | | | | | | | | | | | | | |
| 18 | | | | | | melange, sheared sandstone, shale, and serpentinite | | | | | | | |
| 19 | | | | | CL | | | | | | | | |
| 20 | | | 8 | | | | | | | | | | |
| 21 | SPT | | 10<br>13 | 28 | | | | | | | | | |
| 22 | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 11 feet during drilling.

[1] MC and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2050
Figure: A-2

PROJECT: **POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

# Log of Boring B-3



Boring location: See Site Plan, Figure 2
Date started: 07/06/2021 Date finished: 07/06/2021
Drilling method: 4-inch-diameter solid stem auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Rope & cathead safety hammer
Sampler: Modified California (MC), Standard Penetration Test (SPT)

Logged by: A. Limpert
Drilled by: Benevent Building
Rig: Portable Hydraulic Rig

| DEPTH (feet) | Sampler Type | Sample | Blows/ 6" | SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | | Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | LABORATORY TEST DATA | | | | | |
| 1 | MC | | 26 | 25 | CL-ML | SILTY CLAY with GRAVEL (CL-ML)<br>brown to yellow-brown with light brown, very stiff, moist, medium sand, fine to medium subrounded subangular gravel<br>LL = 24, PI = 4; see Appendix B | FILL | | | | | 7.6 | 113 |
| 2 | | | 19 | | | | | | | | | | |
| 3 | | | 16 | | | | | | | | | | |
| 4 | MC | | 13 | 18 | SC | CLAYEY SAND with GRAVEL (SC)<br>brown with yellow-brown, medium dense, moist, fine to medium sand, fine to medium subrounded to subangular gravel | | | | | | | |
| 5 | | | 11 | | | | | | | | | | |
| 6 | MC | | 14 | 27 | | SANDSTONE<br>yellow-brown with black grades to olive with gray and brown, low hardness, friable to weak, moderately weathered | | | | | | | |
| 7 | | | 14 | | | | | | | | | | |
| 8 | | | 21 | | | | | | | | | | |
| 9 | | | 17 | | | | | | | | | | |
| 10 | SPT | | 19 | 60 | | GREENSTONE<br>olive with brown and gray, low hardness, weak, deeply to moderately weathered | FRANCISCAN MELANGE | | | | | | |
| 11 | | | 18 | | | | | | | | | | |
| 12 | | | 32 | | | | | | | | | | |
| 13 | | | | | | SHALE/SERPENTINITE<br>olive-gray, sheared, low hardness, weak, completely weathered, prune pits present | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | | | 4 | | | | | | | | | | |
| 16 | SPT | | 6 | 18 | | | | | | | | | |
| 17 | | | 9 | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | | | 5 | | | | | | | | | | |
| 21 | SPT | | 9 | 20 | | | | | | | | | |
| 22 | | | 8 | | | | | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] MC and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2050
Figure: A-3

PROJECT: **POINT REYES COAST GUARD HOUSING**
**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

# Log of Boring B-4



Boring location: See Site Plan, Figure 2
Date started: 07/06/2021 Date finished: 07/06/2021
Drilling method: 4-inch-diameter solid stem auger
Hammer weight/drop: 140 lbs./30 inches Hammer type: Rope & cathead safety hammer
Sampler: Modified California (MC), Standard Penetration Test (SPT)

Logged by: A. Limpert
Drilled by: Benevent Building
Rig: Portable Hydraulic Rig

| DEPTH (feet) | SAMPLES: Sampler Type | SAMPLES: Sample | SAMPLES: Blows/ 6" | SAMPLES: SPT N-Value[1] | LITHOLOGY | MATERIAL DESCRIPTION | | LABORATORY TEST DATA: Type of Strength Test | Confining Pressure Lbs/Sq Ft | Shear Strength Lbs/Sq Ft | Fines % | Natural Moisture Content, % | Dry Density Lbs/Cu Ft |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | MC | | 28 | | SC | CLAYEY SAND with GRAVEL (SC)<br>brown grades to dark brown, dense, dry to moist,<br>broken 2-inch-diameter gravel in shoe | FILL | | | | | | |
| 2 | | | 40 | 46 | | | | | | | | | |
| 3 | | | 25 | | | | | | | | | | |
| 4 | MC | | 13 | | CL | SANDY CLAY with GRAVEL (CL)<br>brown to yellow-brown, hard, moist, fine gravel,<br>rootlets | TERRACE DEPOSITS | | | | | | |
| 5 | | | 23 | 43 | | | | | | | | | |
| 6 | | | 39 | | | | | | | | | | |
| 7 | SPT | | 16 | | GC | CLAYEY GRAVEL with SAND (GC)<br>brown with gray gravel, dense, dry to moist,<br>resistan sandstone gravel | | | | | | | |
| 8 | | | 15 | 35 | | | | | | | | | |
| 9 | | | 14 | | | | | | | | | | |
| 10 | | | | | | SHALE/SERPENTINITE<br>olive with brown, black, and light gray, sheared,<br>low hardness, friable to weak, deeply to completely<br>weathered to clay locally | FRANCISCAN MELANGE | | | | | | |
| 11 | SPT | | 13 | | | | | | | | | | |
| 12 | | | 14 | 34 | | | | | | | | | |
| 13 | | | 14 | | | | | | | | | | |
| 14 | | | | | | | | | | | | | |
| 15 | SPT | | 33 | | | 1-inch-diameter gravel stuck in shoe | | | | | | | |
| 16 | | | 20 | 38 | | | | | | | | | |
| 17 | | | 12 | | | | | | | | | | |
| 18 | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | |
| 20 | SPT | | 15 | | | dark gray | | | | | | | |
| 21 | | | 21 | 43 | | | | | | | | | |
| 22 | | | 15 | | | | | | | | | | |
| 23 | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |

Boring terminated at a depth of 21.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

[1] MC and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively, to account for sampler type and hammer energy.

ROCKRIDGE GEOTECHNICAL

Project No.: 21-2050
Figure: A-4

## UNIFIED SOIL CLASSIFICATION SYSTEM

| Major Divisions | | Symbols | Typical Names |
|---|---|---|---|
| Coarse-Grained Soils (more than half of soil > no. 200 sieve size) | Gravels (More than half of coarse fraction > no. 4 sieve size) | GW | Well-graded gravels or gravel-sand mixtures, little or no fines |
| | | GP | Poorly-graded gravels or gravel-sand mixtures, little or no fines |
| | | GM | Silty gravels, gravel-sand-silt mixtures |
| | | GC | Clayey gravels, gravel-sand-clay mixtures |
| | Sands (More than half of coarse fraction < no. 4 sieve size) | SW | Well-graded sands or gravelly sands, little or no fines |
| | | SP | Poorly-graded sands or gravelly sands, little or no fines |
| | | SM | Silty sands, sand-silt mixtures |
| | | SC | Clayey sands, sand-clay mixtures |
| Fine -Grained Soils (more than half of soil < no. 200 sieve size) | Silts and Clays LL = < 50 | ML | Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts |
| | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays |
| | | OL | Organic silts and organic silt-clays of low plasticity |
| | Silts and Clays LL = > 50 | MH | Inorganic silts of high plasticity |
| | | CH | Inorganic clays of high plasticity, fat clays |
| | | OH | Organic silts and clays of high plasticity |
| Highly Organic Soils | | PT | Peat and other highly organic soils |

## GRAIN SIZE CHART

| Classification | Range of Grain Sizes | |
|---|---|---|
| | U.S. Standard Sieve Size | Grain Size in Millimeters |
| Boulders | Above 12" | Above 305 |
| Cobbles | 12" to 3" | 305 to 76.2 |
| Gravel<br>coarse<br>fine | 3" to No. 4<br>3" to 3/4"<br>3/4" to No. 4 | 76.2 to 4.76<br>76.2 to 19.1<br>19.1 to 4.76 |
| Sand<br>coarse<br>medium<br>fine | No. 4 to No. 200<br>No. 4 to No. 10<br>No. 10 to No. 40<br>No. 40 to No. 200 | 4.76 to 0.075<br>4.76 to 2.00<br>2.00 to 0.420<br>0.420 to 0.075 |
| Silt and Clay | Below No. 200 | Below 0.075 |

Unstabilized groundwater level

Stabilized groundwater level

## SAMPLE DESIGNATIONS/SYMBOLS

Sample taken with California or Modified California split-barrel sampler. Darkened area indicates soil recovered

Classification sample taken with Standard Penetration Test sampler

Undisturbed sample taken with thin-walled tube

Disturbed sample

Sampling attempted with no recovery

Core sample

Analytical laboratory sample

Sample taken with Direct Push sampler

Sonic

## SAMPLER TYPE

C Core barrel

CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter

D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube

O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube

MC Modified California sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter

SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter

ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

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**100 COMMODORE WEBSTER DRIVE**
Point Reyes Station, California

ROCKRIDGE GEOTECHNICAL

# CLASSIFICATION CHART

Date 06/30/22 | Project No. 21-2050 | Figure A-5

## I FRACTURING

| Intensity | Size of Pieces in Feet |
|---|---|
| Very little fractured | Greater than 4.0 |
| Occasionally fractured | 1.0 to 4.0 |
| Moderately fractured | 0.5 to 1.0 |
| Closely fractured | 0.1 to 0.5 |
| Intensely fractured | 0.05 to 0.1 |
| Crushed | Less than 0.05 |

## II HARDNESS

1. **Soft -** reserved for plastic material alone.
2. **Low hardness -** can be gouged deeply or carved easily with a knife blade.
3. **Moderately hard -** can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away.
4. **Hard -** can be scratched with difficulty; scratch produced a little powder and is often faintly visible.
5. **Very hard -** cannot be scratched with knife blade; leaves a metallic streak.

## III STRENGTH

1. **Plastic** or very low strength.
2. **Friable -** crumbles easily by rubbing with fingers.
3. **Weak -** an unfractured specimen of such material will crumble under light hammer blows.
4. **Moderately strong -** specimen will withstand a few heavy hammer blows before breaking.
5. **Strong -** specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.
6. **Very strong -** specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.

## IV WEATHERING - The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation, and freezing and thawing.

**D. Deep -** moderate to complete mineral decomposition; extensive disintegration; deep and thorough discoloration; many fractures, all extensively coated or filled with oxides, carbonates and/or clay or silt.

**M. Moderate -** slight change or partial decomposition of minerals; little disintegration; cementation little to unaffected. Moderate to occasionally intense discoloration. Moderately coated fractures.

**L. Little -** no megascopic decomposition of minerals; little of no effect on normal cementation. Slight and intermittent, or localized discoloration. Few stains on fracture surfaces.

**F. Fresh -** unaffected by weathering agents. No disintegration of discoloration. Fractures usually less numerous than joints.

**ADDITIONAL COMMENTS:**

## V CONSOLIDATION OF SEDIMENTARY ROCKS: usually determined from unweathered samples. Largely dependent on cementation.

U = unconsolidated
P = poorly consolidated
M = moderately consolidated
W = well consolidated

## VI BEDDING OF SEDIMENTARY ROCKS

| Splitting Property | Thickness | Stratification |
|---|---|---|
| Massive | Greater than 4.0 ft. | very thick-bedded |
| Blocky | 2.0 to 4.0 ft. | thick bedded |
| Slabby | 0.2 to 2.0 ft. | thin bedded |
| Flaggy | 0.05 to 0.2 ft. | very thin-bedded |
| Shaly or platy | 0.01 to 0.05 ft. | laminated |
| Papery | less than 0.01 | thinly laminated |

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ROCKRIDGE GEOTECHNICAL

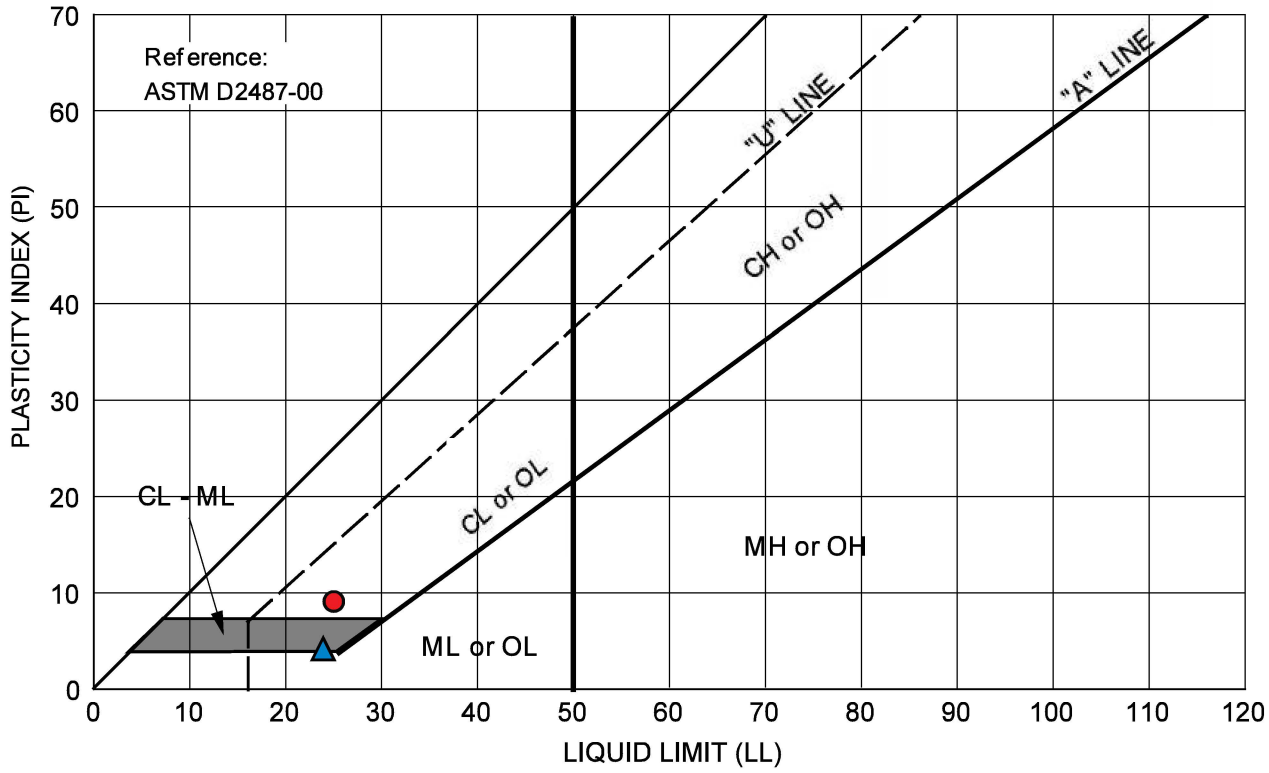
**PHYSICAL PROPERTIES CRITERIA FOR ROCK DESCRIPTIONS**

Date 06/30/22 | Project No. 21-2050 | Figure A-6

ROCKRIDGE GEOTECHNICAL

# APPENDIX B

## Laboratory Test Results




| Symbol | Source | Description and Classification | Natural M.C. (%) | Liquid Limit (%) | Plasticity Index (%) | % Passing #200 Sieve |
|---|---|---|---|---|---|---|
| ● | B-2 at 4.0 feet | SANDY CLAY (CL), dark brown with trace red veins | 11.8 | 25 | 9 | -- |
| ▲ | B-3 at 2.0 feet | SILTY CLAY with GRAVEL (CL-ML), brown to yellow-brown with light brown | 7.6 | 24 | 4 | -- |

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ROCKRIDGE GEOTECHNICAL

**PLASTICITY CHART**

Date 06/30/22 | Project No. 21-2050 | Figure B-1

| Sample No. | Description | Elev. | Dry Weight [g] | Wt. Retained on #200 [g] | % Retained on #200 | % Passing #200 |
|---|---|---|---|---|---|---|
| B-1-5 | CLAYEY SAND (SC), brown | 10.0' | 601 | 387 | 64.4 | 35.6 |
| | | | | | | |
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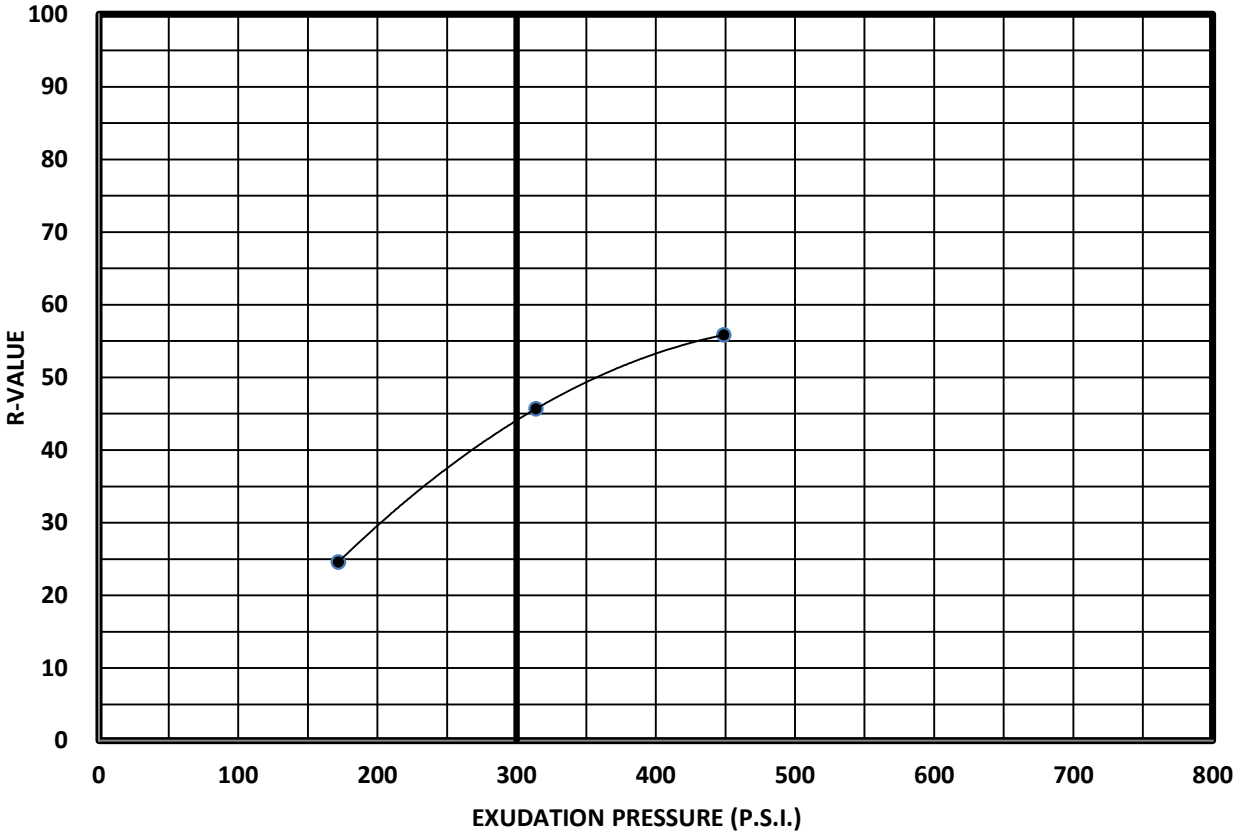
Point Reyes Station, California

ROCKRIDGE GEOTECHNICAL

**MATERIAL FINER THAN -200 SIEVE**

Date 06/30/22 | Project No. 21-2050 | Figure B-2

# R-VALUE CAL-TEST 301




| Exudation (psi) | Compaction (psi) | Expansion (0.0001") | Expansion (psf) | Moisture % | Dry Density | Resistance Value |
|---|---|---|---|---|---|---|
| 449 | 295 | 65 | 281 | 16.4 | 110.5 | 56 |
| 314 | 218 | 60 | 260 | 17.8 | 110.1 | 46 |
| 172 | 155 | 30 | 130 | 19.5 | 104.8 | 25 |

| Test Results | Material Description |
|---|---|
| R-Value at 300 psi exudation pressure = 44 | SANDY CLAY (CL), dark brown with trace red veins |
| | Sample Source: B-2 at 0.5-5 feet |

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Point Reyes Station, California

ROCKRIDGE GEOTECHNICAL

**RESISTANCE VALUE TEST REPORT**

| Date 06/30/22 | Project No. 21-2050 | Figure B-3 |
|---|---|---|

**Project X**
**Corrosion Engineering**
Corrosion Control – Soil, Water, Metallurgy Testing Lab

REPORT S210708C

| | Method | ASTM D4327 | | ASTM D4327 | | ASTM G187 | | ASTM D4972 | ASTM G200 | ASTM D4658 | ASTM D4327 | ASTM D6919 | ASTM D6919 | ASTM D6919 | ASTM D6919 | ASTM D6919 | ASTM D4327 | ASTM D4327 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Bore# / Description** | **Depth** | **Sulfates** $SO_4^{2-}$ | | **Chlorides** $Cl^-$ | | **Resistivity** As Rec'd \| Minimum | | **pH** | **Redox** | **Sulfide** $S^{2-}$ | **Nitrate** $NO_3^-$ | **Ammonium** $NH_4^+$ | **Lithium** $Li^+$ | **Sodium** $Na^+$ | **Potassium** $K^-$ | **Magnesium** $Mg^{2+}$ | **Calcium** $Ca^{2+}$ | **Fluoride** $F_2^-$ | **Phosphate** $PO_4^{3-}$ |
| | (ft) | (mg/kg) | (wt%) | (mg/kg) | (wt%) | (Ohm-cm) | (Ohm-cm) | | (mV) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) | (mg/kg) |
| B-1: SANDY CLAY (CL) yellow-brown to red-yellow with gray veins | 3.25 | 34.1 | 0.0034 | 42.8 | 0.0043 | 6,700 | 3,350 | 6.3 | 86 | <0.01 | 0.4 | 5.4 | 0.02 | 69.5 | 1.9 | 90.5 | 189.0 | 1.9 | 0.5 |
| B-2: SANDY CLAY (CL) dark brown with trace red veins | 1 | 114.5 | 0.0114 | 47.5 | 0.0048 | 107,200 | 12,730 | 6.8 | 92 | <0.01 | 0.3 | 7.5 | 0.02 | 104.0 | 3.0 | 64.6 | 228.0 | 2.6 | 0.3 |

Cations and Anions, except Sulfide and Bicarbonate, tested with Ion Chromatography
mg/kg = milligrams per kilogram (parts per million) of dry soil weight
ND = 0 = Not Detected | NT = Not Tested | Unk = Unknown
Chemical Analysis performed on 1:3 Soil-To-Water extract
PPM = mg/kg (soil) = mg/L (Liquid)

29990 Technology Dr., Suite 13, Murrieta, CA 92563 Tel: 213-928-7213 Fax: 951-226-1720
www.projectxcorrosion.com

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Point Reyes Station, California

ROCKRIDGE GEOTECHNICAL

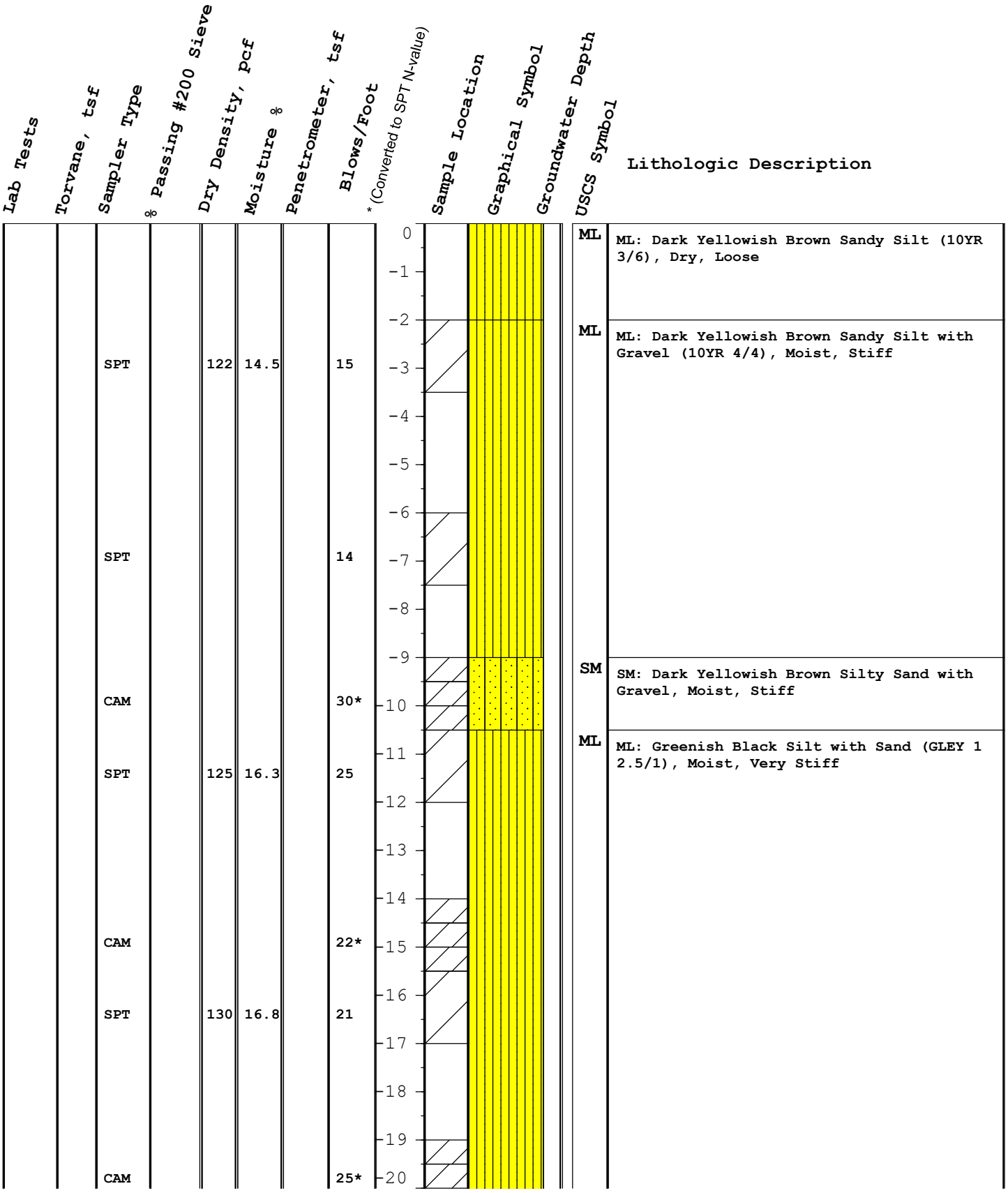
**SOIL CORROSIVITY TEST RESULTS**

Date | Project No. 21-2050 | Figure B-4

ROCKRIDGE GEOTECHNICAL

# APPENDIX C

## Logs of Previous Borings and Monitoring Wells by Questa




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

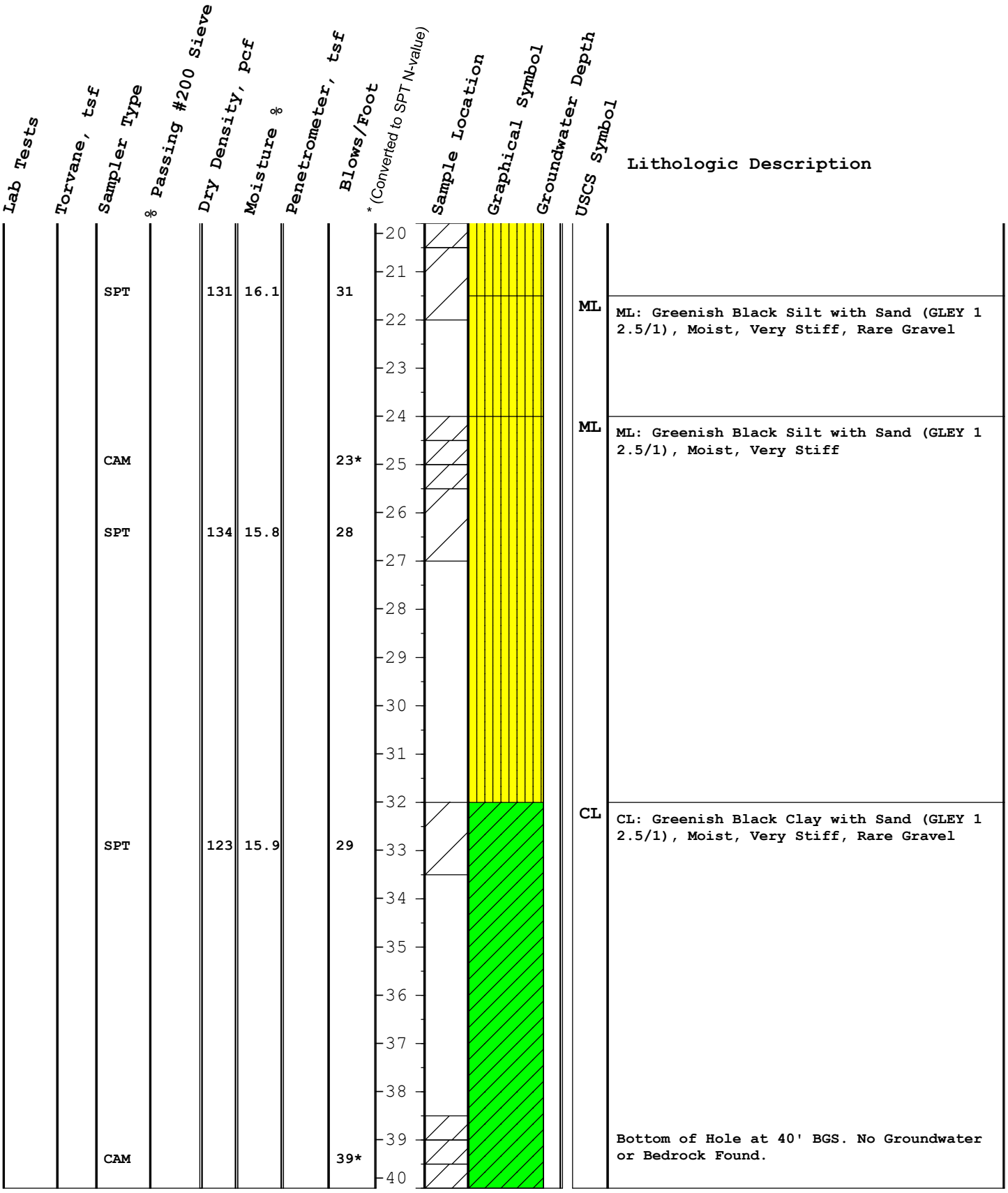
QUESTA ENGINEERING CORP.
Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-1

**Coast Guard 2020**

**Point Reyes Station**

**Figure A-1**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

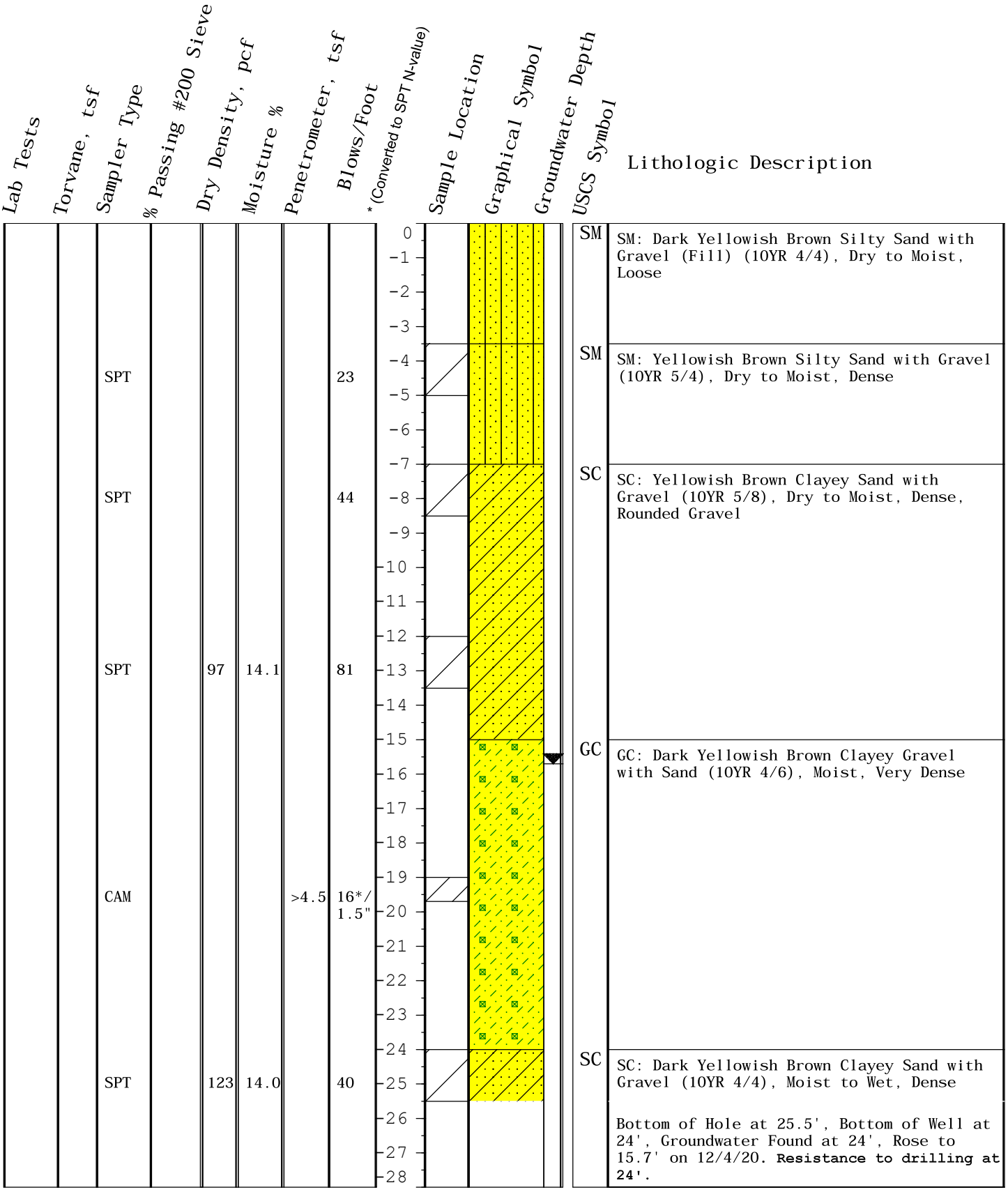
QUESTA ENGINEERING CORP.
Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-1

**Coast Guard 2020**

**Point Reyes Station**

**Figure A-1**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

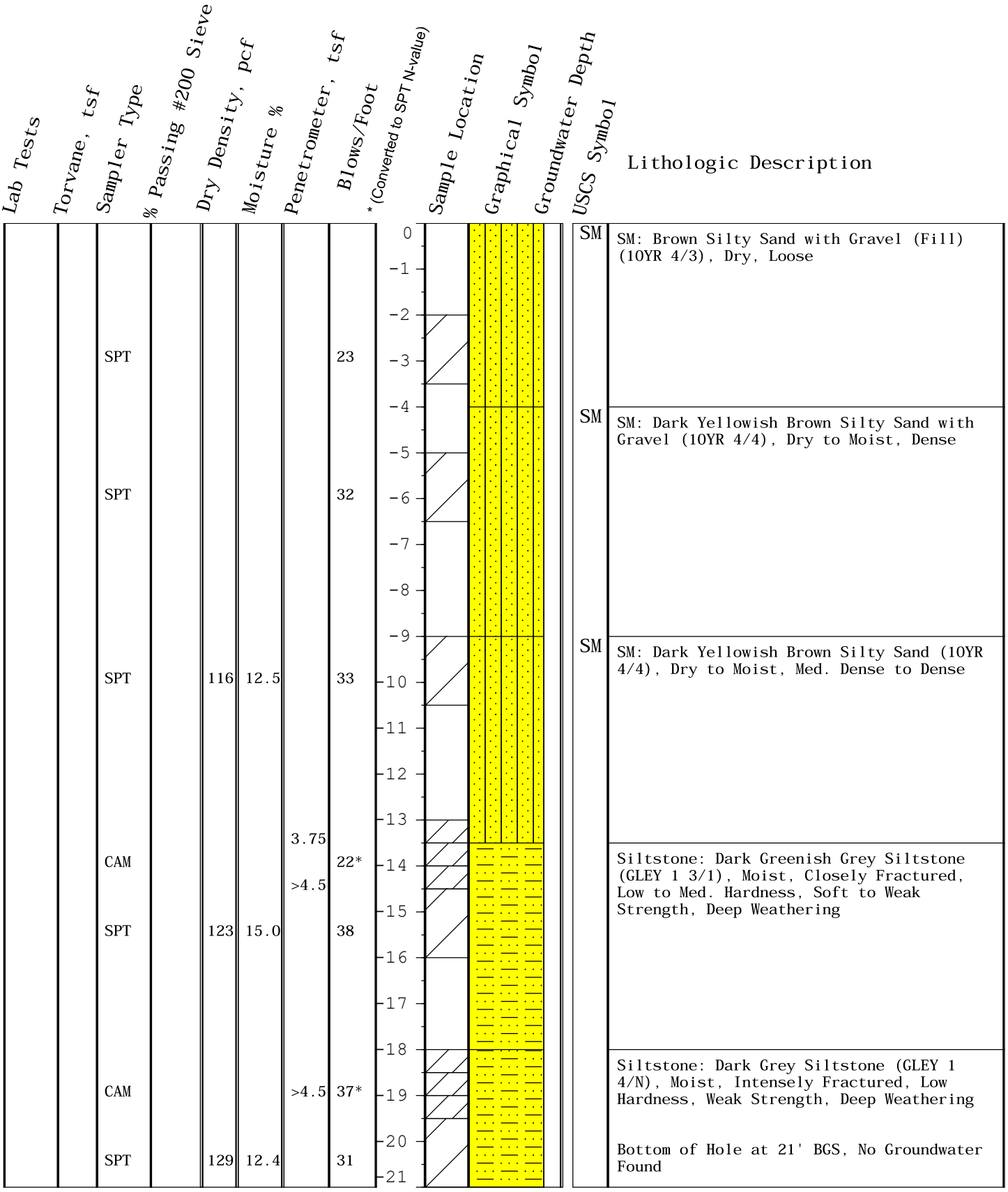
QUESTA ENGINEERING CORP. Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-2

**Coast Guard 2020**

**Point Reyes Station**

**Figure A-2**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

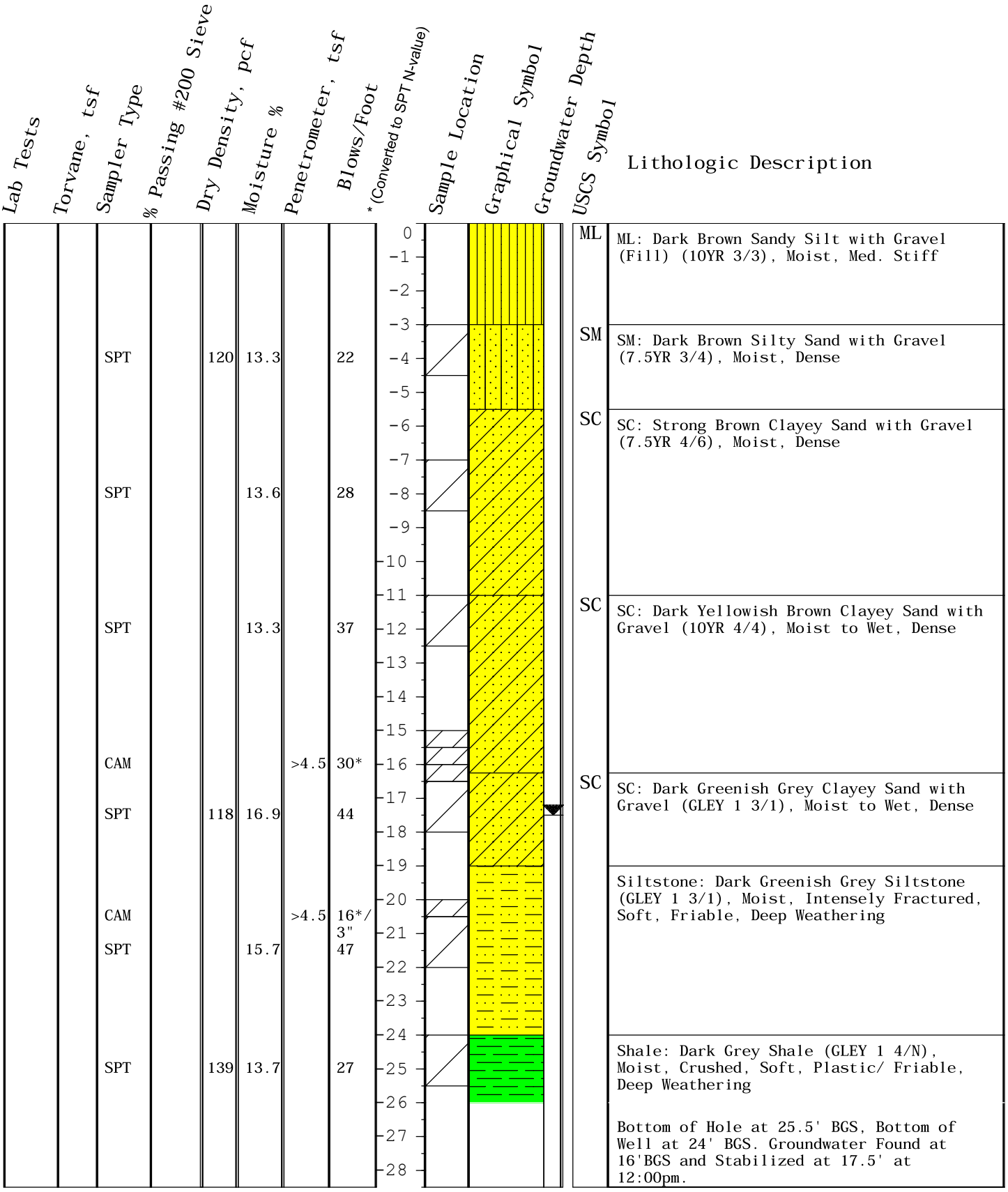
QUESTA ENGINEERING CORP. Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-3

**Coast Guard 2020**

**Point Reyes Station**

**Figure A-3**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

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# LOG OF BOREHOLE CG-4

**Coast Guard 2020**

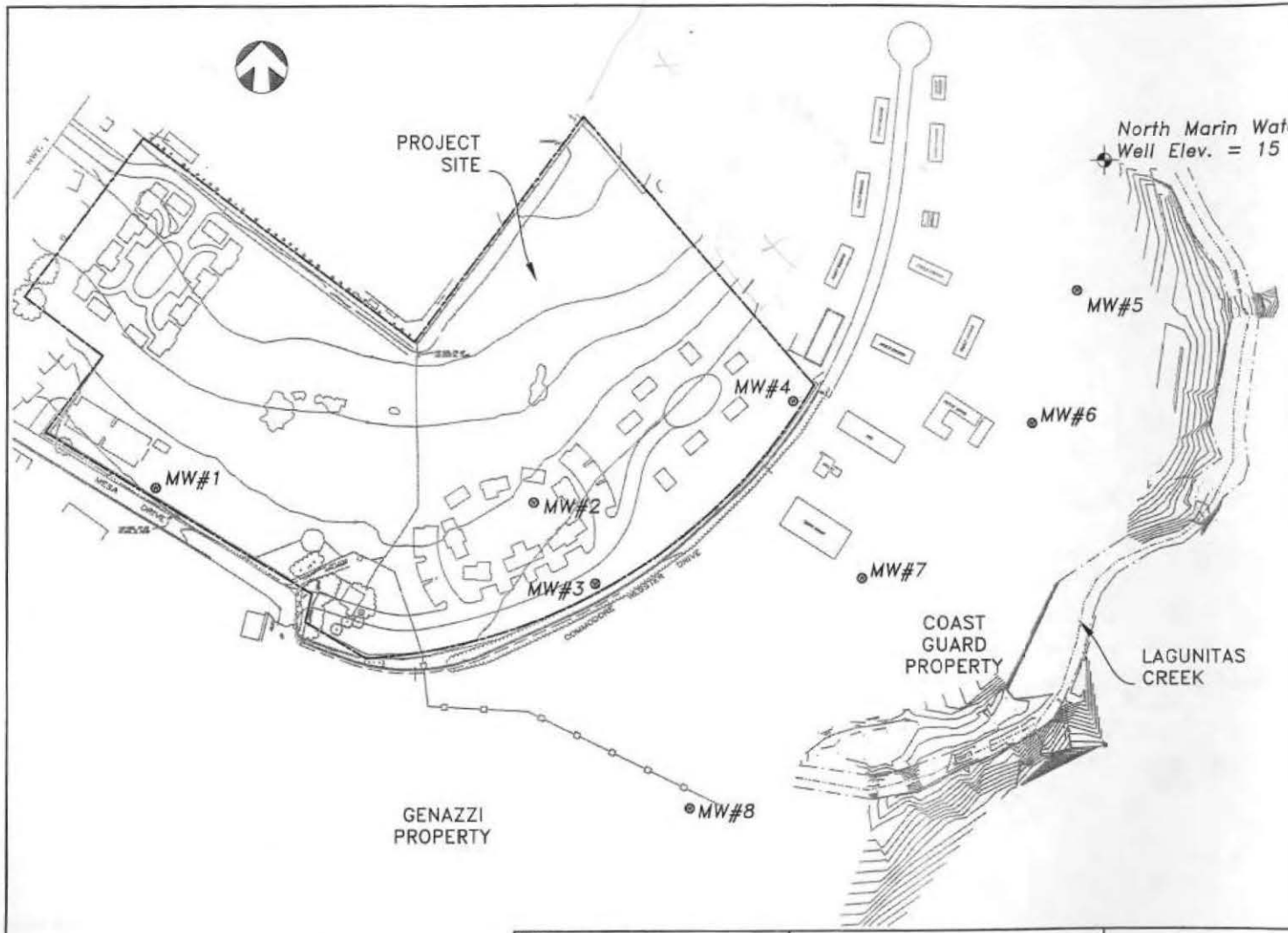
**Point Reyes Station**

**Figure A-4**

# From 2001 Hydrogeologic Investigation by Questa Engineering

## APPENDIX A

## Monitoring Well Completion Logs




| WELL NO. | LOCATION | WELL HEAD ELEVATION (ft, msl) | GROUND SURFACE ELEVATION (ft, msl) | TOTAL DEPTH (ft) | SCREENED INTERVAL | DEPTH TO BEDROCK* (ft) |
|---|---|---|---|---|---|---|
| MW-1 | Project Site (West) | 41.79 | 42.0 | 33 | 13–33 | 28 |
| MW-2 | Project Site (Center) | 47.11 | 47.6 | 35 | 20–35 | 32 |
| MW-3 | Project Site (Center) | 32.27 | 32.6 | 34 | 14–34 | 16 |
| MW-4 | Project Site (East) | 30.07 | 30.2 | 26.5 | 13–26.5 | 22 |
| MW-5 | CG (East) | 12.39 | 12.5 | 40 | 20–40 | >40 |
| MW-6 | CG (Center) | 14.18 | 14.4 | 34 | 14–34 | 25 |
| MW-7 | CG (West) | 21.16 | 21.4 | 34 | 14–34 | 29 |
| MW-8 | Genazzi (West) | 12.94 | 13.2 | 13 (Caving) | 3–10 | >38 |

* Shale – Siltstone

200′ 0′ 200′ 400′

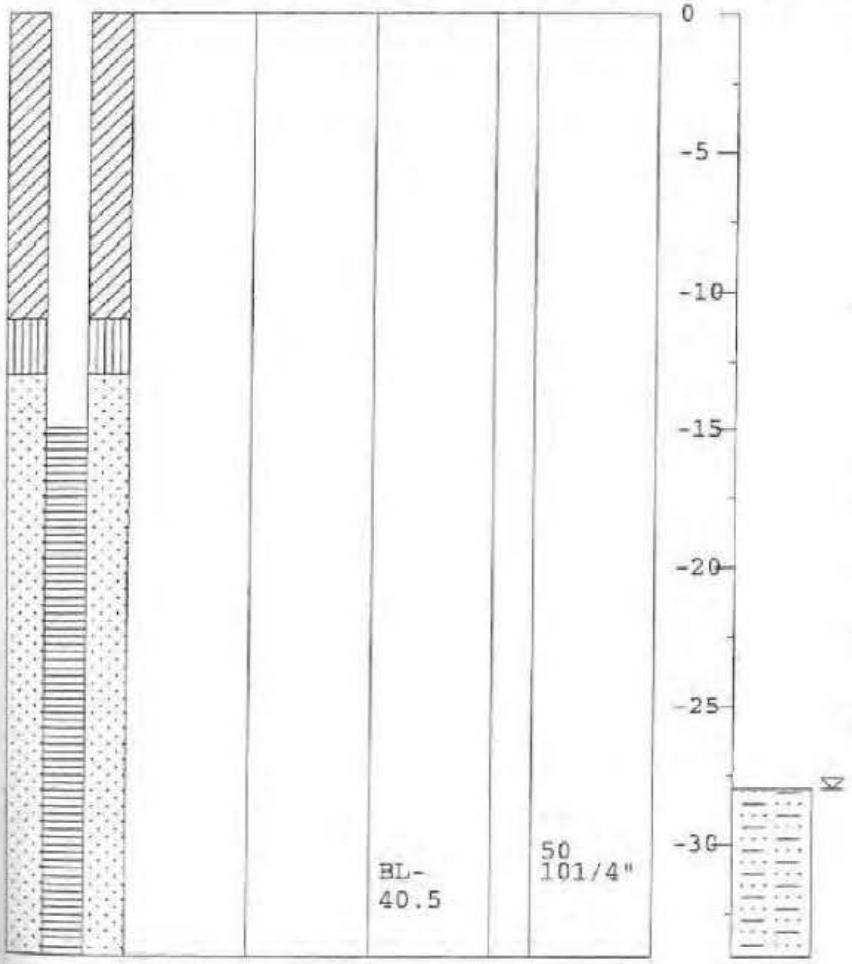
GRAPHIC SCALE

| | |
|---|---|
| Date: | 11/22 / 00 |
| Drawn: | M.M.M. |
| Appr'd: | N.H. |
| Dwg. No: | 99190_11x17.DWG |

QUESTA ENGINEERING CORP.
Civil Environmental & Water Resources
(510) 236-6114
FAX (510) 236-2435
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

**MONITORING WELL LOCATIONS**
POINT REYES AFFORDABLE HOUSING PROJECT
POINT REYES STATION, CALIFORNIA

FIGURE
2




| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | GRAVELLY LOAM: brown, loose, damp; change in color to reddish-brown and increase in sand with depth |
| CL | SANDY CLAY: reddish-brown, medium stiff, damp; change in color to yellow-brown and increase in gravel with depth |
| SP | LOAMY GRAVEL: grey-brown, medium dense, moist |
| CL | GRAVELLY SANDY CLAY: grey-brown, stiff, increase in sand to 25 feet |
| GC | CLAYEY GRAVEL: grey, moist, dense, |
| | SILTSTONE: grey, very hard. Groundwater @ 28 feet |

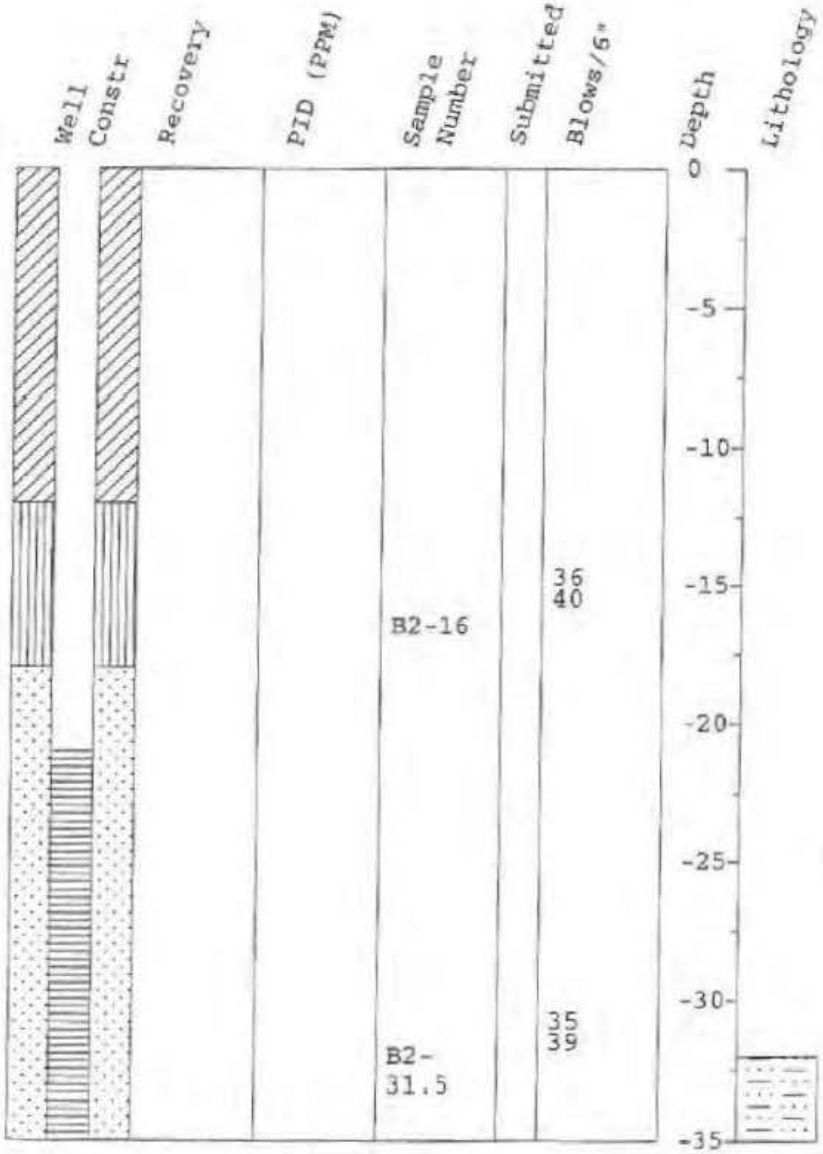
| | |
|---|---|
| Date: | 11-15-2000 |
| Job Name: | EAH- Pt. Reyes |
| Job No: | 99190 |

QUESTA Civil Environmental & Water Resources

P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

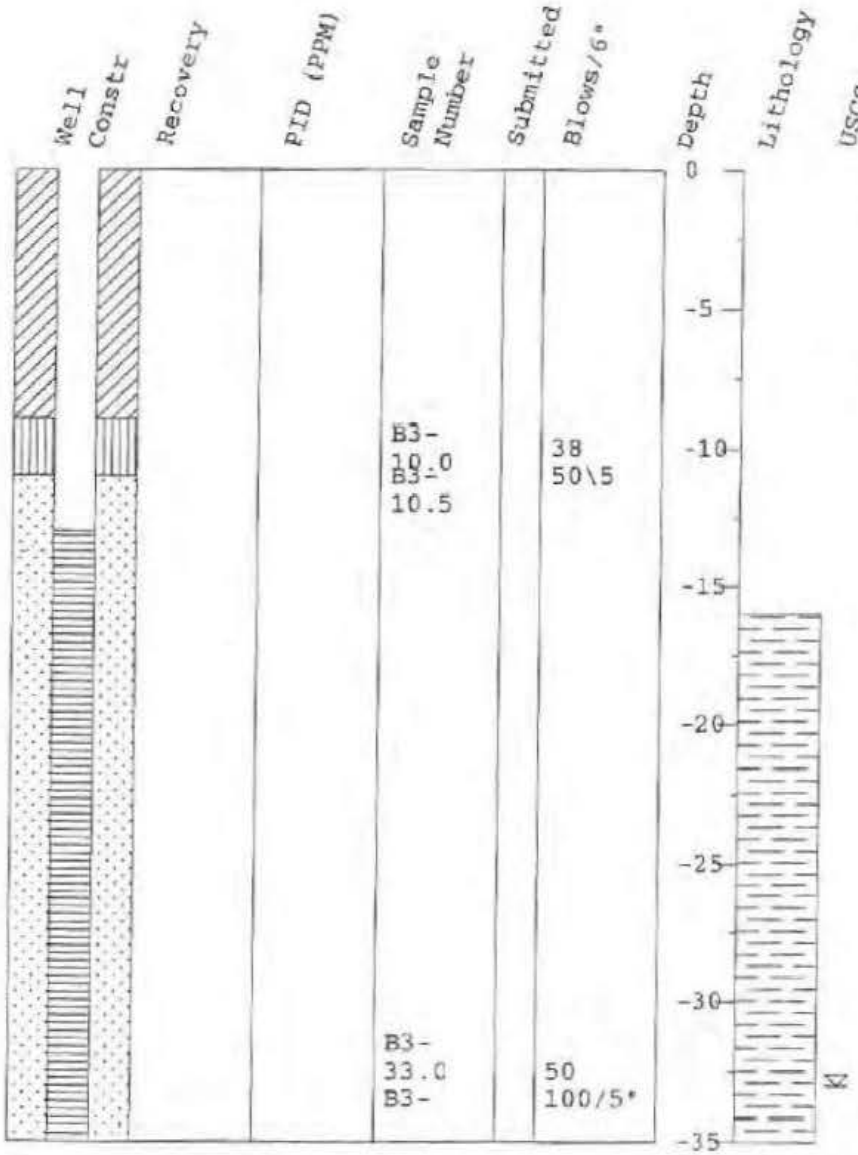
**Log of Monitoring Well 1**
Pt. Reyes Affordable Housing Proj.
Point Reyes, California

FIGURE
A-1

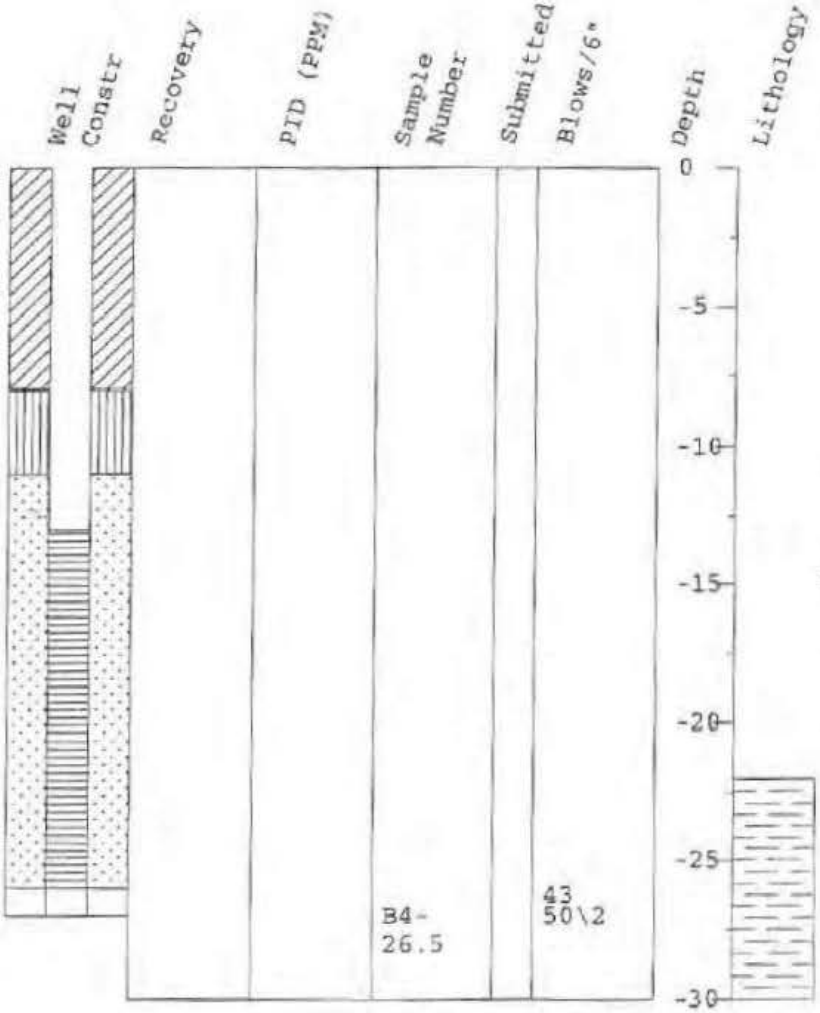



| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | GRAVELLY LOAM: dark brown, loose, damp; change in color to brown at 1.5 -2.0 feet |
| SM | CLAY LOAM w/GRAVEL: reddish-brown, damp, slightly sticky |
| SM | GRAVEL LOAM: light brown, medium dense, damp; some blue-grey rock |
| GP | SANDY GRAVEL: brown, dense |
| CL | SANDY CLAY: brown, damp, medium stiff, slightly plastic |
| SC | CLAYEY SAND: dark to medium brown, dense, moist; increase in moisture @ 25-27 feet |
| GW | SANDY GRAVEL: yellow-brown(some orange-brown), wet, dense |
| | SILTSTONE: dark gray |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356, 1220 Brickyard Cove Road, Point Richmond, CA 94807 | **Log of Monitoring Well 2**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-2 |

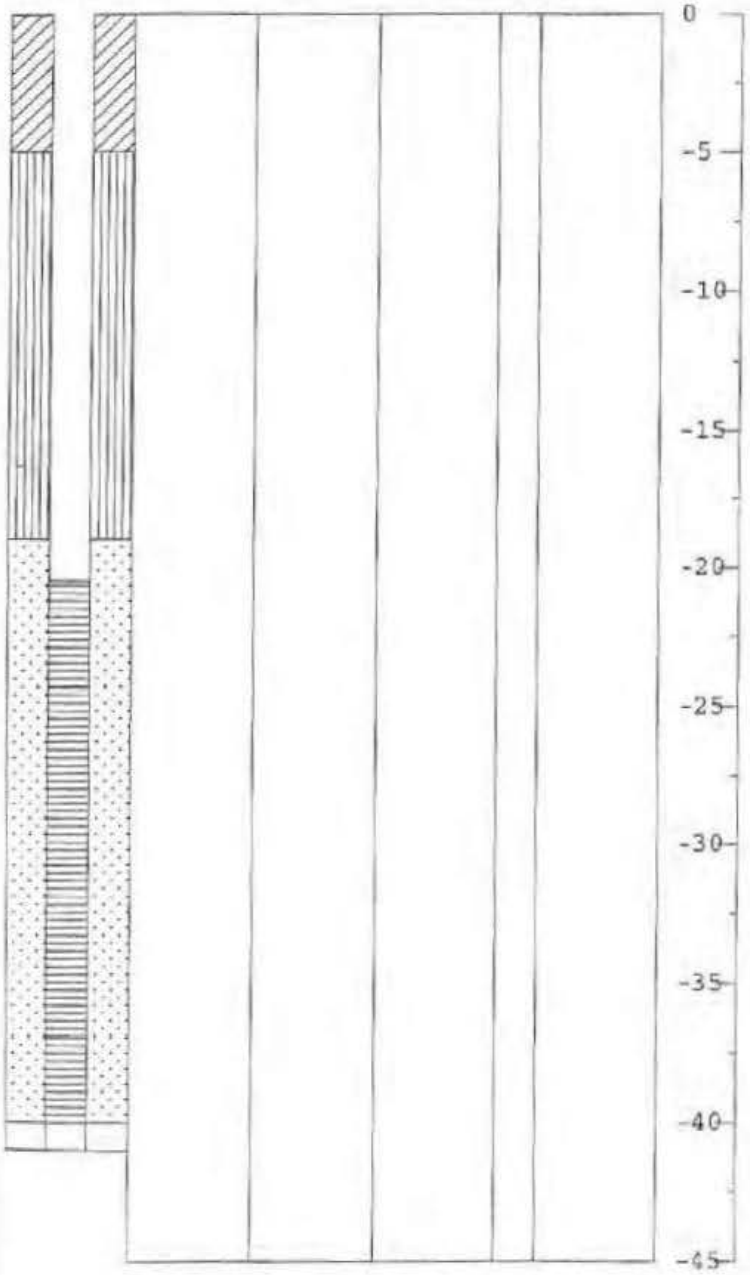



| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 3**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-3 |



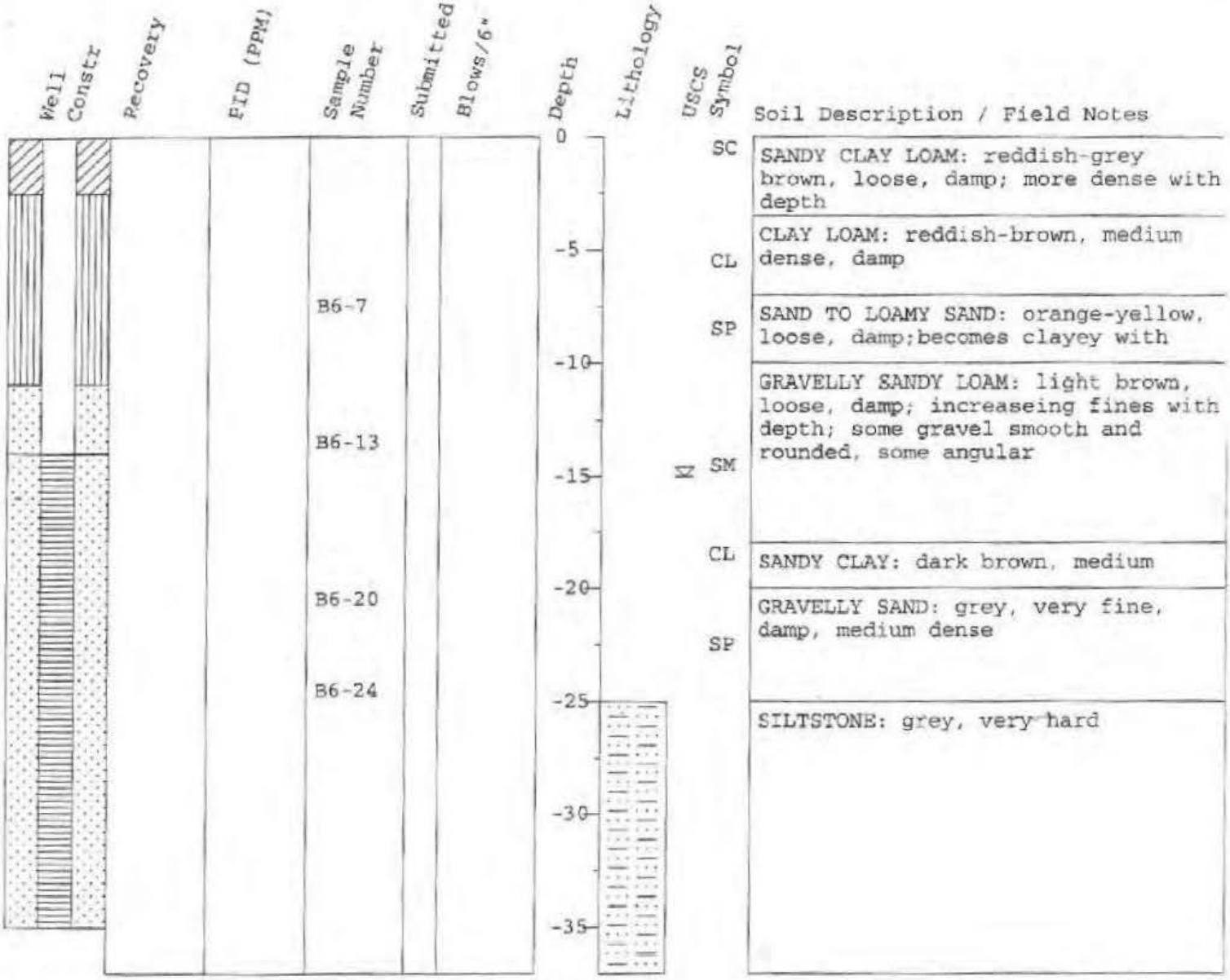

| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | GRAVELLY LOAM: brown, loose, damp |
| | LOAMY GRAVEL: light brown, medium dense, damp |
| SM | GRAVELLY LOAM: tan, medium dense, |
| CL | SANDY CLAY: brown to reddish brown, medium stiff, moist, low to no plasticity |
| SM | GRAVELLY LOAM ground water @ 15-20 feet: light brown, damp, dense |
| CL | SANDY CLAY: brown, stiff, moist; some gravel |
| | SHALE: grey, hard |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH: Pt. Reyes<br>Job No: 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 4**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-4 |

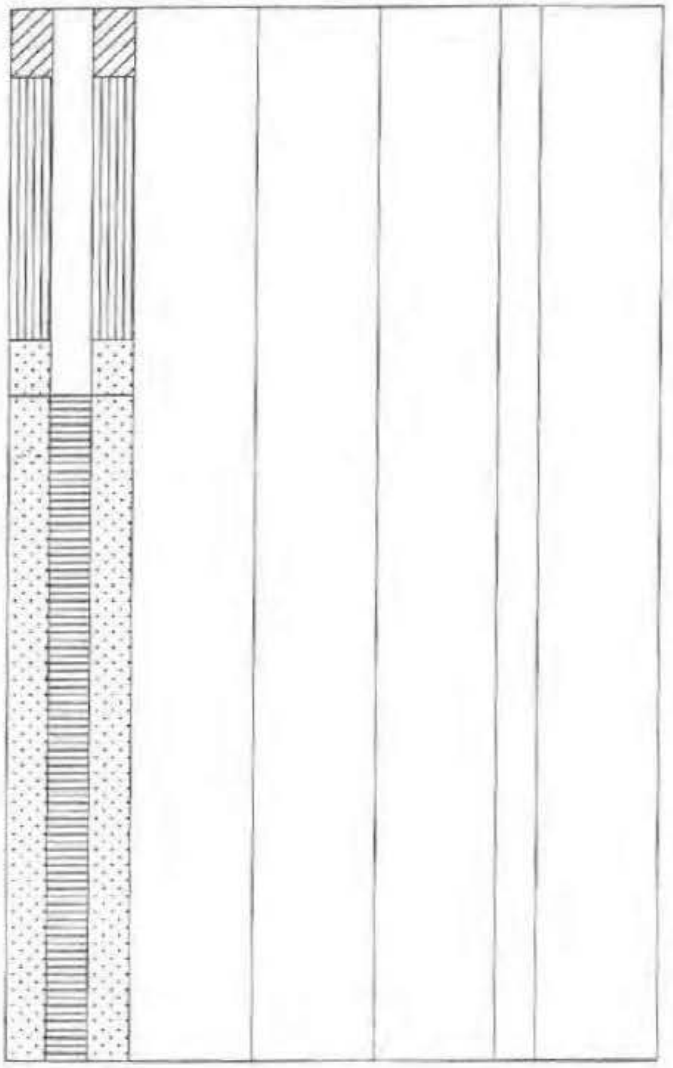



| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | SANDY LOAM: reddish-brown, loose, |
| SM | SILTY SANDY LOAM: brown, medium dense(soft), very moist |
| SM | SILTY SANDY LOAM to CLAYEY SILTY SAND: brown to dark brown, medium dense, very moist to wet groundwater @ 9-10 feet |
| SC | CLAYEY SAND: dark brown to dark grey, wet, sticky, very soft(flowing); interbeds of sand and clayey sand with depth, becomes denser at 18 to 19.5 feet. |
| SC | |
| CL | SANDY CLAY: grey, very moist, sticky and plastic, relativelt soft-firms up with depth |
| SC | CLAYEY SAND: dark grey-brown, very moist to wet |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EA11: Pt. Reyes<br>Job No: 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 5**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-5 |

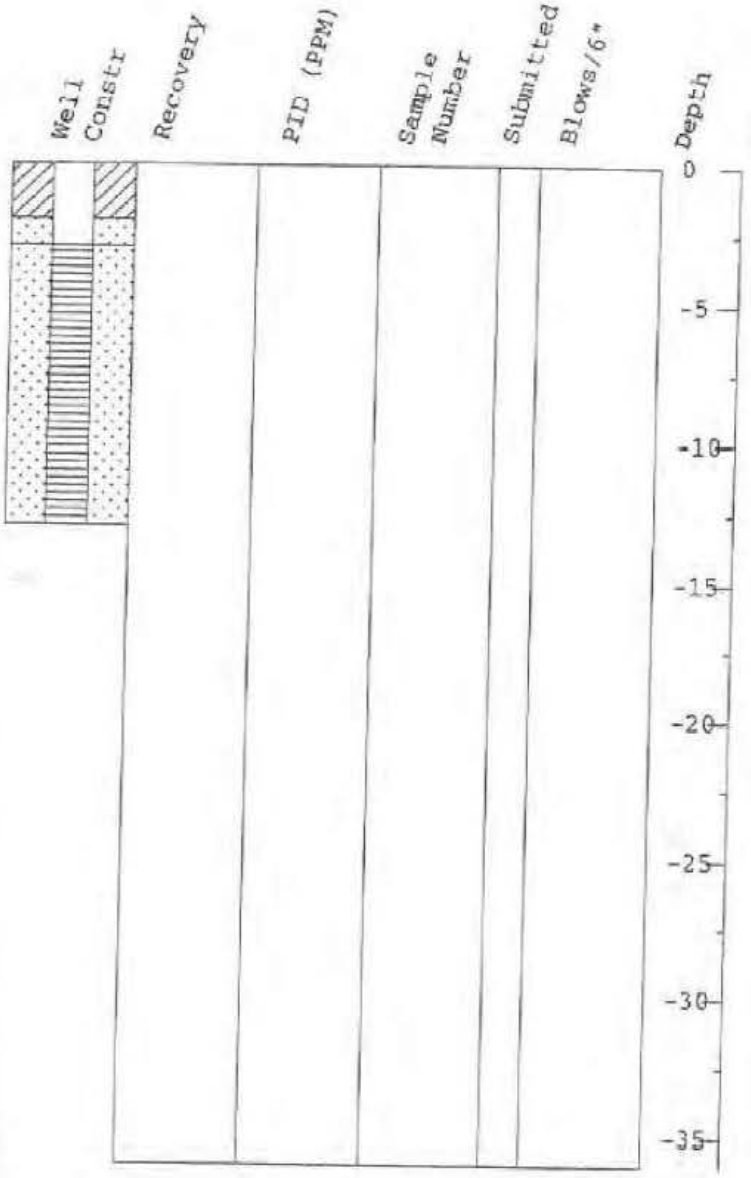



| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH-Pt. Reyes<br>Job No 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 6**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-6 |




| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | SANDY LOAM: brown, loose, damp |
| SC | SANDY CLAY LOAM: light brown, damp; increase in clay content to almost sandy clay with depth |
| SC | CLAY LOAM: orange brown, loose to medium dense, damp; has 4-6 inch sand lenses |
| SP | LOAMY SAND: grey-brown, loose, damp; some gravel with depth |
| SC | SANDY CLAY LOAM: grey brown, damp |
| SM | SANDY LOAM: grey brown, loose, damp |
| GP | GRAVELLY SAND: grey-brown, very dense, wet; interbeds of sand and gravelly san, some fractured siltstone with depth |
| | SILTSTONE: grey, hard |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 7**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-7 |




| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | SANDY LOAM: light reddish-brown, loose, damp |
| SC | SANDY CLAY LOAM: dark reddish-brown, moist, soft |
| CL | SANDY CLAY: brown, soft, low plasticity, moist to wet |
| SM | SILTY SAND: grey, very loose, wet; becomes flowing sands |
| SC | SANDY CLAY LOAM: grey brown, damp |
| | SANDY LOAM: grey brown, loose, damp; denser with depth-21-22 feet |
| SP | GRAVELLY SAND: grey, interspersed with silty sands, grey wet, sticky |
| GP | SANDY GRAVEL: grey-brown, larger pieces of fractured bedrock at 35-36 feet |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 8**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-8 |

# APPENDIX F

## GROUNDWATER AND SOILS INVESTIGATION FOR ONSITE WASTEWATER FACILITIES

QUESTA
ENGINEERING CORP.

# *Groundwater and Soils Investigation for Onsite Wastewater Facilities*

## *Former U.S. Coast Guard Site Point Reyes Station Marin County, California*

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***Prepared for***

***Eden Housing, Inc.***
***and***
***Community Land Trust Association of West Marin***

***July 15, 2022***

Civil,
Environmental
& Water
Resources

# Groundwater and Soils Investigation
# for
# Onsite Wastewater Facilities

## Former U.S. Coast Guard Site
## Point Reyes Station
## Marin County, California

---

*Prepared for:*

***Eden Housing, Inc***
*Hayward, California*
*and*
***Community Land Trust Association of West Marin***
*Point Reyes Station, California*

*Project #2000131*

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# SECTION 1: INTRODUCTION AND BACKGROUND

## INTRODUCTION

This report presents the results of field investigations and analysis of soils, geology and groundwater conditions on the former Coast Guard site in Point Reyes Station, California (**Figure 1**). The work was conducted for Eden Housing, Inc. and Community Land Trust Association of Marin (CLAM) who are in the process of planning building renovations and site improvements to support affordable housing and other community-oriented activities on the site.

The primary purpose of the work was to: (a) determine the hydrogeologic conditions at the site and the relationship and potential impacts to the groundwater supply for the public water supply wells operated by North Marin Water District (NMWD) located in the northeast portion of the site; and (b) explore and test certain areas of the site to determine their suitability for subsurface dispersal of wastewater that will be generated by the project facilities.

Preliminary work conducted by Questa Engineering in 2016 for the County of Marin identified favorable soil conditions for onsite wastewater dispersal mainly on the adjacent open hillside behind and to the north of the row of residential buildings. However, the study also identified the need for further evaluation of the geology and groundwater conditions to determine potential risk of impact to the NMWD water supply wells from the development and operation of new onsite wastewater treatment and dispersal facilities. Additionally, at the outset of the current study, NMWD expressed strong concerns about locating any new onsite wastewater treatment and dispersal facilities on the former Coast Guard site, due to the close proximity and their assessment that essentially the entire site was within the water source protection area (Zone A) for their wells. For all of the years the site was occupied by the U.S. Coast Guard, all sanitary sewage waste had been collected, pumped and hauled for processing to the Coast Guard facility in Two Rock. A means of providing wastewater treatment and dispersal is necessary for the continued use of the housing and other facilities on the property.

The work conducted in this study entailed the following:

- **Work Plan and Agency Coordination.** An investigation work plan was prepared and reviewed with NMWD and Marin County Environmental Health Services (MCEHS). Additional meetings and consultation with these agencies and with the San Francisco Bay Regional Water Board and the State Division of Drinking Water were conducted during the course of the study.

- **Monitoring Wells**. Four (4) monitoring wells were installed in December 2020 within the housing area on the Coast Guard site, which included logging of subsurface materials. Two historical monitoring wells on the Coast Guard site installed as part of a prior study for the neighboring EAH project (2000) were recovered and utilized; an updated elevation survey was conducted to tie all monitoring wells to a new, common benchmark.

- **Groundwater Monitoring and Sampling.** Groundwater levels in each of the monitoring wells were measured approximately monthly from December 2020 through January 11, 2021; wells were sampled and analyzed for a suite of mineral constituents and nitrate-nitrogen in April 2021.

- **Hillside Groundwater Observation Wells.** Six (6) 10-ft deep groundwater observation wells were in installed in the open hillside north of the residential buildings in April 2021 and monitored for groundwater levels through the fall and into early January 2022.

- **Entrance Area Leachfield Testing.** Soil profiles, percolation testing and groundwater monitoring was conducted in February 2021, November 2021, and January 2022 in accordance with Marin County procedures to evaluate the site suitability, capacity and design parameters for subsurface wastewater dispersal in the ½-acre Entrance Area.

- **Analysis, Recommendations and Report.** The information from field studies was compiled, analyzed and summarized in this report addressing: (a) groundwater occurrence, flow directions, gradients, velocities and estimated influence of the project site on the NMWD groundwater source; and (b) site suitability of the Entrance Area for subsurface wastewater dispersal.

Section 2 of this report addresses the groundwater investigation, analysis and findings pertaining to the housing area and NMWD wells. Section 3 covers the soils and related field studies and evaluation for wastewater dispersal in the Entrance Area. Conclusions are summarized in Section 4.

## SITE CONDITIONS

### *Geographical Setting*

The former Coast Guard housing site is a 22.6-acre property located east of downtown Point Reyes Station. It is bordered along the north and west sides by the Point Reyes Affordable Housing Project on Giacomini Road and other undeveloped land, by Lagunitas Creek on the south and east side, and by commercial development and Mesa Road to the southwest.

The developed portion of the site contains several multi-unit housing buildings, dormitory-style accommodations, offices, dining hall, other support buildings and recreation amenities. The major undeveloped open space features of the site consist of a large meadow, riparian corridor and floodplain adjacent to Lagunitas Creek and a broad grassy hillside on the north side of the housing area. The site is currently being planned for renovation of existing buildings to be used for affordable housing and community oriented activities. New onsite wastewater treatment and dispersal facilities will also be developed as part of the project to serve reestablished housing and other activities on the property.

Elevations are about 5 to 15 feet (above mean sea level) in the floodplain/riparian zone, about 30 feet in the housing area, and range from about 40 to 80 feet in the hillside on the northern

portions of the site. Elevations are about 38 feet in the entrance area, which is the site of the former sewage pump-out station that served the Coast Guard facilities.

### *Drainage*

The property is bordered by Lagunitas Creek along the east and south sides of the site; portions of the site are within the 100-yr floodplain of the creek. Lagunitas Creek in this reach is subject to tidal effects from Tomales Bay. Historically, a temporary dam was installed during the summer months on the adjoining downstream property (Giacomini property) to limit salt water intrusion effects on the stream and shallow groundwater in the area. That practice was discontinued in 1997, resulting in more frequent and severe salt water intrusion in recent years.

There are no other streams on the property. Due to the convex landscape, gentle to moderate slopes and relatively permeable soils, a large percentage of the rainfall occurring on the hillside area north of the housing is readily absorbed onsite. Runoff that occurs is mostly in the form of sheet flow that collects in a concrete V-ditch that runs laterally across the slope (southwest to northeast) and discharges to the street drainage system at the Commodore Webster Dr. cul-de-sac. The hillside area is also subject to some amount of subsurface flow and surface runoff from the neighboring (undeveloped) property to the north.

Within the developed portions of the site, runoff from streets, parking, housing and other paved areas is collected in a formal drainage system including gutters, catch basins and buried storm drains up to 24 inches in diameter. There are two primary storm drains with outlets at the edge of the riparian zone: (1) one that runs north-south roughly through the center of the site; and (2) a second that drains the entrance road, western portions of the site, and some runoff from the adjacent Point Reyes Affordable Housing site, with its outlet located at the edge of the meadow to the west of the tennis court.

### *North Marin Water District Wells*

The North Marin Water District has two active water supply wells located on the Coast Guard property adjacent to Lagunitas Creek as indicated in **Figure 2.** The wells provide the primary source of water supply for a service area of more than 20 square miles in the Point Reyes area, with annual water production of more than 100 million gallons. The wells are completed in the alluvium above the bedrock, and draw water mainly from highly permeable sand and gravel deposits that are recharged largely by the stream flow and underflow of Lagunitas Creek and, to a lesser extent, by lateral inflow from the adjacent hills. The wells are approximately 60-feet deep with a 20-foot annular seal and a 40-foot screened section; the casing diameter is 12 inches.

## PRIOR INVESTIGATIONS

The following summarizes the scope and relevant findings from prior subsurface investigations on the project site.

### *Questa Engineering, November 2000*

In 2000 Questa Engineering conducted an investigation of groundwater and hydrogeologic conditions on portions of the Coast Guard site in connection with the planning and development of the adjacent EAH Affordable Housing Project. A key objective of the study was to evaluate the potential for impacts on Lagunitas Creek and the NMWD wells from onsite wastewater disposal systems (leachfields) planned for the EAH development. The work included the installation of eight (8) monitoring wells, three of which (MW-5, -6, and -7) were located in the alluvial and riparian portions of the Coast Guard site between the NMWD wells and the tennis court (see **Figure 3**). No subsurface investigation was conducted within the housing area on the Coast Guard site as part of the study.

Based on borehole logging, several months of water level measurements, elevation surveys, water quality analyses and bail tests, Questa developed maps and cross-sections of the subsurface conditions and general (worst case) estimates of groundwater flow patterns and travel times. The study estimated groundwater travel times from the EAH site, at its closest point, to be approximately 1 to 1.25 years to Lagunitas Creek, and 2.3 to 2.8 years to the NMWD wells. Limited by the lack of subsurface information in the housing area, the study concluded, conservatively, that only a small portion of the eastern edge of the EAH site was potentially within the zone of contribution ("recharge area") of the NMWD wells. The three monitoring wells (MW-5, -6, and -7) continued to be monitored by EAH for 10+ years after the project was built. MW-5 and MW-7 are still accessible and were monitored and incorporated as part of the current study. Boring logs for all three wells are included in **Appendix A**.

### *Tetra Tech, November 2016*

As part of the "Environmental Compliance Due Diligence Activities Report" done on behalf of the U.S. Coast Guard for site closure, Tetra Tech completed geotechnical borings and sampling for contaminants associated with the operation of a former in-ground hydraulic lift in the maintenance building/shop area. Initial work conducted in March 2016 encountered groundwater at 22 feet below grade, which was sampled and analyzed for volatile organic compounds, semi-volatile organic compounds, PCBs and total petroleum hydrocarbons, none of which were detected. Due to the detection of arsenic and other metals in the groundwater samples (thought to be associated with the drilling operation), additional borings were made in October 2016 for follow-up sampling. Test borings were drilled with a truck-mounted hollow-stem auger. One boring was completed to 40 feet without encountering any water. The second boring met refusal at 28 feet and, with the use of a larger auger, was subsequently advanced to a depth of 60 feet. No groundwater was encountered to a depth of 60 feet in this boring. Information from the Tetra Tech report is provided in **Appendix A**.

### *Questa Engineering, December 2016*

In August and September 2016 Questa Engineering completed 17 soil profile test pits within the Coast Guard housing area and on the hillside behind Buildings 101 through 104. The work was done on behalf of the County of Marin to evaluate the site conditions, suitability and potential

capacity for onsite wastewater disposal in different areas of the Coast Guard site. Test pits were completed to depths ranging from 48 to 96 inches below ground surface. No groundwater was encountered in any of the test pits; bedrock (sandstone) was encountered in two test pits; and restrictive soil zones were found in several test pits in portions of the hillside. A test location map and tabular summary of all soil profiles is provided in **Appendix A**.

### *Rockridge Geotechnical, July 2022*

In 2021 Rockridge Geotechnical conducted a preliminary geotechnical investigation of the former Coast Guard housing area for use in current planning and design of site improvements. A Final Geotechnical Investigation report was issued in July 2022. The work involved the logging of four geotechnical borings completed to depths of 21.5 feet, located as shown on **Figure 3.** All four borings encountered fill, terrace deposits and/or older alluvium overlying residual soil/decomposed rock and bedrock of the Franciscan complex at depths ranging from 5 to 18 feet below ground surface. Groundwater was encountered in two of the test borings at depths of 11 and 12 feet; the other two boreholes had no reported groundwater to the full depth of exploration. The subsurface information from the Rockridge boreholes was incorporated in the current study.

# SECTION 2: HOUSING AREA GROUNDWATER STUDY

## FIELD INVESTIGATIONS

### *Installation of Monitoring Wells*

Four (4) monitoring wells were installed within the former Coast Guard housing site for use in defining the hydrogeology of the area and evaluating the relationship and potential impacts of the proposed project on the North Marin Water District water supply wells. Monitoring well locations are shown in **Figure 3**, along with the location of other prior boreholes and monitoring previously noted. The monitoring well locations were selected to provide subsurface information for areas of the site previously unexplored and estimated to potentially drain to the North Main Water District wells.

The drilling and monitoring well installation was performed by Pierson Drilling on Dec 3-4, 2020, using a B-53 Drilling Rig with hollow-stem augers, using a 6-inch diameter bit and 4-inch diameter augers. The auger sections are 5-ft long and have inside diameters of 3.25 inches. Samples were taken using standard penetration test (SPT) and California modified (CAM) samplers. The SPT sampler has an inside diameter of 1.37 inches and a length of 1.5 feet. The CAM sampler has three consecutive liners with inside diameters of 2.45 inches and each having a length of 6 inches to complete a full CAM length of 1.5 feet. A combination of SPT and CAM samples were taken throughout the soil profile to characterize the subsurface materials encountered. Blow counts were taken per sampling interval to determine the resistance of the material. The drill cuttings were examined and logged in the field by one of Questa's field geologists; core samples were taken during drilling for subsequent laboratory inspection and review by Questa's Sr. Engineering Geologist. Appropriate well installation permits were obtained from the Marin County Environmental Health Services (MCEHS); monitoring well completion was witnessed by MCEHS staff.

Well logs showing the lithologic characteristics for each boring and the well completion details are included in **Appendix B**. All of the wells consist of two-inch diameter, Schedule 40 PVC pipe with flush-threaded couplings. The screened sections ranged from 5 to 20 feet of 0.020-inch (aperture width) slotted PVC pipe, depending on well depth. The annular space around (extending 1 to 2 feet above) the screened section was backfilled with a filter pack consisting of No. 2 Monterey sand. The wells were completed to the surface with an annular seal consisting of Portland cement and bentonite. A cap and flush-mounted bolt-down lid was installed at the top of each well casing to protect and conceal the well head at ground surface.

An elevation survey was completed by Questa Engineering to establish the location and the well head (top of casing) elevation for each of the monitoring wells. The survey was referenced to the 17.6-foot (NAVD 88) benchmark elevation at the NMWD wells as shown on the CBG topographic survey of the former Coast Guard site, dated March 2, 2021. Well head elevations for MW-5 and MW-7 were included in the survey, updating the prior survey information from 2000, which was based on NGVD 1929 datum. The well head elevation for MW-6 (lost in riparian overgrowth) was corrected to NAVD 88 datum.

Construction details of the monitoring wells are summarized in **Table 1**, along with details for the other monitoring wells previously installed by Questa on the Coast Guard site in 2000.

**Table 1**
**Monitoring Well Summary**

| *Well No.* | *Location* | *Well Head Reference Elevation (ft-amsl[1])* | *Total Depth (feet)* | *Screened Interval (feet)* | *Depth to Bedrock[2] (feet)* |
|---|---|---|---|---|---|
| CG-1 | SW of Bldg.103 | 35.35 | 40 | 19.5-40 | 10.5 |
| CG-2 | SE of Bldg. 205 | 33.6 | 24 | 14-24 | NE |
| CG-3 | SE of Bldg. 203 | 33.5 | 19.5 | 14.5-19.5 | 13.5 |
| CG-4 | NE of Bldg. 201 | 32.8 | 24 | 14-24 | 19 |
| MW-5 | Riparian Area 225' S of NMWD Wells | 15.22 | 40 | 20-40 | NE |
| MW-6 | Riparian Area 275' S of MW-5 | 17.01 | 34 | 14-34 | 25 |
| MW-7 | Riparian Area S of Tennis Court | 23.99 | 34 | 14-34 | 29 |
| NMWD Well 04 | Riparian Area ~275' E of Bldg 205 | 17.6 | 60 | 33.5-60 | 60 |

[1] amsl: above mean sea level, NAVD 88
[2] Depth to siltstone/shale bedrock

Subsurface conditions encountered at each monitoring well location are summarized below.

- Monitoring Well CG-1:
  - 0 - 2 ft: Silty sand (dark yellowish brown)
  - 2 - 10.5 ft Silty sand with gravel (dark yellowish brown)
  - 10.5 – 35.5 ft Siltstone (dark greenish gray to greenish gray)
  - 35.5 – 40 ft Shale (dark greenish gray)
    - ➢ No groundwater encountered

- Monitoring Well CG-2:
  - 0 - 3.5 ft: Silty sand with gravel (fill) (dark yellowish brown)
  - 3.5 -7 ft Silty sand with gravel (yellowish brown)
  - 7 – 15 ft Clayey sand with gravel (yellowish brown)
  - 15 - 24 ft Clayey gravel with sand (dark yellowish brown)
  - 24 - 25.5 ft Silty sand with gravel (refusal) (dark yellowish brown)
    - ➢ Groundwater at 15.7 ft (under pressure)

- Monitoring Well CG-3:
  - 0 - 4 ft Silty sand with gravel (fill) (brown)
  - 4 – 9 ft Silty sand with gravel (dark yellow brown)
  - 9 – 13.5 ft Silty sand with weathered rock fragments (dark yellow brown)
  - 13.5 – 18 ft Siltstone/silty sandstone w/bedding features (dark greenish gray)
  - 18 – 21.5 ft Siltstone/silty sandstone (dark gray)
    - No groundwater encountered

- Monitoring Well CG-4
  - 0 – 3 ft Sandy silt with gravel (fill)
  - 3 – 5.5 ft Silty sand with gravel (dark brown)
  - 5.5 – 11 ft Clayey sand with gravel (strong brown)
  - 11 – 16 ft Clayey sand with gravel (yellowish brown)
  - 16 – 19 ft Clayey sand with gravel (dark greenish grey)
  - 19 – 24 ft Siltstone (dark greenish gray)
  - 24 – 25.5 ft Shale (dark gray)
    - Groundwater at 17.5 feet (under pressure)

### *Hillside Groundwater Observation Wells*

On April 2, 2021 six (6) groundwater observation wells were installed by Questa field personnel in the northern hillside area behind Buildings 101 through 103 (see **Figure** 3). The purpose of these wells was to obtain information on the occurrence and depth of shallow hillside groundwater for use in: (a) evaluating potential wastewater dispersal suitability for portions of the hillside area; and (b) analysis of groundwater flow patterns in areas potentially within or near the contributing recharge area to the NMWD wells. The observation wells were installed to a depth of 8 to 10 feet bgs with the aid of an 8-inch power auger, and consisted of 4-inch slotted ABS pipe and pea gravel annular filter pack. No groundwater was encountered in any of the observation wells at the time of drilling.

### *Water Level Measurements*

**Monitoring Wells.** Water level measurements (i.e., depth to water from top of well casing) at each of the monitoring wells (CG-1 through CG-4) were made by Questa field personnel at the time of well installation, and multiple times throughout 2021 into early January 2022. Water level readings were also made at MW-5 and MW-7 on most inspection dates. Water level readings were made with the use of an electronic water level probe (*Solinist Model 101*). The results of these readings are presented in **Table 2**.

Using the well head elevation survey completed by Questa Engineering, the groundwater surface elevation corresponding with each depth to groundwater measurement was calculated for each monitoring well and observation date. The resulting information is presented in **Table 3**.

**Table 2. Depth to Groundwater at Monitoring Wells (feet, below well head*)**

| Date | Monitoring Well | | | | | |
|---|---|---|---|---|---|---|
| | MW-5 | MW-7 | CG-1 | CG-2 | CG-3 | CG-4 |
| 12/4/2020 | 4.60 | 20.10 | NE | 15.7 | NE | 17.5 |
| 12/22/2020 | 8.50 | 18.67 | 25.72 | 14.12 | NE | 7.80 |
| 1/7/2021 | 10.16 | 16.27 | 16.86 | 12.41 | 17.72 | 6.92 |
| 1/26/2021 | 9.49 | 9.66 | 16.72 | 12.67 | 17.34 | 7.22 |
| 2/2/2021 | N/A | N/A | 16.81 | 8.99 | 16.31 | 6.09 |
| 2/7/2021 | 8.46 | 8.30 | 16.24 | 8.68 | 16.09 | 6.15 |
| 2/16/2021 | 8.07 | 8.63 | 10.94 | 8.65 | 15.77 | 6.23 |
| 2/24/2021 | 7.69 | 8.02 | 10.77 | 8.82 | 15.36 | 6.33 |
| 3/19/2021 | 6.90 | 8.09 | 10.73 | 9.06 | 14.47 | 6.42 |
| 4/21/2021 | 7.08 | 9.16 | 12.92 | 9.92 | 15.46 | 7.50 |
| 5/21/2021 | 8.38 | 10.75 | 11.42 | 13.04 | 14.33 | 8.08 |
| 6/22/2021 | 12.03 | N/A | 12.10 | 14.78 | 13.68 | 8.99 |
| 8/18/2021 | 11.57 | 17.22 | 12.73 | 16.07 | 12.14 | 9.60 |
| 11/2/2021 | 6.15 | 16.99 | 12.02 | 6.71 | 12.16 | 5.21 |
| 11/15/2021 | 4.03 | 7.73 | 10.86 | 6.82 | 11.28 | 4.76 |
| 1/11/2022 | 2.50 | 6.90 | 9.95 | 6.87 | 9.38 | 4.68 |

*note: well head used as reference point for all water level measurements, typically 0.1 to 0.2 feet below adjacent ground surface.

**Table 3. Groundwater at Elevation at Monitoring Wells (feet, amsl*)**

| Date | Monitoring Well | | | | | |
|---|---|---|---|---|---|---|
| | MW-5 | MW-7 | CG-1 | CG-2 | CG-3 | CG-4 |
| 12/4/2020 | 10.62 | 3.89 | NE | 17.9 | NE | 15.3 |
| 12/22/2020 | 6.72 | 5.32 | 9.63 | 19.48 | NE | 25.0 |
| 1/7/2021 | 5.06 | 7.72 | 18.49 | 21.19 | 15.78 | 25.88 |
| 1/26/2021 | 5.73 | 14.33 | 18.63 | 20.93 | 16.16 | 25.58 |
| 2/2/2021 | N/A | N/A | 18.54 | 24.61 | 17.19 | 26.71 |
| 2/7/2021 | 6.76 | 15.69 | 19.11 | 24.92 | 17.41 | 26.65 |
| 2/16/2021 | 7.15 | 15.36 | 24.41 | 24.95 | 17.73 | 26.57 |
| 2/24/2021 | 7.53 | 15.97 | 24.58 | 24.78 | 18.14 | 26.47 |
| 3/19/2021 | 8.32 | 15.90 | 24.62 | 24.54 | 19.03 | 26.38 |
| 4/21/2021 | 8.14 | 14.83 | 22.43 | 23.68 | 18.04 | 25.30 |
| 5/21/2021 | 6.84 | 13.24 | 23.93 | 20.56 | 19.17 | 24.72 |
| 6/22/2021 | 3.19 | N/A | 23.25 | 18.82 | 19.83 | 23.81 |
| 8/18/2021 | 3.65 | 6.77 | 22.62 | 17.53 | 21.36 | 23.20 |
| 11/2/2021 | 9.07 | 7.00 | 23.33 | 26.89 | 21.34 | 27.59 |
| 11/15/2021 | 11.19 | 16.26 | 24.49 | 26.78 | 22.22 | 28.04 |
| 1/11/2022 | 12.72 | 17.09 | 25.40 | 26.73 | 24.12 | 28.12 |

*amsl: above mean sea level, NAVD 88

**Hillside Observations Wells.** No groundwater was present in the hillside observation wells at the time of installation or during spot checks made during the summer months. Following the major rainfall event of October 24, 2021 water level readings were made on November 2nd and 15th, and then a final time on January 11, 2022. Groundwater was present in the all of the observation wells on each of these dates, with depth to water measurements as listed in **Table 4** below.

**Table 4. Depth to Groundwater, Hillside Observation Wells (feet, bgs)**

| Date | Observation Well | | | | | |
|---|---|---|---|---|---|---|
| | H1 | H2 | H3 | H4 | H5 | H6 |
| 11/2/2021 | 6.15 | 5.75 | 5.62 | 5.25 | 6.62 | 6.23 |
| 11/15/2021 | 6.04 | 6.11 | 6.25 | 6.17 | - | 6.88 |
| 1/11/2022 | 8.63 | 6.81 | 6.44 | 6.78 | 7.05 | 6.44 |

### *Water Quality*

Water samples were obtained from monitoring wells CG-1 through CG-4 on April 6, 2021 and analyzed for a standard suite of mineral constituents and for nitrate-nitrogen. Samples were also taken from MW-5 and MW-7 for nitrate-nitrogen analysis. Water samples were obtained using clean sampling bailers, and were delivered the same day to Brelje & Race Laboratories (Santa Rosa) for analysis. Copies of laboratory reports are provided in **Appendix C**. The results are presented in **Table 5** along with representative raw water quality data for NMWD Well 04 for the same list of water quality constituents tested. The NMWD well water data were obtained from the State Water Board's, Division of Drinking Water online database for public water systems. Since none of the reported Well 04 sampling times coincide with the April 2021 monitoring well sampling, the online data were reviewed to find the most recent historical results representative of winter and spring sampling periods.

**Table 5. Monitoring Well Water Quality Data**

| Constituent | Units | Monitoring Wells on Coast Guard Site April 6, 2021 Sampling | | | | NMWD (Raw Water) |
|---|---|---|---|---|---|---|
| | | CG-1 | CG-2 | CG-3 | CG-4 | Well 04* |
| Total Dissolved Solids | mg/L | 660 | 340 | 940 | 220 | 190 |
| pH | Std units | 7.5 | 7.0 | 7.3 | 8.0 | 7.45 |
| Total Alkalinity as $CaCO_3$ | mg/L | 220 | 120 | 170 | 130 | 100 |
| Specific Conductance | µmhos/cm | 1,200 | 560 | 1,500 | 380 | 288 |
| Calculated Hardness as $CaCO_3$ | mg/L | 180 | 170 | 490 | 88 | 71 |
| Iron | µg/L | 170 | 210 | 40,000 | 6,400 | 320 |
| Manganese | µg/L | 130 | 43 | 700 | 150 | 190 |
| Calcium | mg/L | 27 | 30 | 86 | 17 | 8.4 |
| Magnesium | mg/L | 27 | 22 | 68 | 11 | 24 |
| Sodium | mg/L | 180 | 55 | 140 | 54 | 34 |
| Nitrate, as N** | mg/L | <0.2 | 1.1 | <0.2 | 0.31 | <0.4 |

* Data from CA Drinking Water Watch (https://sdwis.waterboards.ca.gov/PDWW/); winter-spring sampling date closest to the April 2021 sampling of Coast Guard Site monitoring wells in winter-spring sampling.

** $NO_3$-N results for MW-5 and MW-7 on 4/6/21 were 0.74 mg/L and <0.2 mg/L, respectively

### *Rainfall*

Average annual rainfall in Point Reyes Station is approximately 32.6 inches, based on the past 15 to 20 years of recorded data. Rainfall during the study was significantly below this amount during the 2020-21 water year, totaling only 10.64 inches from October 1, 2020 through September 30, 2021. However, from October 1, 2021 through the January 31, 2022, the rainfall was above normal, aided by the unusual "atmospheric river" event of October 24, 2021, and additional normal or above rainfall amounts in November and December. **Table 6** presents the monthly and cumulative rainfall amounts recorded during the study.

**Table 6. Recorded Rainfall at Point Reyes Station**
**October 1, 2020 through January 31, 2022**

| Year | Month | Monthly Rainfall (inches) | Total Accumulated Rainfall (inches) |
|---|---|---|---|
| 2020 | October | 0.0 | 0 |
| | November | 0.0 | 1.22 |
| | December | 2.17 | 3.39 |
| 2021 | January | 3.66 | 7.05 |
| | February | 1.46 | 8.51 |
| | March | 1.97 | 10.48 |
| | April | 0.10 | 10.52 |
| | May | 0.0 | 10.52 |
| | June | 0.0 | 10.52 |
| | July | 0.0 | 10.52 |
| | August | 0.0 | 10.52 |
| | September | 0.12 | 10.64 |
| | **Total - October 2020 – September 2021** | | **10.64** |
| | October | 10.60 | 10.60 |
| | November | 2.88 | 12.88 |
| | December | 8.71 | 21.59 |
| 2022 | January | 0.83 | 22.42 |
| | **Total - October 2021 – January 2022** | | **22.42** |

## ANALYSIS AND DISCUSSION

### *Geologic Setting*

The Project site is within the Coast Range Geomorphic Province of Northern California. Geology of the site consists of Holocene and Pleistocene alluvial soils and Pleistocene terrace deposits overlying bedrock, which is generally characterized as siltstone and shale of the Franciscan mélange. The dark grey siltstone and shale observed underlying the housing site are part of the Franciscan complex mélange bedrock unit as mapped in the area by the U.S. Geological Survey and others. The alluvial soils and terrace deposits consist generally of gravelly loams at the surface followed by inter-bedded layers of gravelly sands and clays of varying thickness and density. The more weathered terrace deposits with broken gravels are consistent with the Millerton Formation, which is prominent along the Tomales Bay east shore.

Based on borehole logs completed by Questa Engineering and Rockridge Geotechnical, the overall thickness of the terrace deposits and older alluvium (above bedrock) ranges from about 5 to 20 feet over most of the housing area, indicating an irregular bedrock surface, grading generally to the east and southeast. The one borehole showing an exception to this was CG-2, which met refusal at 25 feet without any clear evidence of encountering the siltstone bedrock and decomposed bedrock found in other boreholes. Bedrock elevations at each borehole location are displayed in **Figure 4.** Moving off the housing area toward Lagunitas Creek, borehole logs at MW-5, -6 and -7 show a steepening of the bedrock surface and increasing thickness of alluvial deposits. At MW-5 within the creek riparian zone, no bedrock was encountered to a depth of 40 feet below ground surface. At the NMWD wells the alluvium thickness over shale bedrock is reported to be approximately 60 feet (-42 feet below mean sea level).

**Figure 5** presents a longitudinal cross-section (X-X$^1$) depicting the subsurface conditions at CG-1, CG-3 and MW-5, running generally through the center of the housing area, from the base of the northern hillside to the Lagunitas Creek floodplain. Groundwater levels measured at each of the monitoring wells on January 11, 2022 are indicated on the cross-section; this was at the time of highest groundwater conditions encountered during the 13-month study. Section X-X$^1$ illustrates the geologic relationship between the housing area (bedrock terrace) and the Lagunitas Creek floodplain (deeply incised stream channel), and the distinct differences in groundwater regimes.

Additional hydrogeologic cross-sections illustrating similar subsurface conditions across other parts of the building area are provided in **Appendix D**.

### *Groundwater Occurrence*

Groundwater on the Project site and vicinity occurs principally in three different regimes: (1) alluvial aquifer of Lagunitas Creek; (2) terrace groundwater that forms above the siltstone-shale bedrock beneath the housing area; and (3) hillside groundwater that occurs seasonally in response to rainfall within the upper soil zones on sloping areas behind the housing. The bedrock may have fracture zones that contain or convey small quantities of water, but it is generally considered to be a low or non-water bearing formation for all practical purposes. Bedrock is not identified as a source of water to the NMWD wells in their 2013 Groundwater Source Assessment for Well 04.

**Alluvial Aquifer.** The NMWD wells are completed in the deep alluvium that underlies Lagunitas Creek. The wells draw water from highly permeable sand and gravel deposits that are recharged largely by the streamflow/underflow of Lagunitas Creek and, to a lesser degree, by lateral inflow from the adjacent hills. The 2013 Groundwater Source Assessment for NMWD Well 04 indicates the aquifer has a very high yield, with a static water level of 11 feet below ground surface, a 1-foot drawdown to 12 feet during pumping, and well capacities of 250 to 300 gallons per minute for the two production wells (02 and 04). A static water level of 11 feet bgs corresponds to an elevation of approximately 7 feet above mean sea level.

The alluvial aquifer extends upstream and downstream following the alignment of the creek, with varying width. Based on subsurface exploration by Questa Engineering and Rockridge, it is

estimated that the alluvial aquifer on the Coast Guard site extends laterally to near the toe of slope where the developed building area grades down to the creek riparian zone. There is no indication from boreholes that the alluvial aquifer extends laterally beneath the housing area.

**Terrace Groundwater.** Outside of the alluvial area, groundwater beneath the project site occurs as a result of percolating rainwater that collects in the soils above the siltstone and shale bedrock. This includes zones of saturation on the hillsides and terrace formation where most of the housing development is located. The groundwater develops seasonally, rising in the rainy season and dropping in the dry season as indicated by water level monitoring at CG-1 and CG-3. There is also evidence from monitoring wells CG-2 and CG-4 that groundwater in underlying bedrock fractures rises under pressure in some portions of the terrace area. The origin of this water is likely percolating rainwater on the adjacent hillside that drains through exposed bedrock fractures. Water level monitoring during the study showed discontinuous groundwater zones across the terrace area, with no consistent water table from which groundwater contours could be approximated and mapped. Water movement is slow due to the irregular and generally flat to gently sloping bedrock surface underlying the site.

**Hillside Groundwater.** In the hillside area north of the housing, percolating rainwater collects in the more permeable surface soils above restrictive sub-soils and weathered bedrock. The thickness of the saturated zone is relatively thin; it typically develops during the rainy season and drains away readily in the dry season due to the sloping terrain. Compared to the terrace area, the winter groundwater level (water table) tends to be at a shallower depth on the hillsides due to thinner soil development above the bedrock. Groundwater monitoring in the hillside area during the early 2021-22 winter season showed depth to groundwater in the range of about 5.5 to 7 feet. The depth to groundwater was fairly consistent between the different observations points on the hillside on each inspection date, indicating that ground surface topography can be used as a reasonable indicator of the direction of groundwater movement.

### *Groundwater Levels*

The study was conducted during a period of very low rainfall during winter, spring and summer of 2021, followed by a surge of heavy rainfall in late fall and early winter, highlighted by the "atmospheric river" event of nearly 11 inches of recorded rainfall in Point Reyes Station in the month of October, with 6.3 inches on October 24, 2021. **Figure 6** is a graph showing the fluctuations in groundwater levels at the four monitoring wells in the housing area over the full duration of the study, summarized as follows:

- CG-1. This monitoring well is located at the base of the hillside north of the housing and was dry at the time of installation on December 3-4, 2020. There was no water encountered on top of the siltstone bedrock surface (10.5 ft bgs) or within the siltstone and shale bedrock to a depth of 40 feet. Groundwater rose relatively quickly (by 20 to 25 feet) in the monitoring well in response to rainfall during the month following installation. We interpreted this to be percolating rainfall infiltrating and filling the 2-inch casing, and not the reflection of a general rise of groundwater in the area of the monitoring well. By mid-February 2021 in response to additional rainfall, water levels in CG-1 finally reached a depth corresponding with top of the bedrock surface (10 to 11 feet, bgs) and remained fairly constant at that level through March. Water levels dropped

slowly from March to the end of summer, with a dip in April attributable to the bailing of water for water quality sampling the first week of April. During the summer the water dropped a few feet, but never drained fully from the casing. Following the October 24th rainfall event water levels rose gradually in November to January, with the final reading of 9.95 feet bgs on January 11, 2022, the highest level observed during the study period. This corresponds to a saturated depth of roughly 0.5 to 1 foot above the bedrock surface.

- CG-2. This monitoring well showed indications of penetrating a zone of confined or semi-confined groundwater (under pressure), as water levels rose immediately following drilling. Through December 2020 and January 2021 the groundwater levels rose a few feet, and then rose another few feet in response to continued and increasing rainfall in February, reaching a depth of 8 to 9 feet bgs. From March through the end of summer groundwater levels dropped by 7+ feet, returning approximately to the groundwater level observed at the time of well installation. There was a strong water level response to October 24th rainfall, rising close to 9.5 feet to a depth of 6.7 feet bgs. This was the highest groundwater level observed at this monitoring well during the study, and remained close to this level through the last reading on January 11, 2022 (6.87 feet, bgs). The rapid water level response to the October 24th rainfall is further evidence that the monitoring well is influence by groundwater under pressure (i.e., recharged from a source at a higher elevation), rather than an indication that the water table in the area of the well rose 9 to 10 feet in response to the rain event.

- CG-3. This monitoring well is located 250 feet from CG-1 in the direction of Lagunitas Creek, and about 75 feet from the top of slope where the terrace area grades down to the creek riparian area. CG-3 was dry at time of installation, and then showed an initial water level rise in December 2020, followed by a gradual rise throughout all of 2021, notably increasing in response to the October 24th rainfall, and reaching its highest level at the last reading on January 11, 2022. The groundwater level reached the top of bedrock surface in summer 2020 and ended with a saturated depth above bedrock of about 4 feet in January 2022.

- CG-4. Similar to monitoring well CG-2, this well penetrated bedrock in a zone exhibiting groundwater under pressure. Groundwater was found at a depth of 17.5 feet at the time of drilling, and rose by 10 feet two weeks later. Water levels continued to rise, reaching a high level of about 6 feet bgs in February 2021. After that the water levels steadily dropped through the spring and summer to a low of 9.6 feet bgs in August. Like CG-2, the water level responded quickly following the October 24th rainfall, rising about 4 feet to a depth of 5.2 feet bgs in early November, and continuing to rise to a final depth of 4.68 feet bgs on January 11, 2022. The water levels at CG-4 were consistently the highest elevations of all four monitoring wells throughout the study.

The groundwater elevations associated with the water levels at the four monitoring wells all reached between 24 to 28 feet above mean sea level (amsl) their highest point in January 2022. In contrast, the groundwater at MW-5 and MW-7 located in the alluvial aquifer reached maximum elevations of 12.72 and 17.09 feet amsl, respectively. The normal static water level at the NMWD wells is reported to be about 7 feet amsl.

### *Groundwater Time-of-Travel Estimates*

**Background.** Planning and operation of public water systems entails delineation of drinking water source Protection Zones to identify, understand and manage potential risks of contamination from activities within the water source area. Different Protection Zones are delineated based on the type of contamination threat. The highest protection level is Zone A, which is established to protect the drinking water supply from viral, microbial and direct chemical contamination. Zone A is defined by the surface area overlying the portion of the aquifer that contributes water to the drinking water well(s) within a 2-year time-of-travel. The 2-year time-of-travel criterion is used because research indicates that bacteria and viruses survive less than two years in soil and ground water.

According to the California Drinking Water Source Protection Program, the six primary delineation methods used in California, in order of increasing sophistication, are:

1. Arbitrary fixed radius
2. Calculated fixed radius
3. Modified calculated fixed radius
4. Analytical methods
5. Hydrogeologic mapping
6. Numerical flow/transport models

In 2013 NMWD used the calculated fixed radius method to delineate a Water Source Protection Zone A consisting of a radius of 1,600 feet around their wells located on the former Coast Guard property. Limited hydrogeologic information was available to NMWD in 2013. The additional soil, geologic and groundwater information obtained by Questa through this current study, augmented by the Rockridge Geotechnical investigation, permitted a hydrogeologic mapping approach to be used to estimate the 2-year time-of-travel to the NMWD wells as it pertains to the Project site. This was conducted as described below.

**Groundwater Flow Estimation. Figure 7** provides a groundwater flow schematic illustrating the normal route of groundwater movement from the adjacent upland areas of the Project site to the well location within the alluvial aquifer. **Figure 8** shows the estimated extent and configuration of the three groundwater regimes in plan view on a topographic map. **Figure 8** also shows a series of nine (9) hypothetical groundwater flow paths, drawn to approximate the expected route of groundwater movement through the site - from the hillside, across the terrace-building area, and finally entering the alluvial aquifer where it is then subject to the drawdown influence of the pumping wells. By calculating the time-of-travel along each of the flow paths - starting at the wells and working "'upstream" – one can estimate where along each flow path percolating water on the land surface would have to start in order to reach the wells within a travel time of two years (730 days). Connecting these points then gives a line representing the approximate 2-year time-of-travel boundary, indicated by the dashed green line in **Figure 8**.

The rate of water movement (velocity) is different in each of the three groundwater regimes, as indicated by the notes and calculations in **Figure 7** and discussed below.

- **Hillside Groundwater Flow.** Water movement in the hillside groundwater regime is governed by the properties of the soils and geologic materials and the slope (gradient) of the water table of the underlying bedrock surface. The pumping of the NMWD wells has no effect on hillside groundwater flow. The direction of groundwater flow in the hillside was estimated to be at right angles to the land surface topography, based on consistent depth to groundwater readings during the November 2021 and January 2022 water level monitoring. The rate of groundwater flow can be estimated by applying Darcy's Law[1], which requires known values or estimates as follows:

    - Horizontal permeability (hydraulic conductivity), $K_h$: estimated at 6 feet per day based on soil profiles and many dozens of percolation tests on the neighboring EAH Affordable Housing project in an area of similar soils;

    - Slope, i: varies across the hillside from 0.04 in the upper part to 0.20 in the lower part of the hillside; separate calculations were made for the upper and lower slopes using actual slopes determined from topography for each flow path;

    - Effective porosity, $\pi$: estimated at 0.10 for predominantly clay loam textured soils (USGS, 1967)

    Per Darcy's Law, velocity, $V = (K_h * i)/\pi$

    Upper slope, $V = (6 * 0.04)/0.10 =$ 2.4 ft/day

    Lower slope, $V = (6 * 0.20)/0.10 =$ 12 ft/day

- **Terrace Groundwater Flow.** Water movement in the terrace groundwater zone is also governed by the properties of the soils and geologic materials, the slope/gradient and the principles of Darcy's Law. The pumping of the NMWD wells has no effect on groundwater flow within the terrace groundwater zone; the elevation of the bedrock surface is well above the normal water level in the alluvial aquifer, and monitoring of water levels throughout the study showed no water level fluctuations that could be attributed to well operation. As previously noted, the terrace bedrock surface is irregular, without a consistent or definitive slope. There are indications of general gradient to the south (downstream); but, to be conservative, we estimated the flow to be at right angles to top of bank along the creek riparian zone.

    The following assumptions were made for use in the application of Darcy's Law for the terrace groundwater flow:

    - Horizontal permeability (hydraulic conductivity), $K_h$: estimated at 20 feet per day based on soil profiles and percolation testing at the Entrance Area, having very similar conditions to the housing area.

    - Slope, i: estimated at 0.005 based on water table gradient between CG-1 and CG-

[1] Darcy's Law is an equation that describes the flow of a fluid through a porous medium; it says that the discharge rate q is proportional to the gradient in hydraulic head and the hydraulic conductivity ($q = Q/A = -K*dh/dl$).

3 on January 11, 2022, the time of highest groundwater levels during the study.

- Effective porosity, $\pi$: estimated at 0.20 for very gravelly silty sands (USGS, 1967); also assumed by NMWD in 2013 calculations for the alluvial aquifer.

Per Darcy's Law, velocity, $V = (K_h * i)/\pi$

$V = (20 * 0.005)/0.20 = \underline{0.5 \text{ ft/day}}$

- **Alluvial Aquifer Groundwater Flow.** For the alluvial aquifer the groundwater velocity was assumed to be as determined by NMWD in their 2013 Water Source Protection Zone analysis using the calculated fixed radius methodology. The groundwater flow calculations indicated a 2-year time-of-travel distance of 1,591 feet, which equates to a groundwater velocity of 2.18 ft/day (1,591f ft/730 days). For the groundwater flow paths indicated in **Figure 8**, it was assumed that the pumping influence of the NMWD wells extends downstream to all reaches of the alluvial aquifer uniformly and on a continuous year-round basis. This is a conservative (safe) assumption, and does not take into account the increase in the opposing downstream groundwater gradient associated with wet season flows in Lagunitas Creek, and the reduction in well usage during the dry season when salinity levels increase.

Using the above assumptions and methodology, calculations were completed as displayed in **Table 7** to determine the estimated 2-yr groundwater travel distance along each of the flow paths shown in **Figure 8**. **Figure 9** shows the estimated 2-year time-of-travel boundary on an overview of the project site, also including the projected flow path from the Entrance Area, where the 2-year time-of-travel boundary is estimated to be at edge of the wetland meadow area.

**Table 7. 2-year Time-of-Travel Calculations**

| Flow Path No. | | Alluvial Aquifer @ 2.18 ft/d | Terrace Groundwater @ 0.5 ft/d | Lower Hillside @ 10.2 to 11.3ft/d | Upper Hillside @ 2.5 to 2.6 ft/d | TOTAL | |
|---|---|---|---|---|---|---|---|
| | | | | | | Distance | Days |
| 1 | Distance, ft | 260 | 215 | 202 | 423 | 677 | |
| | Days | 119 | 430 | 18 | 163 | | 730 |
| 2 | Distance, ft | 303 | 245 | 215 | 202 | 763 | |
| | Days | 139 | 490 | 20 | 81 | | 730 |
| 3 | Distance, ft | 313 | 278 | 223 | 22 | 814 | |
| | Days | 144 | 556 | 22 | 9 | | 730 |
| 4 | Distance, ft | 322 | 291 | - | - | 613 | |
| | Days | 148 | 582 | - | - | | 730 |
| 5 | Distance, ft | 388 | 276 | - | - | 664 | |
| | Days | 178 | 552 | - | - | | 730 |
| 6 | Distance, ft | 598 | 228 | - | - | 826 | |
| | Days | 274 | 456 | - | - | | 730 |
| 7 | Distance, ft | 765 | 190 | - | - | 955 | |
| | Days | 351 | 379 | - | - | | 730 |
| 8 | Distance, ft | 1,070 | 120 | - | - | 1,190 | |
| | Days | 491 | 239 | - | - | | 730 |
| 9 | Distance, ft | 1,313 | 64 | - | - | 1,377 | |
| | Days | 602 | 128 | - | - | | 730 |

# SECTION 3: ENTRANCE AREA LEACHFIELD SITE EVALUATION

## SITE DESCRIPTION

The "Entrance Area" is an approximately ½-acre area located at the west end of Commodore Webster Dr. It was identified as a potential site for onsite wastewater dispersal based on known favorable soil conditions in this area of Point Reyes Station, and because it is the farthest distance from the NMWD water supply wells of any area on the former Coast Guard property.

This area of the site formerly served as the sewage collection point for the Coast Guard housing facilities, where tanker trucks would regularly pump and haul raw sewage to the Coast Guard wastewater treatment facility located in Two Rock. Three large sewage holding tanks and associated piping and other equipment are still located on the east end of the Entrance Area adjacent to the circular drive that was used by the pump trucks.

The site is level to very gently sloping, mostly covered in grasses with a prominent row of cypress trees, a large eucalyptus and a scattering of pines and other trees. There are no watercourses or drainage channels within the site. Lagunitas Creek is located approximately 450 feet to the east of the Entrance Area at its closest point. Additionally, the site is bordered on the east side by wetlands and hillside seeps, located where the land slopes down to a broad meadow. A 100-foot horizontal setback would need to be maintained between these wetlands and any wastewater treatment or dispersal facilities located in the Entrance Area. The former sewage holding tanks and associated equipment all lie within the 100-foot wetland setback area and, presumably, would need to be decommissioned and removed.

Field investigations of the Entrance Area were conducted by Questa in February 2021 to evaluate soils, percolation, and groundwater conditions for onsite wastewater suitability. The work conducted and results are presented below. **Figure 10** is a map showing the test locations.

## FIELD INVESTIGATIONS

### *Soils*

Soil conditions were initially investigated on February 2, 2021 with 3-inch diameter hand-augur pilot test holes to depths ranging from about 5 to 8 feet. Test holes were made in five locations spread across the site, all located on the south side of Commodore Webster Drive (see **Figure 10)**. Temporary observation pipes were installed in each pilot hole. On February 23rd the pilot holes were advanced to a depth of 10 feet with the aid of an 8-inch power auger, and converted to groundwater observation wells using 4-inch slotted ABS pipe and pea gravel annular filter pack.

Logs of soil conditions encountered in these augur test holes/observation wells are summarized in **Table 8** below. As indicated, the test holes showed very consistent soil conditions across the site and throughout the 10-foot exploration depth. Gravelly and very gravelly loam, sandy loam and sandy clay loam soils were common in surface soils and sub-soils, with no evidence of any restrictive layer (e.g., clay, hard pan, or bedrock). No groundwater was encountered at the time

of pilot test auguring or during observation well installation in February 2021. See discussion below under Groundwater Observations for results of additional groundwater monitoring of these test holes through the end of 2021 and early 2022.

**Table 8. Soil Auger Boring Logs – Entrance Area**

| Test Hole # | Depth (inches, bgs*) | Description | Ground Slope |
|---|---|---|---|
| A-1 | 0 - 30" | Dark brown gravelly loam; moist from recent rains to 22" | 3.5% |
| | 30 - 54" | Light brown very gravelly loam; dry; no groundwater | |
| | 54 - 120" | Gravelly sandy clay loam; dry; no groundwater | |
| A-2 | 0 - 30" | Dark brown, very gravelly loam; moist; no groundwater | 4% |
| | 30 - 120" | Light brown very gravelly loam; dry; no groundwater | |
| A-3 | 0 - 40" | Dark brown very gravelly loam; moist; no groundwater | 14% |
| | 40-120" | Light brown very gravelly loam; dry; no groundwater | |
| A-4 | 0 - 56" | Dark brown fine sandy clay loam; moist, no groundwater | <2% |
| | 56 - 120" | Medium brown gravelly loam; dry; no groundwater | |
| A-5 | 0 - 56" | Dark brown fine sandy clay loam; moist; no groundwater | <2% |
| | 56-66" | Dark brown fine sandy loam; moist; no groundwater | |
| | 66-120" | Medium brown gravelly loam; dry; no groundwater | |

bgs: below ground surface

Formal soil profile test pits were excavated by backhoe and logged by one of Questa's staff geologists on February 23, 2021. This work was conducted in coordination with Marin County Environmental Health Services (MCEHS), who were present to witness the work and review the observed soil conditions first hand. Six test pits were excavated and located as indicated in **Figure 10**. Test pits T-1 through T-4 were located on the south side of Commodore Webster Dr., and T-5 and T-6 were in the narrow strip of land on the north side of the street. One additional hand-augur test hole was also completed on the north side of the street. Soil profile logs are included in **Appendix E** and summarized briefly as follows:

- **T-1 through T-4**. Test pits T-1 through T-4 were all very similar, showing typically clay loam to silty clay loam surface soils to a depth of 36 to 53 inches, underlain by sandy clay loam and gravelly clay loam sub-soils to a depth of 96 to 98 inches. Structure was typically moderate to strong, sub-angular blocky. Gravel/rock content (sandstone fragments) was generally <15% in surface soils, and 15% to 35% in sub-soils. No mottling (i.e., indicator of seasonal groundwater) was observed in any of these four test pits over the full depth of exploration. All soil test pits in this area exhibited very favorable soil conditions for subsurface wastewater dispersal.

- **T-5 and T-6**. Test pits T-5 and T-6, located on the in the landscaping strip along the north side of Commodore Webster Dr, were distinctly different from each other. T-6, located to the west near the entrance gate, was excavated to a depth of 5 feet and showed similar soil conditions to those found in test pits A-1 through A-4. The surface soils consisted of 37 inches of clay loam, underlain by gravelly clay loam to 61 inches (bottom of test pit). In contrast, T-5, located directly across the street from the circular drive entrance, showed 9 inches of topsoil over clay subsoil. The clay soil extended to the bottom of the 54-inch deep test pit and exhibited mottling throughout. An additional augur hole (AX-6.5) was completed midway between T-5 and T-6 and found to have similar conditions to T-6. It showed 36 inches of clay loam surface soils, underlain by gravelly clay loam to a depth of 77 inches. Any wastewater dispersal fields developed on the north side of Commodore Webster Dr should be confined to the areas represented by T-6 and augur boring AX-6.5; soils in the area of T-5 are unsuitable.

### *Percolation Testing*

Questa conducted percolation testing of soils at the Entrance Area site on February 24, 2021, which included thirteen (13) percolation holes installed at depths of 12, 24, 36, 40 and 48 inches. The test hole locations are shown in **Figure 10**; percolation test data sheets are provided in **Appendix E.** The testing was conducted in accordance with MCEHS procedures, and MCEHS staff was present to observe the testing and measurements, as well as the preparation and pre-soaking of test holes the day prior to running the tests. Percolation test results are summarized in **Table 9** showing very consistent and favorable rates at all depths. As indicated, the results ranged from 1.7 to 16.8 minutes per inch (mpi), with an overall average rate of 6.3 mpi.

**Table 9. Entrance Area Percolation Test Results – February 24, 2021**

| Test Hole # | Test Hole Depth (inches) | Adjusted Stabilized Rate (minutes per inch, mpi) |
|---|---|---|
| P1 | 48 | 16.8 |
| P2 | 40 | 6.6 |
| P3 | 48 | 7.0 |
| P4 | 48 | 7.2 |
| P5 | 36 | 9.0 |
| P6 | 24 | 11.5 |
| P7 | 6 | 2.9 |
| P8 | 40 | 2.3 |
| P9 | 24 | 4.3 |
| P10 | 12 | 5.1 |
| P11 | 24 | 1.7 |
| P12 | 24 | 5.9 |
| P13 | 40 | 1.9 |
| Average Rate at 12" – 24" Depth | | 5.7 |
| Average Rate at 36" – 48" Depth | | 6.7 |
| Overall Average Percolation Rate | | 6.3 |

### *Groundwater Observations*

The 10-foot deep groundwater observation wells A-1 through A-5 (mentioned above) were monitored periodically during the 2021 calendar year through early January 2022. The results are listed in **Table 10** and discussed below.

**Table 10. Depth to Groundwater - Entrance Area***
**February 24, 2021 - January 11, 2022**

| Date | Groundwater Observation Wells, 10-ft deep | | | | |
|---|---|---|---|---|---|
| | A1 | A2 | A3 | A4 | A5 |
| 2/24/2021 | >10 | >10 | >10 | >10 | >10 |
| 3/19/2021 | >10 | >10 | >10 | >10 | >10 |
| 4/21/2021 | >10 | >10 | >10 | >10 | >10 |
| 5/27/2021 | >10 | >10 | >10 | >10 | >10 |
| 8/18/2021 | >10 | >10 | >10 | >10 | >10 |
| 11/2/2021 | 7.87 | 8.07 | 8.01 | >10 | 9.48 |
| 11/15/2021 | 8.38 | 8.65 | 8.68 | >10 | 9.41 |
| 1/11/2022 | 8.92 | 9.24 | 9.26 | >10 | 9.46 |

*Feet below ground surface

As indicated, no groundwater appeared in any of the observation wells from the time of installation (February 2021) through the end of summer. Groundwater was first observed in four of the five wells (all but A-4) in direct response to the "atmospheric river" rainfall event that occurred on October 24, 2021 in the Bay Area, when a total 6.3 inches of rain was recorded at Point Reyes Station. Allowing time for the groundwater to develop and stabilize, the observation wells were checked the week after the atmospheric river event on November 2nd and two weeks after that on November 15th. Final groundwater measurements were made on January 11, 2022. Briefly, the results showed the following:

- Groundwater rose the highest in A-1, A-2 and A-3 to depths of 7.87 to 8.07 feet bgs, all located on the west side of the circular drive.

- Subsequent monitoring on November 15th showed a water table drop of about 0.5 feet in A-1, A-2 and A-3, and continued decline to about 9 to 9.25 feet bgs at the last observation on January 11, 2022.

- No groundwater appeared in A-4 in response to the massive October 24th rain event or at any subsequent observation times.

- At A-5 the groundwater rose to 9.48 feet bgs on November 2, 2021, and rose very slightly by a few hundredths of a foot later in November, ending at 9.46 feet bgs at the last reading on January 11th.

The total rainfall recorded at Point Reyes Station between October 1, 2021 and January 11, 2022 was 22.42 inches, which is equal to about 69 percent of the total average annual rainfall (32.64

inches) for the area (**Table 6**). This exceeds the minimum criterion of 50 percent of annual average rainfall used by Marin County EHS as the threshold for groundwater measurements in wastewater dispersal field site suitability evaluations. Therefore, although the heavy rainfall came very early in the season, the groundwater readings are a fair representation of wet weather conditions at the site and can be used as a basis of design for wastewater dispersal fields in the Entrance Area as follows:

- A depth to groundwater of 8 feet bgs would be appropriate on the west side of the circular drive in the area of A-1, A-2 and A-3.

- A depth to groundwater of 10 feet bgs would be appropriate in the area of A-4, within the circular drive area.

- The area represented by observation well A-5, which lies within the 100-foot wetland setback area, would be excluded from any use for wastewater dispersal.

- The road shoulder on the north side of Commodore Webster Dr. was explored to a depth of 5 feet with a soil test pit and hand-auger, indicating conditions similar to A-2, located 50 feet away on the south side of the street. A depth to groundwater of at least 5 feet can be assumed in this area. If a design requiring greater separation to groundwater is required additional wet weather testing is recommended.

## ONSITE WASTEWATER SUITABILITY

The Entrance Area has suitable conditions for onsite wastewater disposal, which can be summarized as follows.

### *General site features*

- Gently sloping site, typically 2% to 5%
- No drainages or water courses
- 100-foot setback to adjacent wetland area
- 450-foot horizontal setback distance to Lagunitas Creek
- >¼-mile from North Marin Water District municipal supply wells

### *Soil and Groundwater Conditions*

- Deep, well-drained gravelly loam to gravelly sandy clay loam soils
- No evidence of a restrictive layer to a depth of 10 feet or more
- Good percolation, averaging 6 mpi at 12-inch to 48-inch testing depths
- Wet weather groundwater at 8 to 10 feet below ground surface

### *Design Considerations*

The site can support any type of wastewater dispersal system in common use in Marin County,

including conventional gravity leaching trenches, pressure distribution system, sub-surface drip dispersal, or above-ground fill or mound systems. Wastewater application rate(s) for design would depend on the level of wastewater treatment provided, the type of dispersal system, and the proposed dispersal system depth. An application rate within the range of 1.0 to 2.0 gallons per day per square foot of infiltrative surface ($gpd/ft^2$) would be appropriate.

# SECTION 4. CONCLUSIONS

1. The former Coast Guard housing area is located on older alluvium and terrace deposits overlying bedrock, which is generally characterized as siltstone and shale of the Franciscan mélange. The bedrock surface, which averages about 15 to 20 feet below ground surface, is elevated above the adjacent alluvial aquifer and riparian zone of Lagunitas Creek. The more weathered terrace deposits with broken gravels are consistent with the Millerton Formation, which is prominent along the Tomales Bay east shore.

2. The NMWD wells are located in a highly productive alluvial aquifer consisting of sands, silts, clay and gravel deposits in the deeply incised channel of Lagunitas Creek. The primary source of recharge to the alluvial aquifer is percolating streamflow from Lagunitas Creek, with a small contribution of lateral inflow from adjacent uplands. The bedrock is generally considered to be a low or non-water bearing formation for all practical purposes. Subsurface investigation of the housing area indicates the alluvial aquifer does not extend under the housing area.

3. There are three basic groundwater regimes on the former Coast Guard site: (a) the Lagunitas Creek alluvial aquifer; (b) terrace groundwater that occurs as a result of percolating rainfall that collects in the soils above the siltstone shale bedrock; and (c) hillside groundwater that consists of percolating rainwater that collects in the more permeable surface soils above restrictive sub-soils and weathered bedrock. The general path of groundwater across the Project site is from the hillsides, to the terrace groundwater, to the alluvial aquifer.

4. The rate of flow (velocity) is different for each of the three groundwater regimes. From Darcy's Law, soil/geologic conditions and topography: (a) hillside groundwater velocity is estimated at about 2.4 to 12 feet per day, dependent on ground slope; and (b) terrace groundwater velocity is estimated at 0.5 feet per day. Groundwater velocity in the alluvial aquifer is a function of the pumping of NMWD wells, estimated at 2.18 feet per day.

5. Using the calculated groundwater velocities and conservatively estimated groundwater flow paths, the boundary of the 2-yr time-of-travel to the NMWD wells was determined and mapped. The mapped boundary, based on the hydrogeology of the site, provides a refinement of the calculated fixed radius of 1,600 feet developed by NMWD in 2013 for Well 04.

6. Investigation of the Entrance Area shows it has suitable conditions for onsite wastewater disposal, with well-drained soil depths of 8+ feet, average percolation rates of 6 minutes per inch, and wet weather depth to groundwater of 8 to 10 feet. The site can support any type of wastewater dispersal system in common use in Marin County, including conventional gravity leaching trenches, pressure distribution system, sub-surface drip dispersal, or above-ground fill or mound systems.

## SECTION 5. REFERENCES


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2. County of Marin, MarinMap Map Viewer. https://www.marinmap.org/Html5Viewer/Index.html?viewer=smmdataviewer

3. Marin County Flood Control and Water Conservation District Real-Time Rainfall, Creek Stage, and Weather Data. https://marin.onerain.com/

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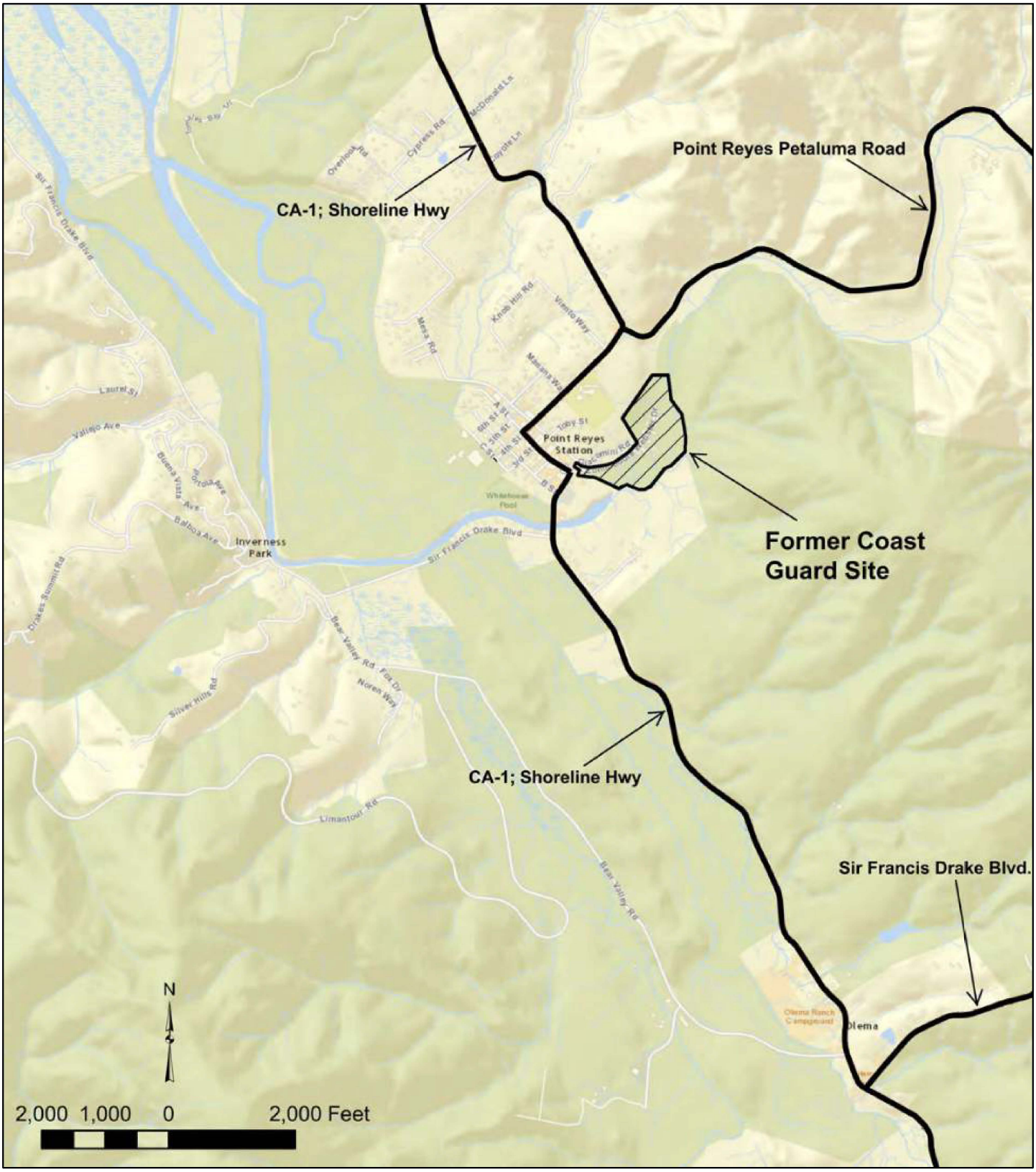
10. USDA–Soil Conservation Service, Soil Survey of Marin County California, 1985.

11. U.S. Geological Survey, "Specific Yield - Compilation of Specific Yields for Various Materials", Water Supply Paper 1662-D, 1967. Prepared in Cooperation with California Department of Water Resources.

# Report Figures

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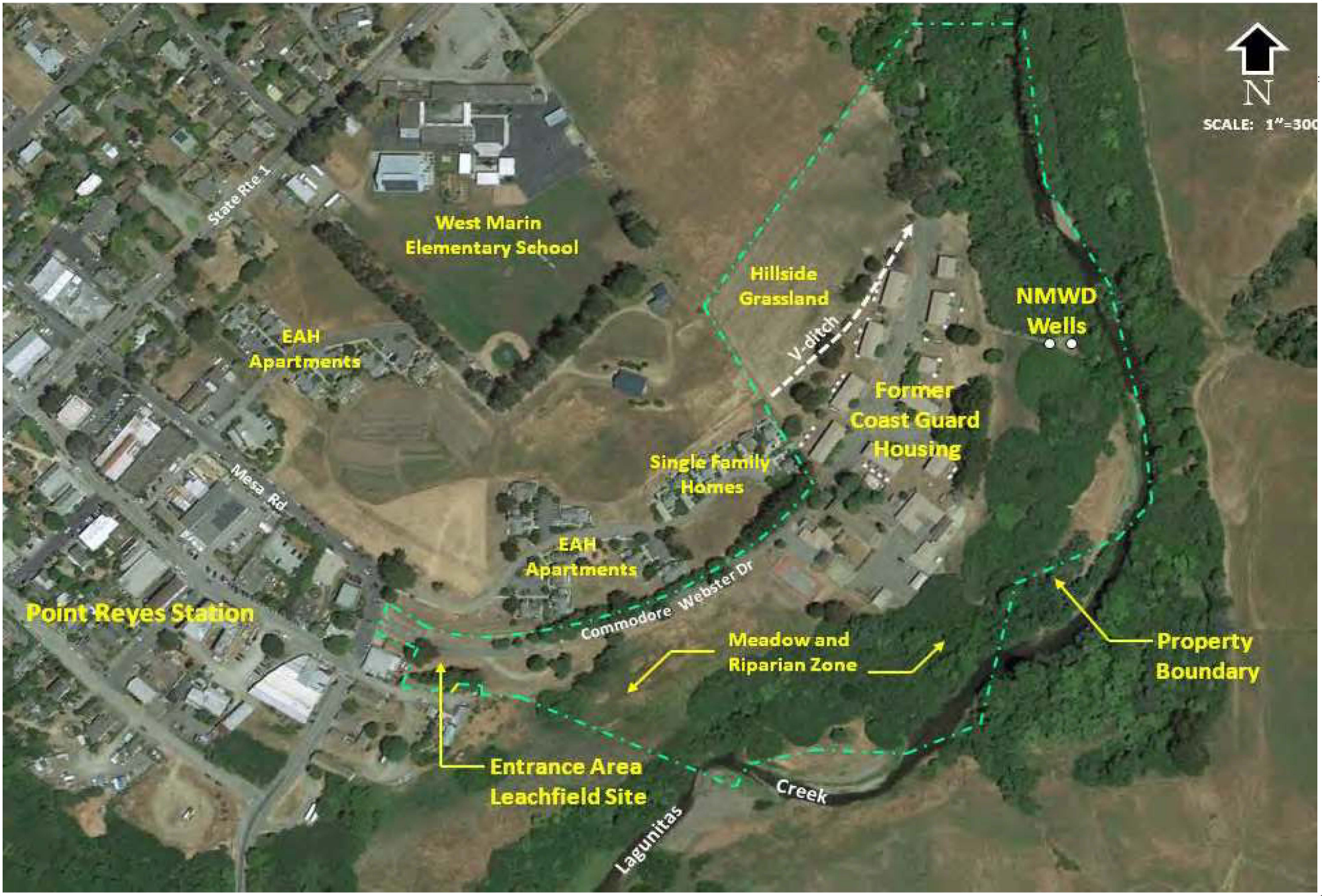
# LOCATION MAP

FORMER COAST GUARD SITE, POINT REYES STATION, CA

FIGURE 1

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**PROJECT SITE**

FIGURE
2

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

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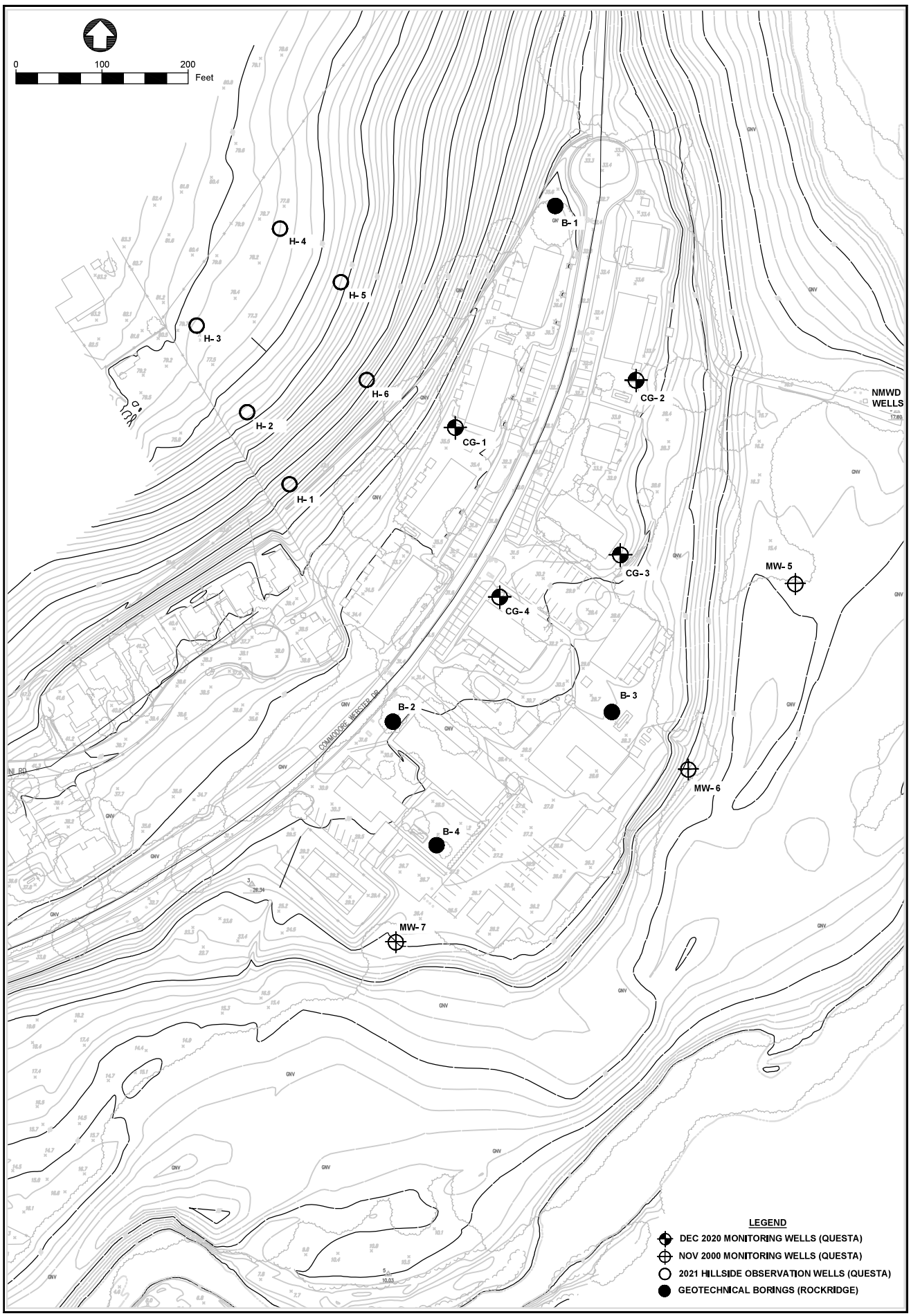


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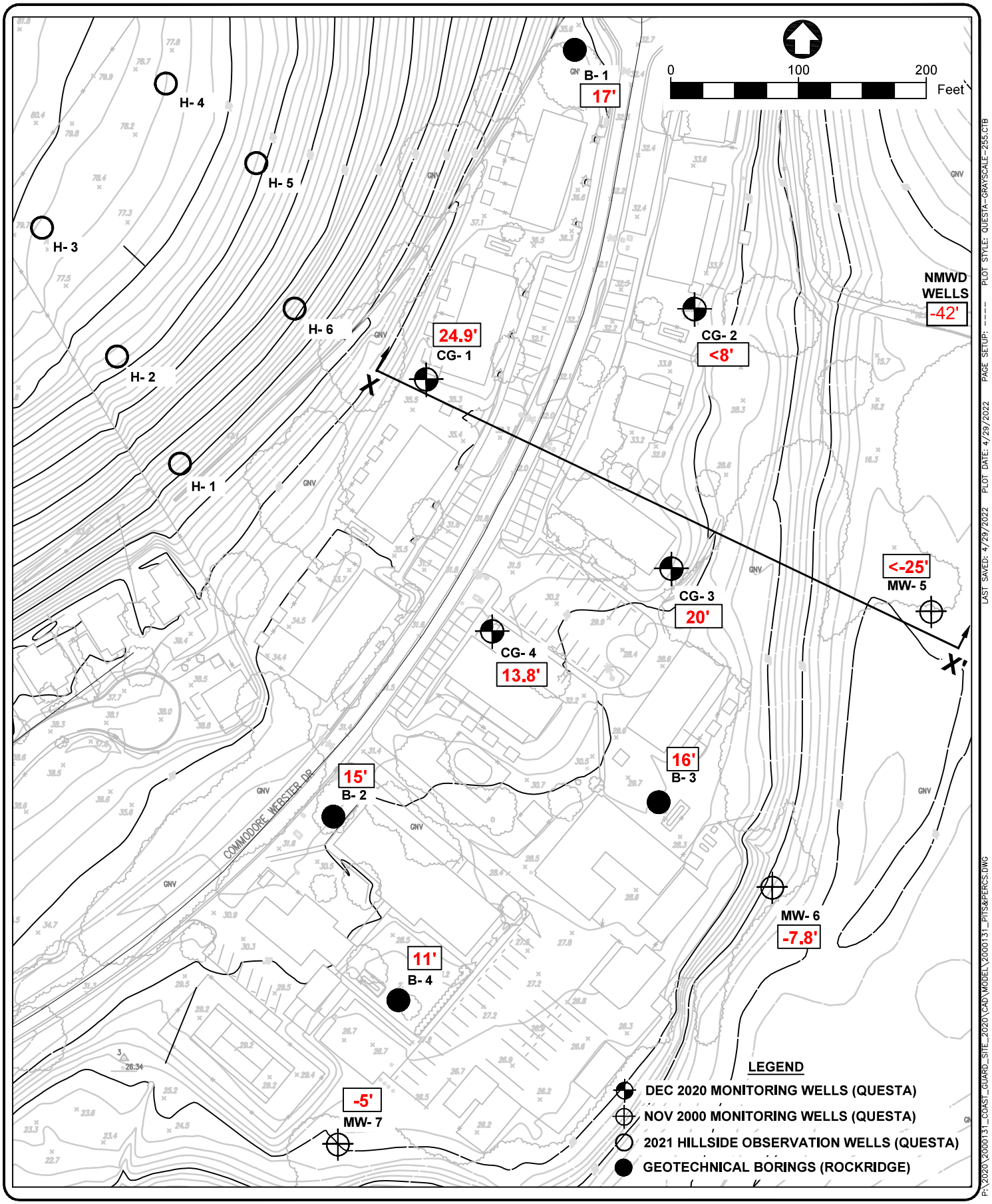
**MONITORING WELLS AND GEOTECHNICAL BORINGS**

FIGURE 3

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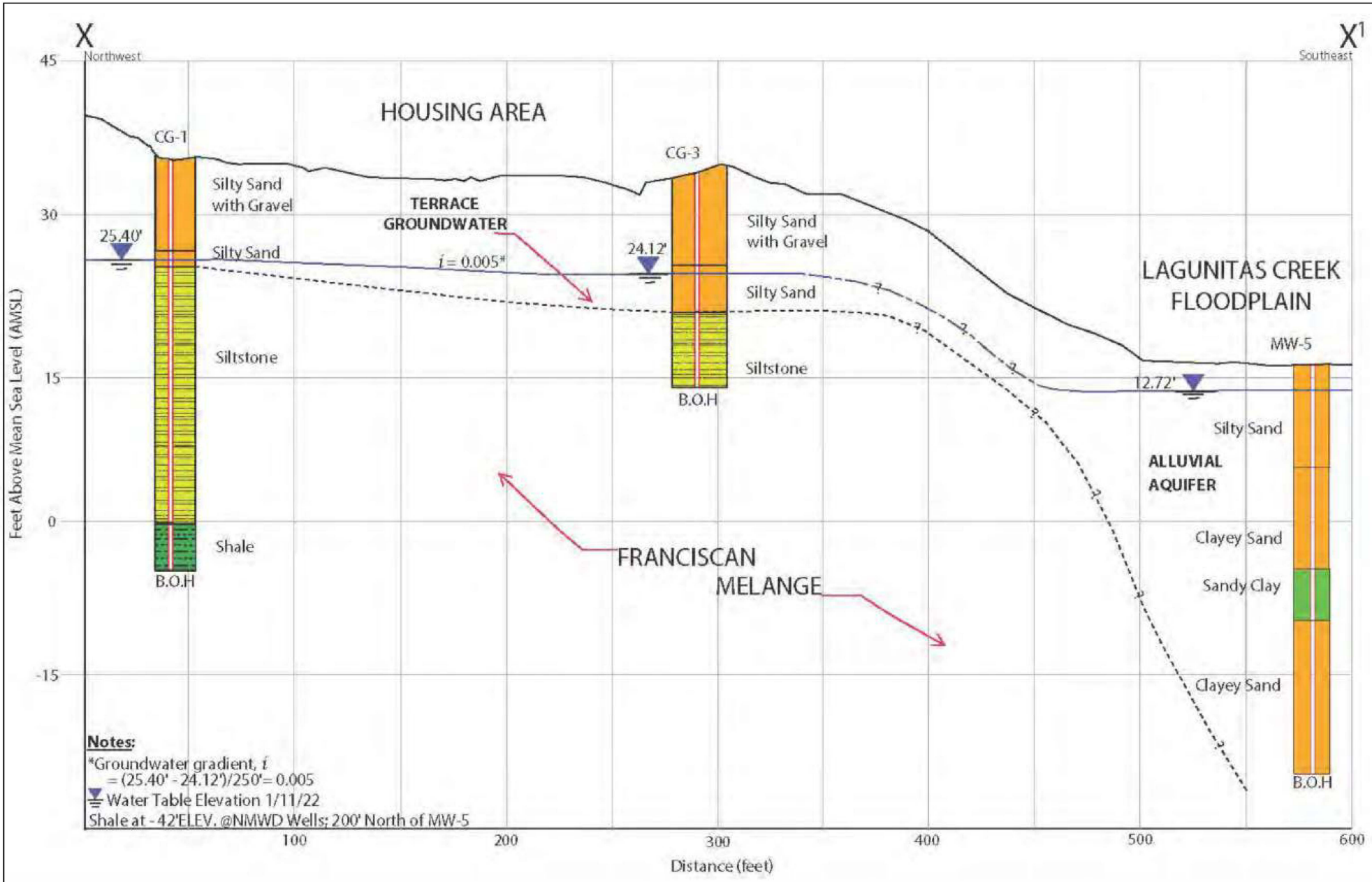
# BEDROCK ELEVATIONS
## (FEET, AMSL)

FORMER COAST GUARD SITE, POINT REYES STATION, CA

FIGURE
4

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| DATE: | 4/28/22 |
| PROJECT: | Former Coast Guard Site, |
| | Point Reyes Station |
| PROJECT NO.: | 2000131 |
| DRAWN: | NXH |
| APPROVED: | NH |

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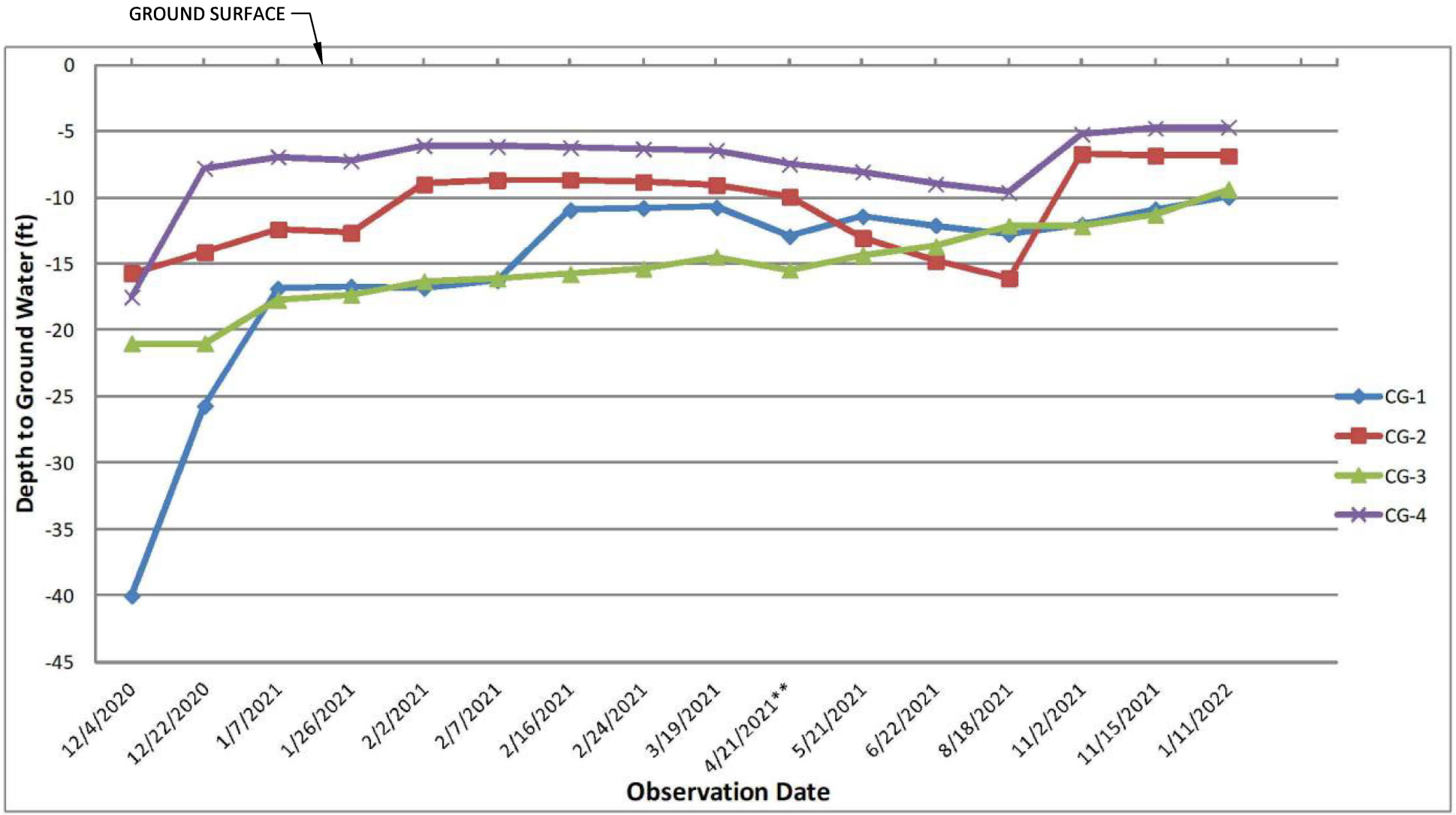
**HYDROGEOLOGIC X-SECTION X – X$^1$**

**JANUARY 11, 2022 GROUNDWATER LEVELS**

FIGURE

5

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**DEPTH TO GROUNDWATER**
**HOUSING AREA MONITORING WELLS**
DEC 2020 TO JAN 2022

FIGURE
**6**

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

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**GROUNDWATER FLOW SCHEMATIC**

FIGURE
7

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

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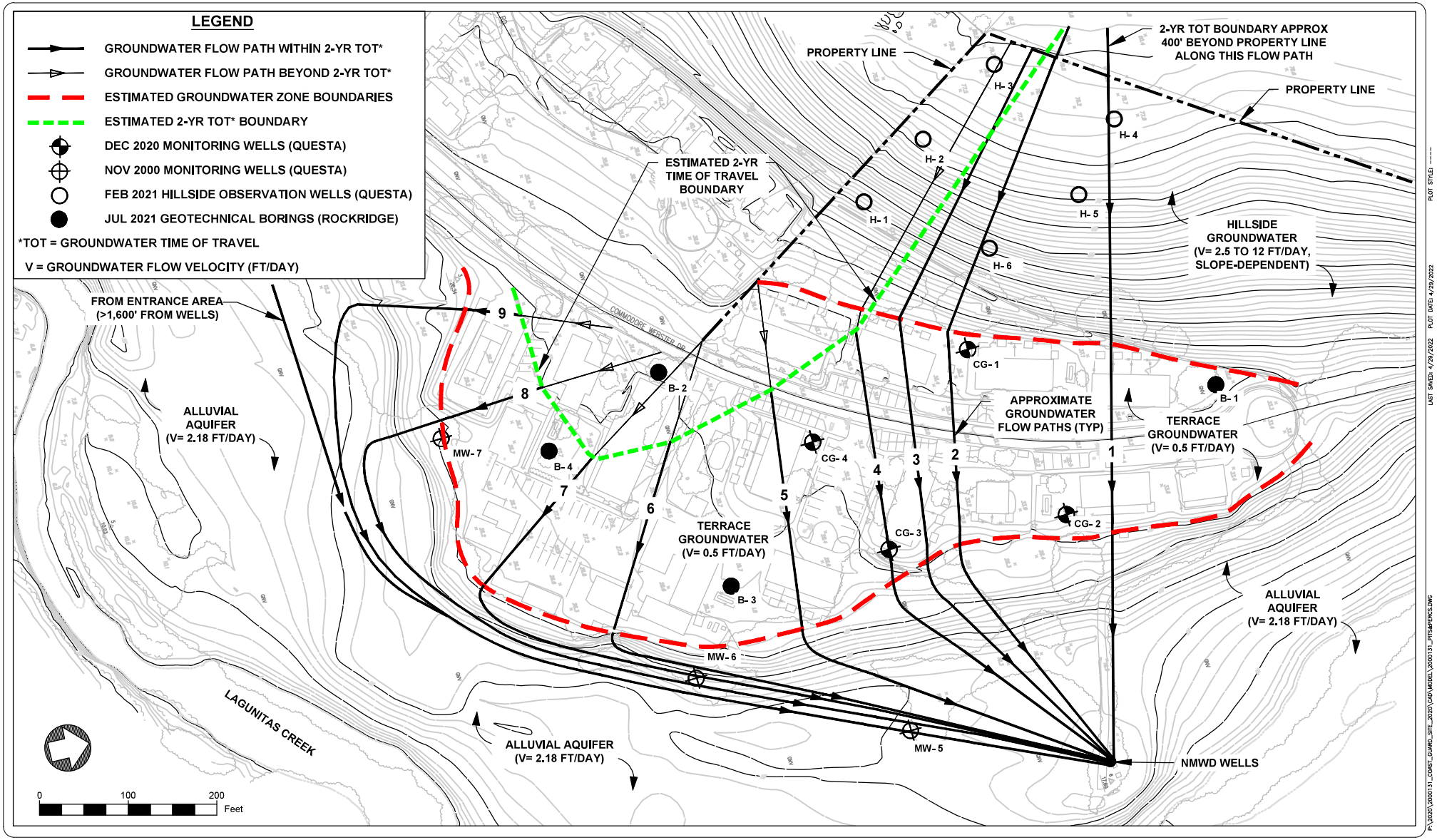


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**ESTIMATED GROUNDWATER FLOW PATHS AND 2-YEAR TIME OF TRAVEL**

FIGURE 8

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

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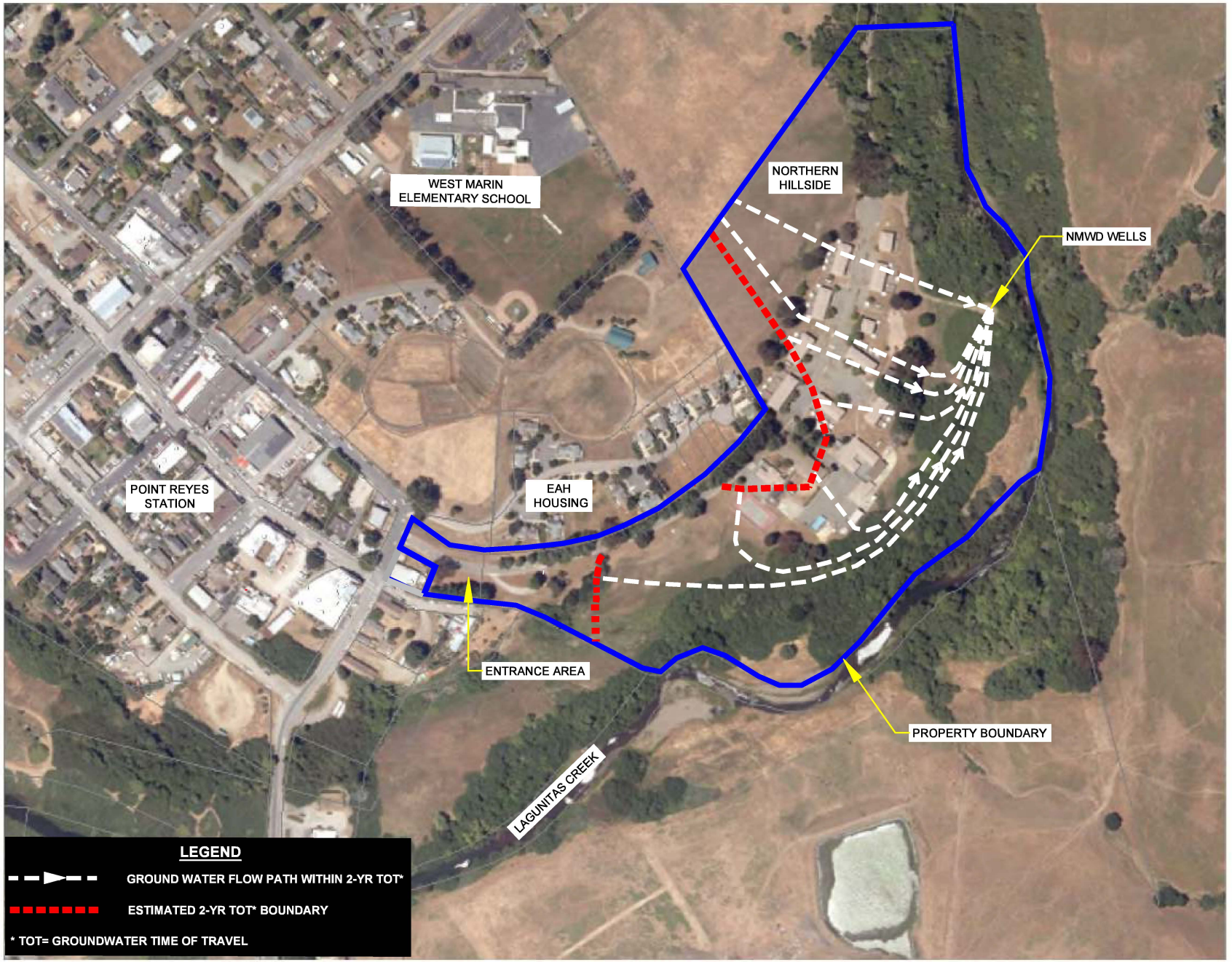


APPROX SCALE:
1" = 420'

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## PROJECT SITE GROUNDWATER ESTIMATED 2-YR TIME OF TRAVEL

FIGURE
9

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

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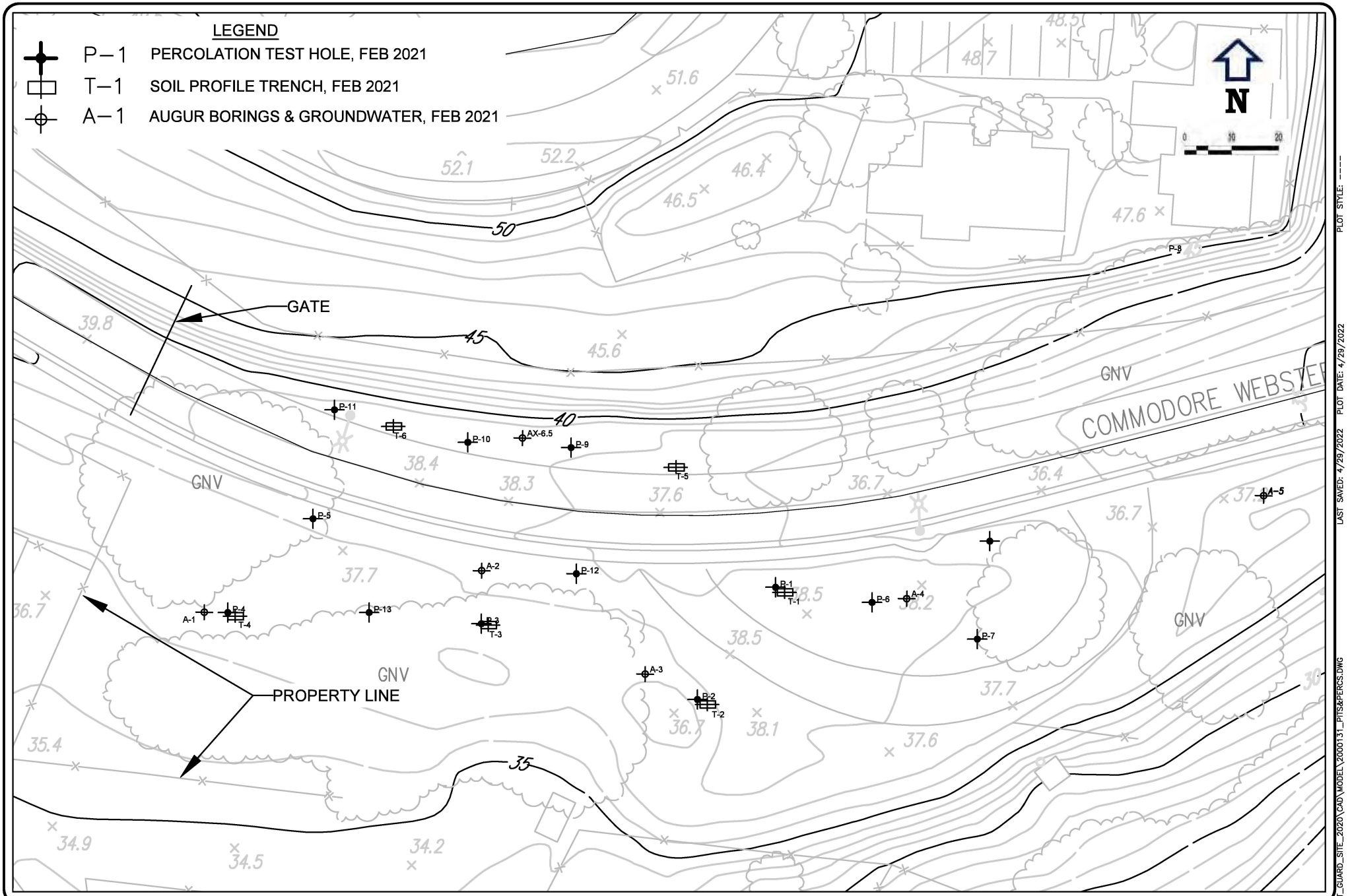


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## ENTRANCE AREA SOILS AND GROUNDWATER TEST LOCATIONS

FIGURE
**10**

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

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# Appendix A

## Information from Prior Investigations

# Hydrogeolgic Investigation

for

# Point Reyes Affordable Housing Project

Point Reyes Station
Marin County, California

---

Prepared for

**Point Reyes Affordable Homes, Inc.**
2169 E. Francisco Boulevard, Suite B
San Rafael, California 94901

Project #99190

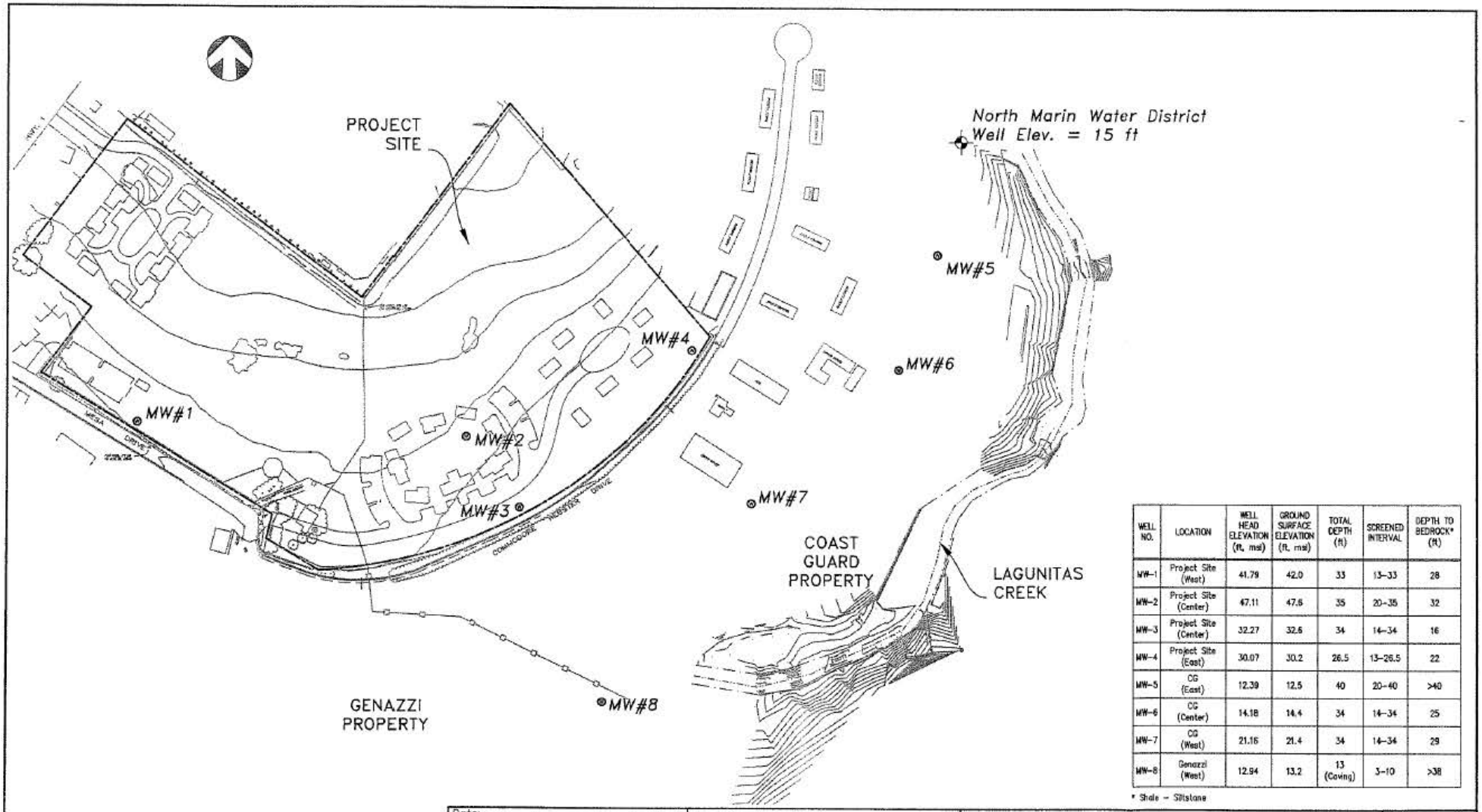
Prepared by

Questa Engineering Corporation
1220 Brickyard Cove Road, Suite 206
Point Richmond, California 94807
(510) 236-6114

November 22, 2000

Norman N. Hantzsche, P.E.
Principal/Managing Engineer

Willard N. Hopkins, C.E.G.
Sr. Engineering Geologist




| WELL NO. | LOCATION | WELL HEAD ELEVATION (ft. msl) | GROUND SURFACE ELEVATION (ft. msl) | TOTAL DEPTH (ft) | SCREENED INTERVAL | DEPTH TO BEDROCK* (ft) |
|---|---|---|---|---|---|---|
| MW-1 | Project Site (West) | 41.79 | 42.0 | 33 | 13-33 | 28 |
| MW-2 | Project Site (Center) | 47.11 | 47.6 | 35 | 20-35 | 32 |
| MW-3 | Project Site (Center) | 32.27 | 32.6 | 34 | 14-34 | 16 |
| MW-4 | Project Site (East) | 30.07 | 30.2 | 26.5 | 13-26.5 | 22 |
| MW-5 | CG (East) | 12.39 | 12.5 | 40 | 20-40 | >40 |
| MW-6 | CG (Center) | 14.18 | 14.4 | 34 | 14-34 | 25 |
| MW-7 | CG (West) | 21.16 | 21.4 | 34 | 14-34 | 29 |
| MW-8 | Genazzi (West) | 12.94 | 13.2 | 13 (Caving) | 3-10 | >38 |

* Shale - Siltstone

200' 0' 200' 400'

GRAPHIC SCALE

| | |
|---|---|
| Date: | 11/22 / 00 |
| Drawn: | M.M.M. |
| Appr'd: | N.H. |
| Dwg. No: | 99190_11x17.DWG |

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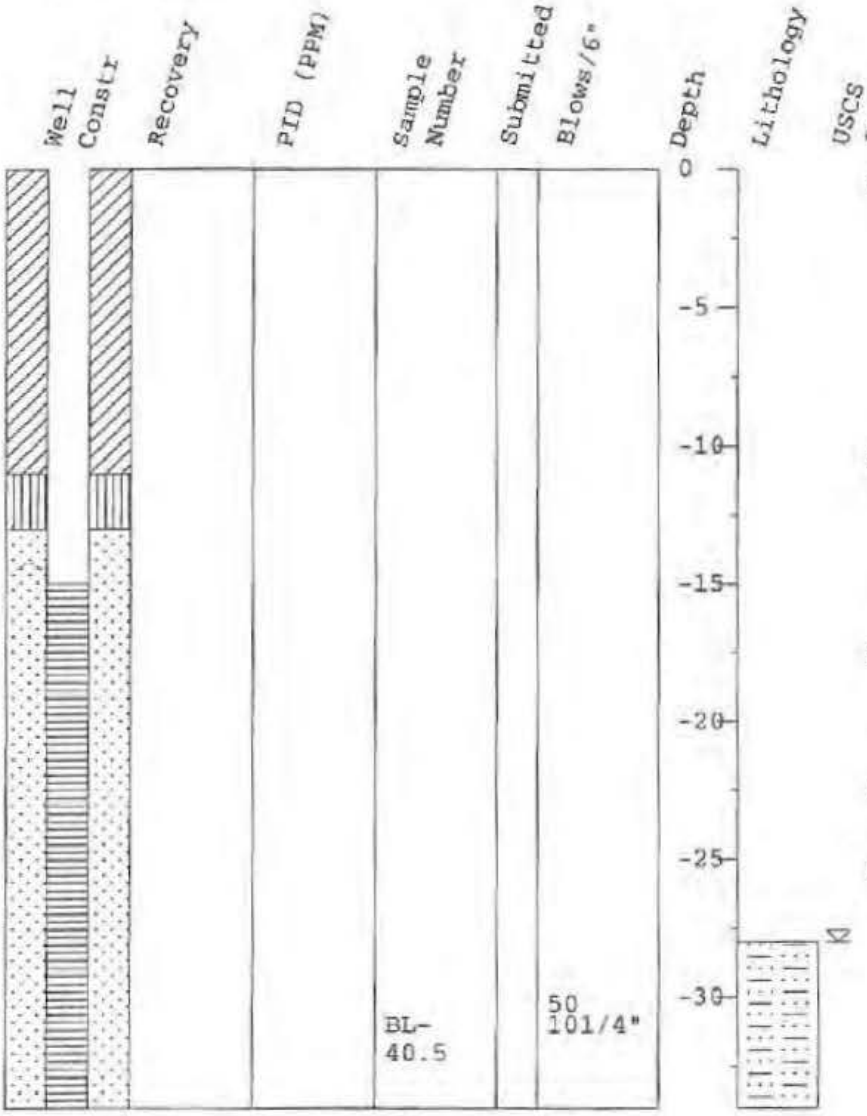
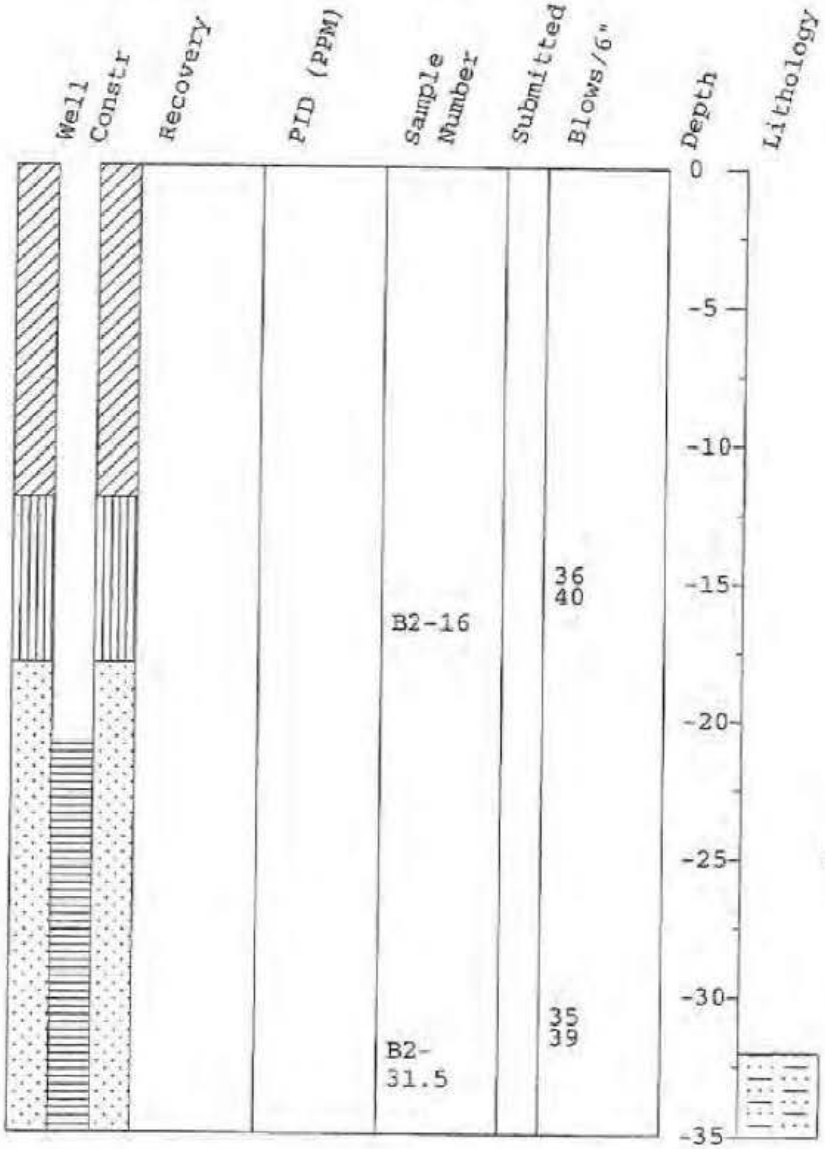
# MONITORING WELL LOCATIONS

POINT REYES AFFORDABLE HOUSING PROJECT
POINT REYES STATION, CALIFORNIA

FIGURE 2

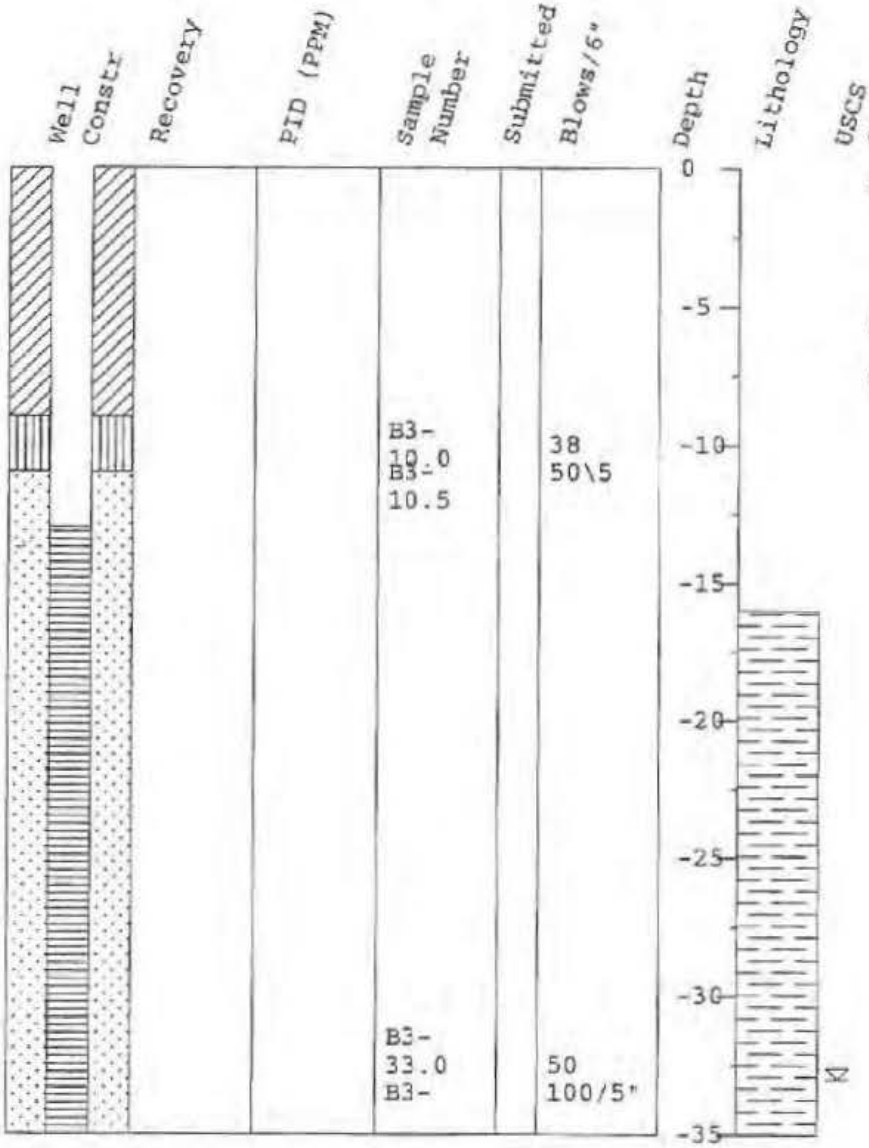



| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name : EAH- Pt. Reyes<br>Job No 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 1**<br>Pt. Reyes Affordable Housing Proj.<br>Point Reyes, California | FIGURE<br>A-1 |

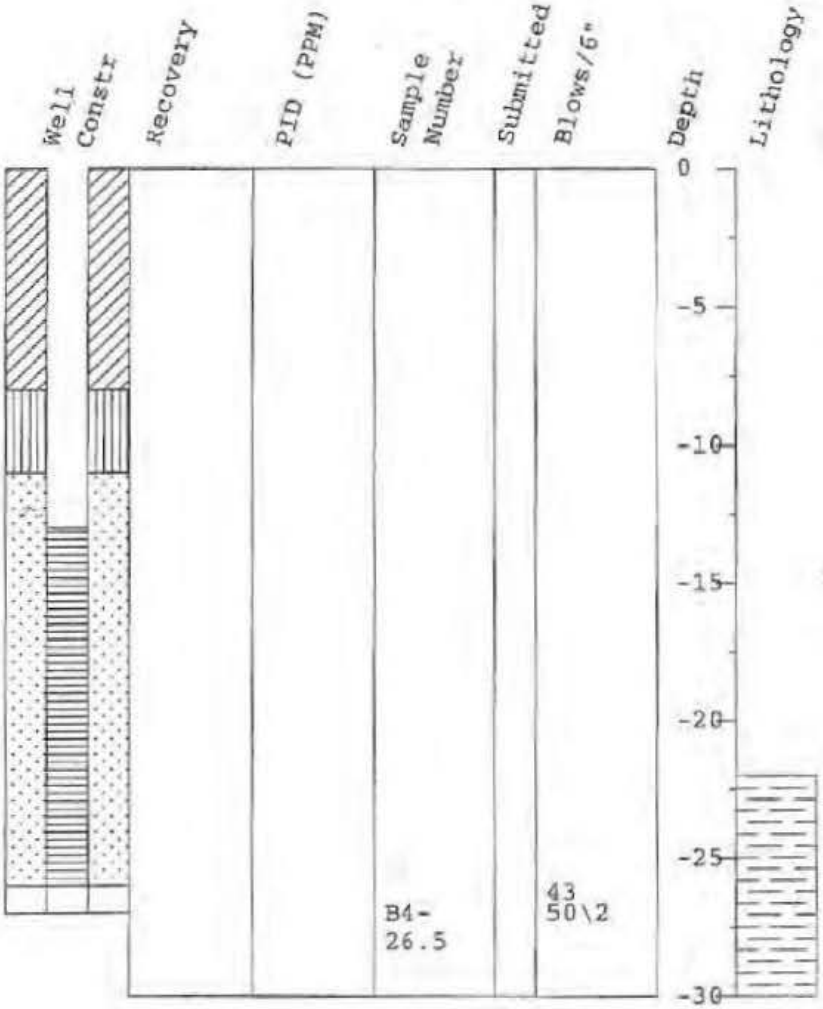



| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | GRAVELLY LOAM: dark brown, loose, damp; change in color to brown at 1.5 -2.0 feet |
| SM | CLAY LOAM w/GRAVEL: reddish-brown, damp, slightly sticky |
| SM | GRAVEL LOAM: light brown, medium dense, damp; some blue-grey rock |
| GP | SANDY GRAVEL: brown, dense |
| CL | SANDY CLAY: brown, damp, medium stiff, slightly plastic |
| SC | CLAYEY SAND: dark to medium brown, dense, moist; increase in moisture @ 25-27 feet |
| GW | SANDY GRAVEL: yellow-brown(some orange-brown), wet, dense |
| | SILTSTONE: dark gray |

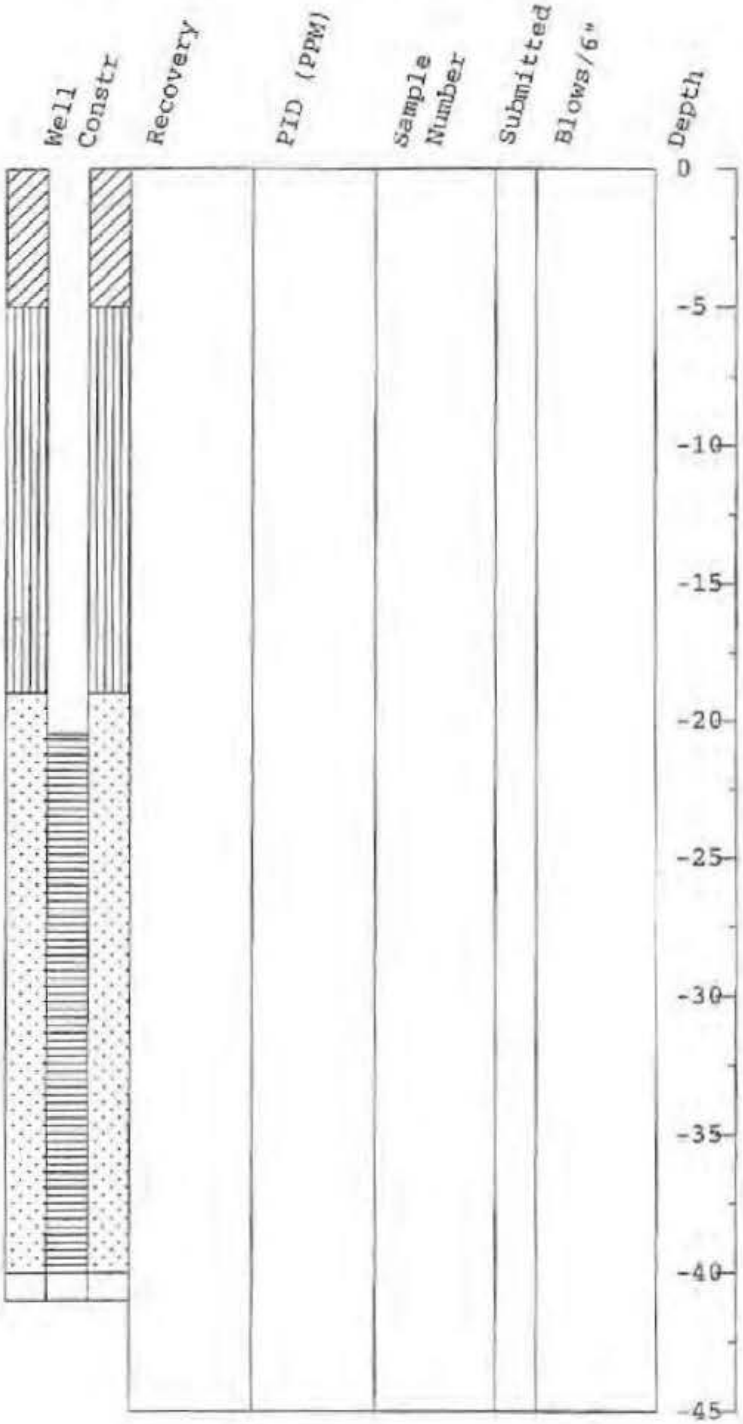
| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name : EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 2**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-2 |




| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 3**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-3 |

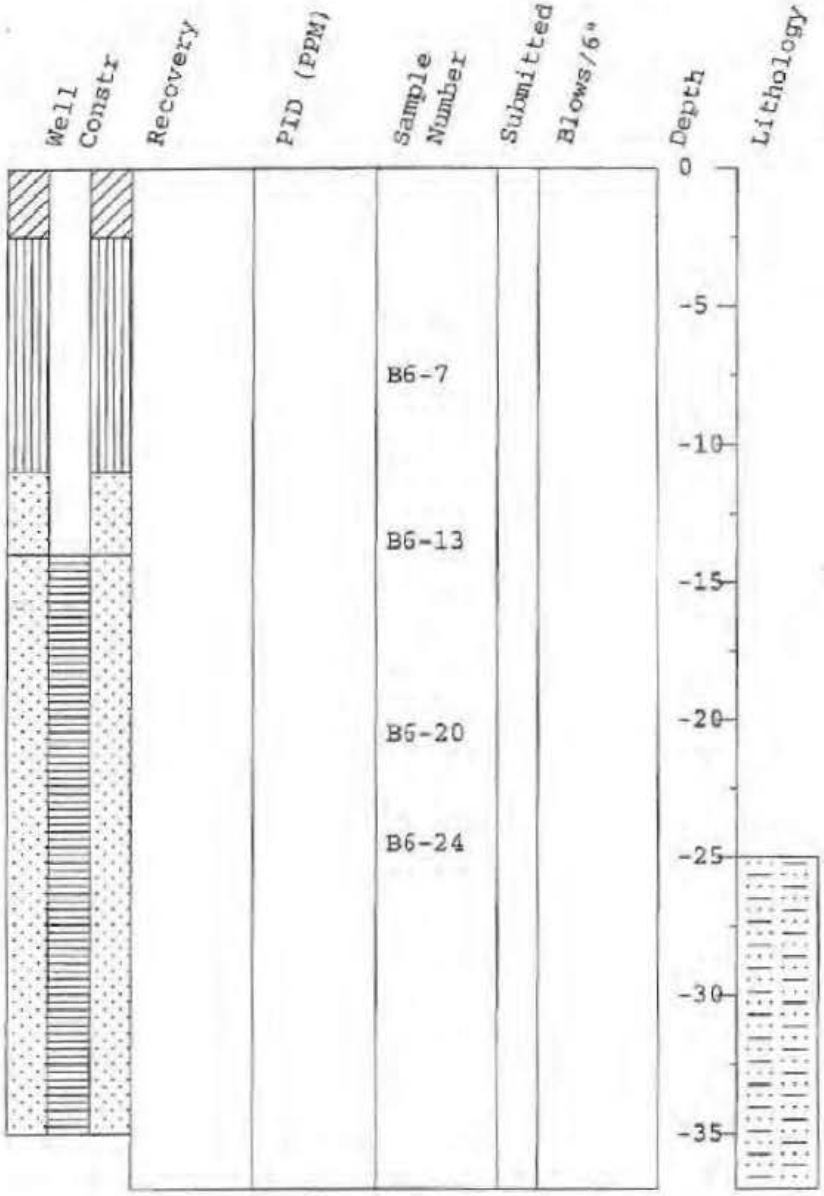



| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70350 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 4**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-4 |



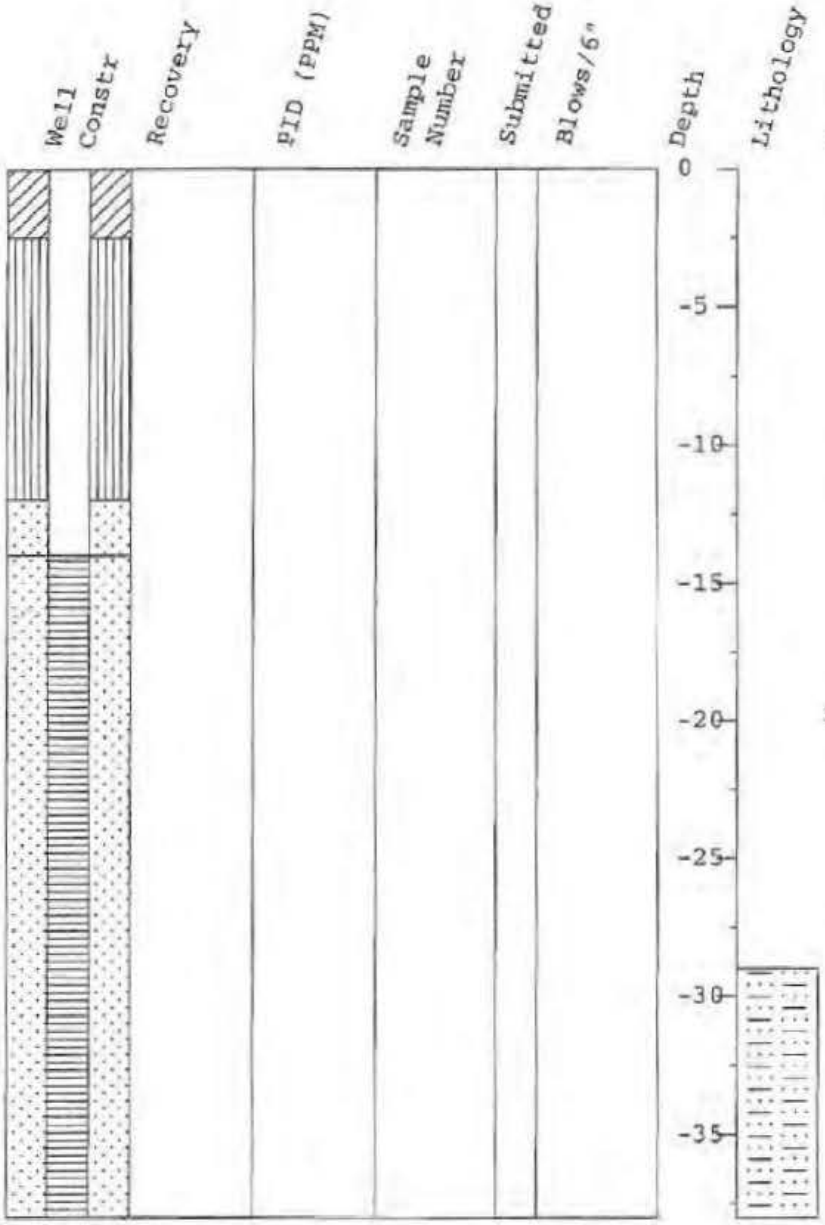

| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | SANDY LOAM: reddish-brown, loose, |
| SM | SILTY SANDY LOAM: brown, medium dense(soft), very moist |
| SM | SILTY SANDY LOAM to CLAYEY SILTY SAND: brown to dark brown, medium dense, very moist to wet groundwater @ 9-10 feet |
| SC | CLAYEY SAND: dark brown to dark grey, wet, sticky, very soft(flowing); interbeds of sand and clayey sand with depth, becomes denser at 18 to 19.5 feet. |
| SC | |
| CL | SANDY CLAY: grey, very moist, sticky and plastic, relativelt soft-firms up with depth |
| SC | CLAYEY SAND: dark grey-brown, very moist to wet |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 5**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-5 |



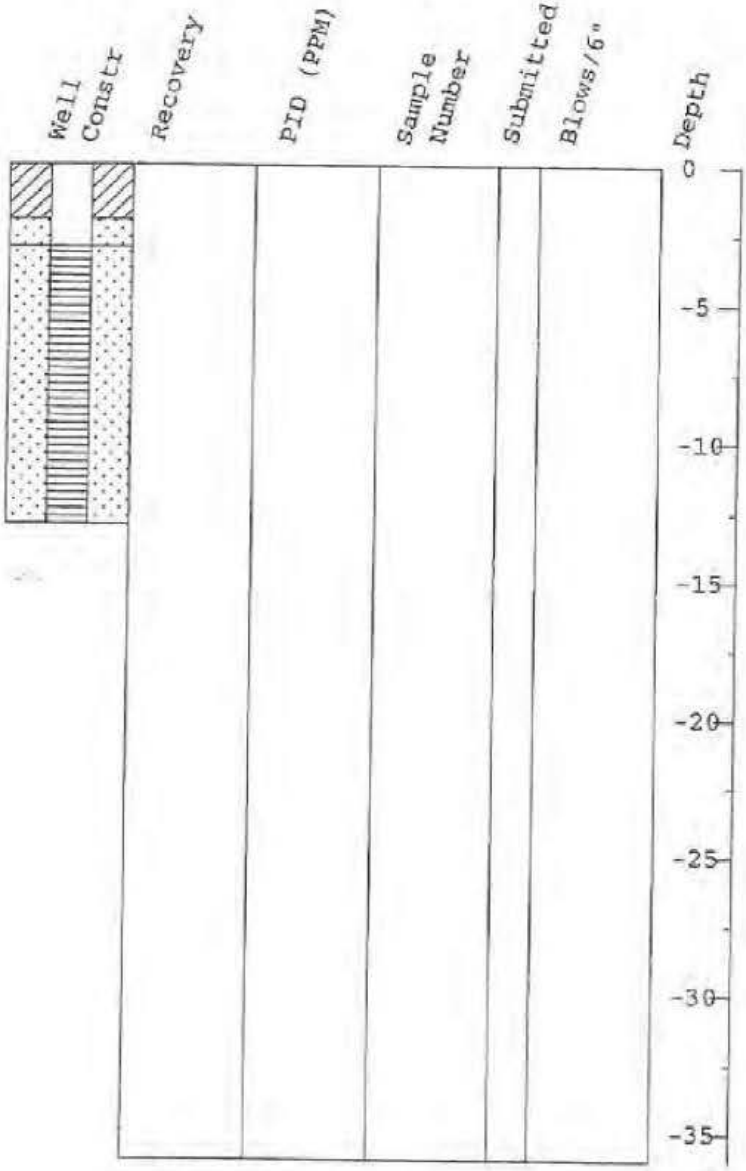

| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SC | SANDY CLAY LOAM: reddish-grey brown, loose, damp; more dense with depth |
| CL | CLAY LOAM: reddish-brown, medium dense, damp |
| SP | SAND TO LOAMY SAND: orange-yellow, loose, damp;becomes clayey with |
| SM | GRAVELLY SANDY LOAM: light brown, loose, damp; increaseing fines with depth; some gravel smooth and rounded, some angular |
| CL | SANDY CLAY: dark brown, medium |
| SP | GRAVELLY SAND: grey, very fine, damp, medium dense |
| | SILTSTONE: grey, very hard |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No: 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 6**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-6 |




| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | SANDY LOAM: brown, loose, damp |
| SC | SANDY CLAY LOAM: light brown, damp; increase in clay content to almost sandy clay with depth |
| SC | CLAY LOAM: orange brown, loose to medium dense, damp; has 4-6 inch sand lenses |
| SP | LOAMY SAND: grey-brown, loose, damp; some gravel with depth |
| SC | SANDY CLAY LOAM: grey brown, damp |
| SM | SANDY LOAM: grey brown, loose, damp |
| GP | GRAVELLY SAND: grey-brown, very dense, wet; interbeds of sand and gravelly san, some fractured siltstone with depth |
| | SILTSTONE: grey, hard |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 7**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-7 |




| USCS Symbol | Soil Description / Field Notes |
|---|---|
| SM | SANDY LOAM: light reddish-brown, loose, damp |
| SC | SANDY CLAY LOAM: dark reddish-brown, moist, soft |
| CL | SANDY CLAY: brown, soft, low plasticity, moist to wet |
| SM | SILTY SAND: grey, very loose, wet; becomes flowing sands |
| SC | SANDY CLAY LOAM: grey brown, damp |
| | SANDY LOAM: grey brown, loose, damp; denser with depth-21-22 feet |
| SP | GRAVELLY SAND: grey, interspersed with silty sands, grey wet, sticky |
| GP | SANDY GRAVEL: grey-brown, larger pieces of fractured bedrock at 35-36 feet |

| | | | |
|---|---|---|---|
| Date: 11-15-2000<br>Job Name: EAH- Pt. Reyes<br>Job No. 99190 | QUESTA Civil Environmental & Water Resources<br>P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807 | **Log of Monitoring Well 8**<br>**Pt. Reyes Affordable Housing Proj.**<br>Point Reyes, California | FIGURE<br>A-8 |

# Onsite Wastewater Feasibility Evaluation
# U.S. Coast Guard Housing Site
# Point Reyes Station

*Prepared for:*

***County of Marin***
***Community Development Agency***

*Project #1500193*

*Prepared by:*

***Questa Engineering Corporation***
*1220 Brickyard Cove Road, Suite 206*
*P. O. Box 70356*
*Point Richmond, California 94807*
*(510) 236-6114*

*December 15, 2016*

*Norman N. Hantzsche, PE*






| | |
|---|---|
| DATE | 12/5/2016 |
| PROJECT | USCG HOUSING |
| PROJECT NO. | 1500193 |
| DRAWN | DD |
| APPROVED | NH |

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**Soil Profile Test Locations**

**FIGURE 3**

| Table 1. US Coast Guard Housing Site - Soil Profile Summary | | | | |
|---|---|---|---|---|
| **Profile #** | **Topsoil Type & Depth** | **Subsoil Type & Depth** | **Limiting Layer Type & Depth** | **Estimated GW** |
| **Building Area** | | | | |
| T-1 | 0-9" Gravelly topsoil | 9-58": Very gravelly clay loams | 58"+ Very weathered sandstone, textures to fine sandy loam | > 58" |
| T-2 | 0-20" Very gravelly silty clay loam | 20-72" Very gravelly, coarse sandy clay loam | 72-84" Dense clay<br>84"+ Hard sandstone | Perches at 72" |
| T-3 | 0-12" Very gravelly fill, loam | 12-36" Silty clay loam, gravelly<br>36-96" Very gravelly clay loam | None to 96" | > 96" |
| **Upper Leachfield** | | | | |
| T-4 | 0-20" Silt loam | 20-84"+ Very gravelly, with loam to light clay loam matrix | None to 84" | > 84" |
| T-5 | 0-23" Silt loam | 23-33" Gravelly,light to medium clay<br>33-52" Sandy loam<br>52-84" Very gravelly, sandy loam to clay loam | None to 84" | > 84" |
| T-6 | 0-20" Silt loam | 20-40" Very fine compacted gravels<br>40-53" Weathered sandstone | 53"+ Stiff clay | Perches at 53" |
| T-7 | 0-22" Silt loam | 22-57" Very gravelly, sandy loam to clay loam<br>57-67" Gravelly loams to sandy clay loams | 67"+ Stiff clay | > 58" |
| **Lower Leachfield** | | | | |
| T-8 | 0-27" Silt loam | 27-96" Gravelly, sandy clay loam | None to 96" | > 96" |
| T-9 | 0-24" Silt loam | 24-96" Gravelly, fine sandy clay loam | None to 96" | > 96" |
| T-17 | 0-29" Light silty clay loam w/gravels | 29-50" Fine sandy loam<br>50-65" Silty clay loam<br>65-96" Very gravelly, sandy loam | None to 96" | > 96" |
| **Upper Hillside Dripfield Area** | | | | |
| T-10 | 0-17" Light silty clay loam w/gravels | 17-21" Clay loam transition | 21-48" Dense clay | Perches at 21" |
| T-11 | 0-7" Light silty clay loam w/gravels | 7- 36" Heavy sandy clay loam | 7-36" Heavy sandy clay loam | Perches at 36" |
| T-12 | 0-9" Light silty clay loam w/gravels | 9-33" Medium sand | 33-96" Weathered sandstone, light sandy clay matrix | Perches at 33" |
| T-13 | 0-29" Light silty clay loam w/gravels | 29-60"+ Medium dense sandy clay loam | 29"+ Medium dense sandy clay loam | Perches at 29" |
| T-14 | 0-25" Light silty clay loam w/gravels | 25-60" Very gravelly, medium sandy clay loam | 60-96" Light gray brown, dense fine sandy clay | Perches at 60"<br>Mottling at 54" |
| T-15 | 0-25" Light silty clay loam w/gravels | 25-75" Very gravelly, light sandy clay loam | 75-96" Dense fine sandy clay | Perches at 75" |
| T-16 | 0-21" Light silty clay loam w/gravels | 21-37" Very gravelly sandy loam | 37-51" Gravelly medium dense clay | Perches at 37" |

United States Coast Guard
U.S. Department of Homeland Security

TETRA TECH



FINAL

# Environmental Compliance Due Diligence Activities Report

**U.S. Coast Guard Point Reyes Station, California Housing Units**

USCG Communications Area Master Station Pacific Housing Facility
Point Reyes Station, California 94956
Contract No. GS-00P-14-CY-A-0002/Award No. GS-P-00-14-CY-5028

November 2016

The locations of the soil borings were consistent with the work plan authorized by GSA. During investigation activities on October 17, 2016, SB-6 was advanced to a depth of 40 feet bgs; however, soil boring SB-5 encountered refusal at a depth of 28 feet bgs. A temporary 1" PVC monitoring well with 10 feet of 0.010-inch slotted screen and the remaining interval PVC riser was installed in soil boring SB-6 on October 17, 2016 and left in place for approximately 4 hours in an attempt to obtain a groundwater sample. Based on the lack of groundwater encountered in SB-6 and because SB-5 did not reach the proposed depth of 40 feet bgs, with GSA approval, a larger hollow stem auger rig was used to advance SB-5 to a depth of 60 feet bgs on October 19, 2016. A temporary 1" PVC monitoring well with 10 feet of 0.010-inch slotted screen and the remaining interval PVC riser was installed in soil boring SB-5 on October 19, 2016 and left in place for approximately 3 hours in an attempt to obtain a groundwater sample. A Solinest water level indicator was used to evaluate the water level in the temporary monitoring wells; however, groundwater was not observed in either well. Boring locations were backfilled with hydrated bentonite pellets once sampling activities had concluded. The boreholes were then finished with concrete to match pre-existing conditions.

Soil lithologies encountered at the boring locations consisted of dark brown to light brown and gray, sandy silts and clays with 0 to 30 percent gravel from the surface soils to approximately 60 feet bgs. Elevated PID readings of total VOC vapors were not encountered during the completion of either of the soil borings. Logs of the soil borings are included in **Attachment O**. Soil and groundwater sampling photographs are included in **Attachment P**.

## 9.4 GROUNDWATER INVESTIGATION CONCLUSIONS

Based on the field activities conducted on October 17 and 19, 2016, no groundwater was encountered at the Site from the two temporary monitoring wells installed to a depth of 40 feet and 60 feet bgs. Although groundwater was collected during initial Phase II ESA activities conducted on March 15, 2016 with identified metals exceedances, Tetra Tech considers the groundwater to be likely from a perched layer exhausted during the first groundwater sampling event. Tetra Tech understands the Site is serviced by a municipal water system and no potable water wells are present on the Site. Based on the depth of groundwater at the Site at a depth greater than 60 feet bgs and a lack of potential exposure to groundwater by on-site personnel based on groundwater depth and presence of a municipal water system, Tetra Tech does not consider the initial exceedance of metals in groundwater to be a concern. In addition, the soil samples collected during the initial sampling event completed on March 15, 2016 yielded results indicating that analyzed constituents of concern were below applicable regulatory levels. Therefore, Tetra Tech does not consider the historical use of the in-ground hydraulic lift and the automotive and equipment repair activities formerly performed at the Site to be a REC.

# 9.0 GROUNDWATER SAMPLING ACTIVITIES OCTOBER 2016

## 9.1 INTRODUCTION

Based on the exceedance of metals in groundwater above regulatory screening levels in the March 15, 2016 soil and groundwater sampling event completed by Tetra Tech, GSA requested an additional round of groundwater sampling completed at the Site. The additional evaluation of the potential for environmental impacts at the Site was undertaken at the request of GSA in accordance with the ASTM International E1903-11 (2011) Standard Guide for Environmental Site Assessments: Phase II ESA Process. The objective of the second round of groundwater sampling associated with this investigation was to further evaluate if the subsurface of the Site has been adversely affected by the use of the suspected, former in-ground hydraulic lift and from maintenance activities at the Site. Specific terms and conditions were detailed in the Tetra Tech Proposal for Additional Phase II Site Investigation dated August 15, 2016, which was authorized by GSA.

Based on the minimal amount of groundwater obtained in the temporary groundwater well advanced during the March 15, 2016 activities and the refusal encountered using a direct-push drill rig, GSA requested the use of a hollow-stem auger rig to ensure that a depth of 40 feet bgs was obtained during the second round of groundwater sampling activities. The proposed depth potentially allowed further advancement of temporary monitoring wells into the aquifer, which would allow greater groundwater sample recovery. The scope of the second Site investigation was to complete two soil borings, SB-5 and SB-6, adjacent to the maintenance building of the Site to a depth of 40 feet bgs for the collection of groundwater samples. In accordance with the approved work plan, groundwater at the Site was analyzed for the following parameters:

- VOC per USEPA Method 8260B;
- SVOC per USEPA Method 8270C;
- CAM-17 per USEPA Method 6010;
- PCB per EPA Method 8082;
- TPH-ERO California LUFT per USEPA Method 8015;
- TPH-GRO California LUFT per USEPA Method 8015; and
- TPH-DRO California LUFT per USEPA Method 8015.

As discussed in Section 8.0, groundwater concentrations of several CAM 17 Metals including arsenic, barium, beryllium, chromium, cobalt, copper, lead, mercury, nickel, thallium, vanadium, and zinc were detected at concentrations above laboratory MDLs in the groundwater sample collected from soil boring SB-4 on March 15, 2016. Each of the detections were above the associated SFRWQCB ESL and the associated USEPA Region 9 RSLs, with the exception of mercury and zinc.

Phase II ESA assessment activities were completed in conformance with the work plan submitted to GSA on August 15, 2016. There were no significant deviations from the work plan with the

exception that groundwater was not encountered during the advancement of soil borings during the second hollow-stem auger drilling event; therefore, no laboratory samples were collected or analyzed for Site groundwater. In addition, SB-5 was advanced to a depth of 60 feet bgs rather than the planned 40 feet bgs. Prior to the mobilization to the Site, Tetra Tech prepared two Monitoring Well Drilling Permits for review and approval by Marin County EHS. The permits were accepted prior to the initiation of field activities. The Monitoring Well Drilling Permits are presented in **Attachment M**.

The findings and conclusions of this report are not scientific certainties, but rather, probabilities based on professional judgment derived from the data gathered during the course of this Phase II ESA. Tetra Tech is not able to verify that the Site or adjoining land does not contain hazardous substances, petroleum products, or other latent conditions beyond that detected or observed during this Phase II ESA assessment. The possibility exists that contaminants detected in soil and groundwater have migrated through soil or groundwater. However, identifying the origin of the contaminants is not within the scope of this project. In addition, the ability to accurately assess the environmental risks associated with transport in these media is beyond the scope of this assessment. The opinions expressed by Tetra Tech with reference to the Site only pertain to conditions that existed at the Site during the time that the Phase II ESA was conducted. No guarantees or warranties are either expressed or implied.

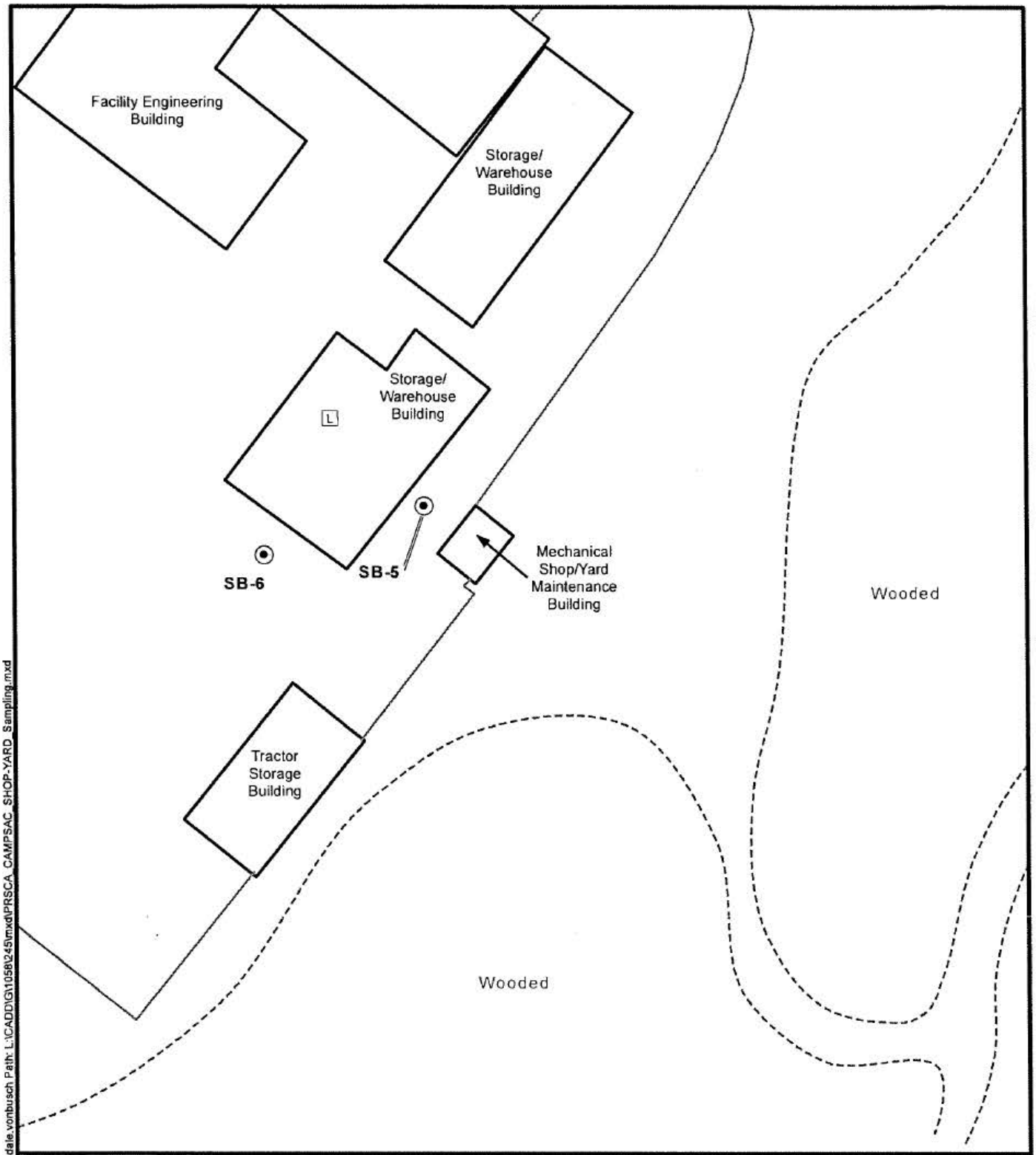
## 9.2 UTILITY LOCATION

Prior to conducting the subsurface assessment, Tetra Tech contacted 811 Dig Alert (Call Before You Dig) utility locator service to request identification of buried utilities on and around the Site. Utility markings were observed to be present prior to the advancement of the soil borings at the Site. In addition, Tetra Tech contracted Ground Penetrating Radar Systems (GPRS) to assist in the location of soil borings at the Site. No utilities were encountered during the investigation.

## 9.3 TEMPORARY MONITORING WELL ADVANCEMENT ACTIVITIES

On October 17 and 19, 2016, two (2) soil borings (SB-5 and SB-6) were advanced at the Site (**Attachment N**). The soil borings were advanced by Penecore Drilling, Inc., using a CME 75 hollow-stem auger soil probing rig to obtain the depth of 40 feet bgs. The locations of the soil borings are described below:

- SB-5: Downgradient of the suspected, former in-ground hydraulic lift, in proximity to the southeastern side of the mechanical shop and yard maintenance building.
- SB-6: Downgradient of the suspected, former in-ground hydraulic lift, in proximity to the southwestern side of the mechanical shop and yard maintenance building.




**Legend**

- Approximate Property Boundary
- L — Supsected Former In-Ground Hydraulic Lift
- Boring Location

N W E S

0 15 30

Feet

SOURCE: MODIFIED FROM BING IMAGERY, 2010-2012.

**FIGURE 2**
SAMPLE LOCATION MAP - OCTOBER 2016

US COAST GUARD HOUSING UNITS
POINT REYES STATION
MECHANICAL SHOP/YARD MAINTENANCE BUILDING
POINT REYES, CALIFORNIA 94956

United States Coast Guard
U.S. Department of Homeland Security

TETRA TECH

Date Saved: 10/13/2015 7:32:40 PM User: dale.vonbusch Path: L:\CADD\GI\1056\245\mxd\PRSCA_CAMPSAC_SHOP-YARD_Sampling.mxd

# ATTACHMENT O:
# SOIL BORING LOGS – OCTOBER 2016

| TETRA TECH | Project: GSA Point Reyes | BORING ID |
|---|---|---|
| | Project Number: 103G3995011 | SB-6 |
| | Site: U.S. Coast Guard Point Reyes Station, California Housing Units | |
| | Address: Point Reyes Station, California 94956 | |

| | | | |
|---|---|---|---|
| Start Date: 10/17/16 | Time: 10:45 | Drilling Co.: Penecore Drilling, Inc. | Driller: Jorge Ornelas, Norman Doherty |
| Completion Date: 10/17/16 | Time: 13:50 | Drilling Method: HSA | Bit Size: 8.0" |
| Geologist: Vladimir Prilepin, PG | | Drilling Equipment: Geoprobe CME85 | Core Barrel(s): 8.0" |
| Completion Depth (ft. bgs.): 40.0 | | Sampling Method: soil cuttings | Sampler Type: Dual Tube Sampling System; N/A |
| Groundwater Elev. (ft. bgs.): N/A | | Sample Hammer: N/A | Drop: N/A |

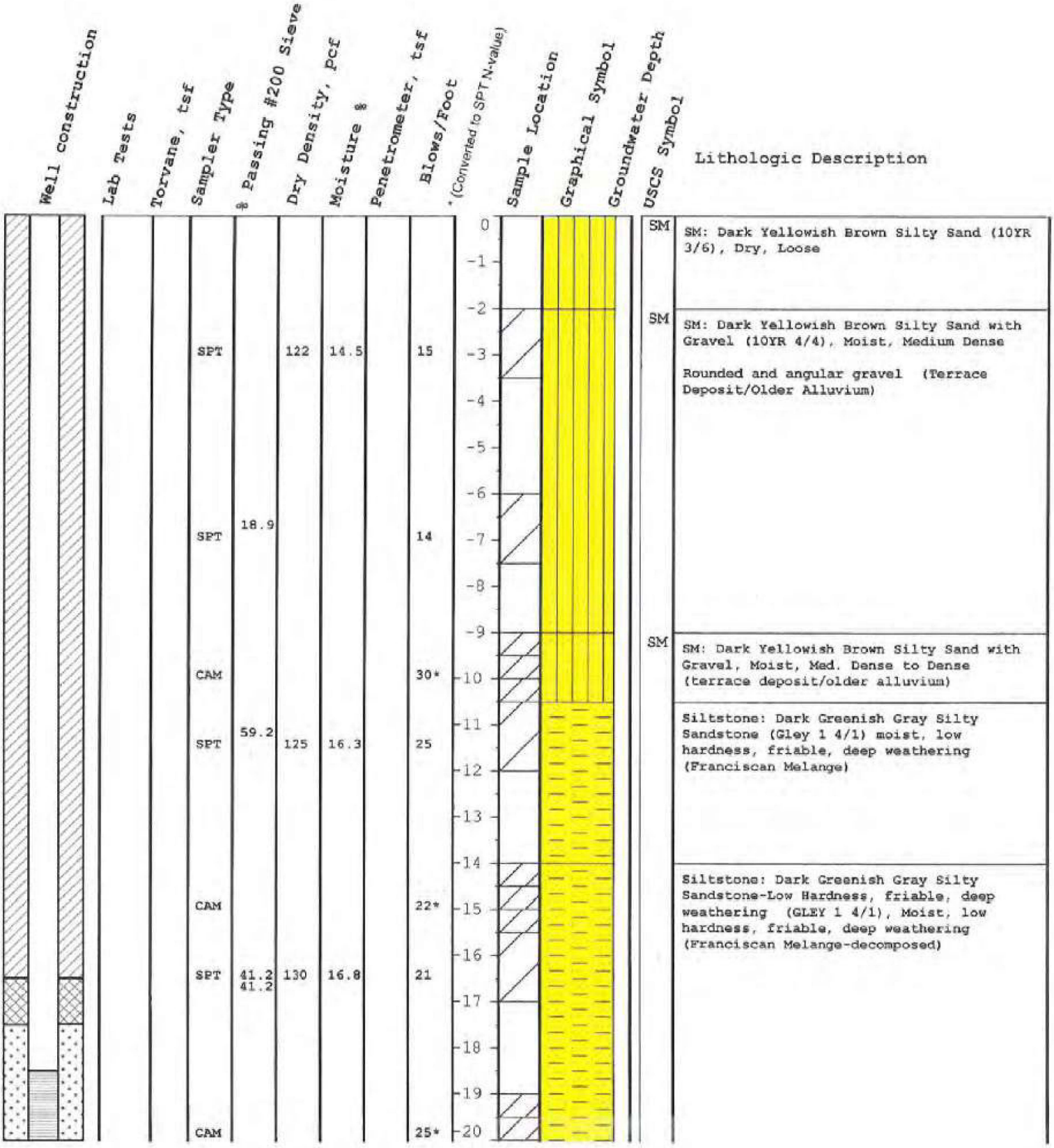
| Depth (feet bgs) | Sample Number | Blow Counts | Recovery (%) | PID Reading (ppm) | USCS Classification | SOIL DESCRIPTION | NOTES |
|---|---|---|---|---|---|---|---|
| 1 | | | 20% | 0.0 | | **Concrete 6", base rock, medium sand and gravel** | No groundwater encountered throughout the boring |
| 2 | | | | | SM | 1 - 10': **Silty Sand with Gravel**, yellowish brown, 15% silt, 60% very fine to fine sand, 10% gravel; dry, loose. A thin bed of brown clay between 4.5 and 5.0' bgs. | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | 40% | 0.0 | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | 80% | 0.0 | ML | **Clayey Silt,** dark gray to gray; 80% silt, 20% clay, medium dense; dry. | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | Clayey Silt. Color changes to strong brown at 15' bgs.<br>Clay content increases with depth. | |
| 15 | | | | | | | |
| 16 | | | 90% | 0.0 | ML | Becomes very dense. | |
| 17 | | | | | | | |
| 18 | | | | | | | |
| 19 | | | | | | | |
| 20 | | | | | | | |

| TETRA TECH | Project: GSA Point Reyes | | BORING ID |
|---|---|---|---|
| | Project Number: 103G3995011 | | SB-6 |
| | Site: U.S. Coast Guard Point Reyes Station, California Housing Units | | |
| | Address: Point Reyes Station, California 94956 | | |
| Start Date: 10/17/16 Time: 10:45 | Drilling Co.: Penecore Drilling, Inc. | Driller: Jorge Ornelas, Norman Doherty | |
| Completion Date: 10/17/16 Time: 13:50 | Drilling Method: HSA | Bit Size: 8.0" | |
| Geologist: Vladimir Prilepin, PG | Drilling Equipment: Geoprobe CME85 | Core Barrel(s): 8.0" | |
| Completion Depth (ft. bgs.): 40.0 | Sampling Method: soil cuttings | Sampler Type: Dual Tube Sampling System; N/A | |
| Groundwater Elev. (ft. bgs.): N/A | Sample Hammer: N/A | Drop: N/A | |

| Depth (feet bgs) | Sample Number | Blow Counts | Recovery (%) | PID Reading (ppm) | USCS Classification | SOIL DESCRIPTION | NOTES |
|---|---|---|---|---|---|---|---|
| 21 | | | 100% | 0.0 | CL | **Silty Clay**, mottled: abundant redox features of dark gray to rust color, medium plasticity, | |
| 22 | | | | | | | |
| 23 | | | | | | | |
| 24 | | | | | | | |
| 25 | | | | | | Becomes massive, dense, no plasticity at 25' bgs. | |
| 26 | | | | | | | |
| 27 | | | | | | **Clayey, Sandy Silt**. Some gravel, dark gray, hard, dry. | |
| 28 | | | | | | | |
| 29 | | | | | | | |
| 30 | | | | | | | |
| 31 | | | | | | | |
| 32 | | | | | | | |
| 33 | | | | | | | |
| 34 | | | | | | | |
| 35 | | | | | | | |
| 36 | | | | | | | |
| 37 | | | | | | | |
| 38 | | | | | | | |
| 39 | | | | | | | |
| 40 | | | | | | | End boring at 40' |

# Appendix B

## Monitoring Well Borehole Logs




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

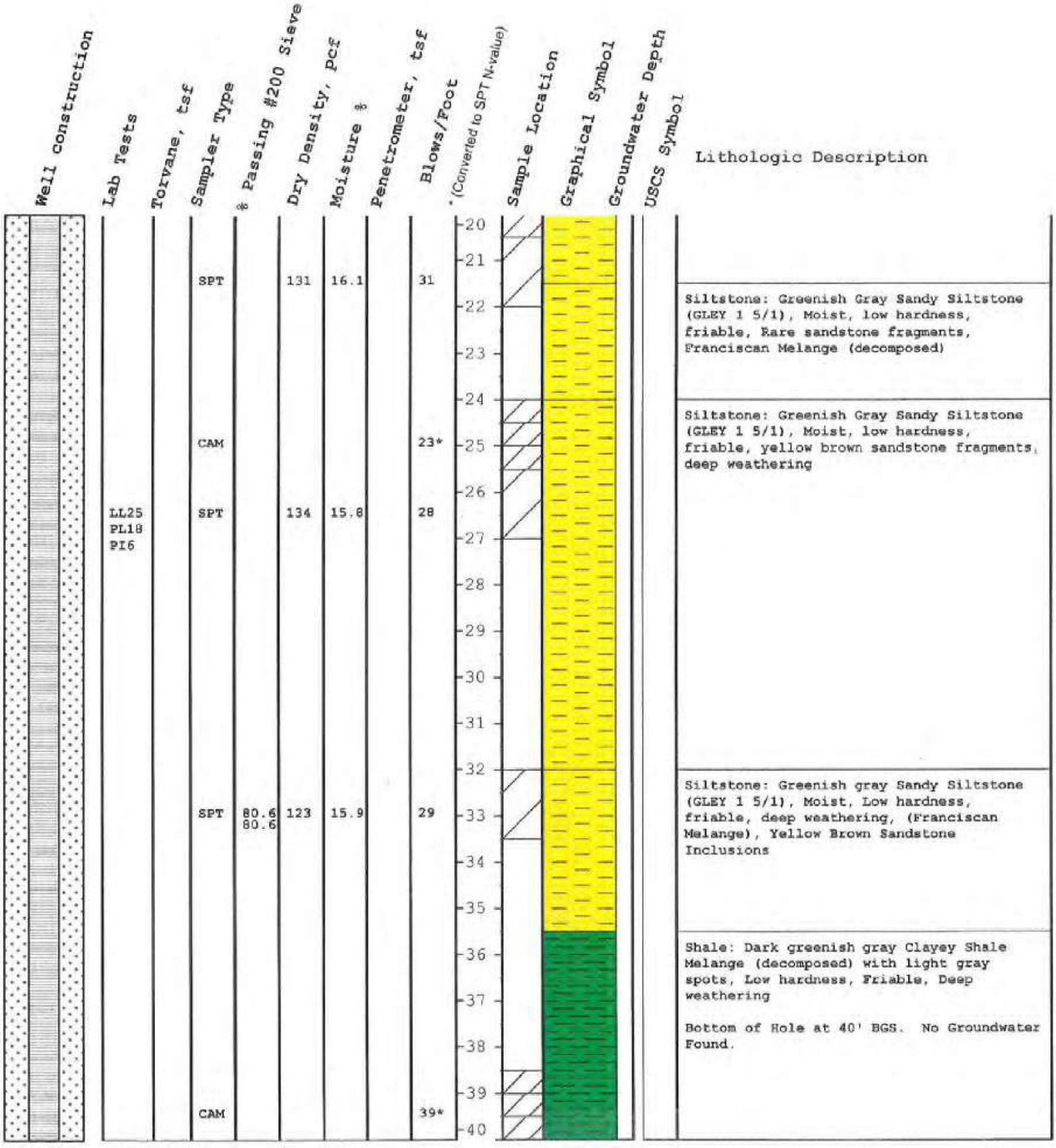
QUESTA ENGINEERING

# LOG OF BOREHOLE CG-1

**Coast Guard 2020**

**Point Reyes Station**

**Figure B-1**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

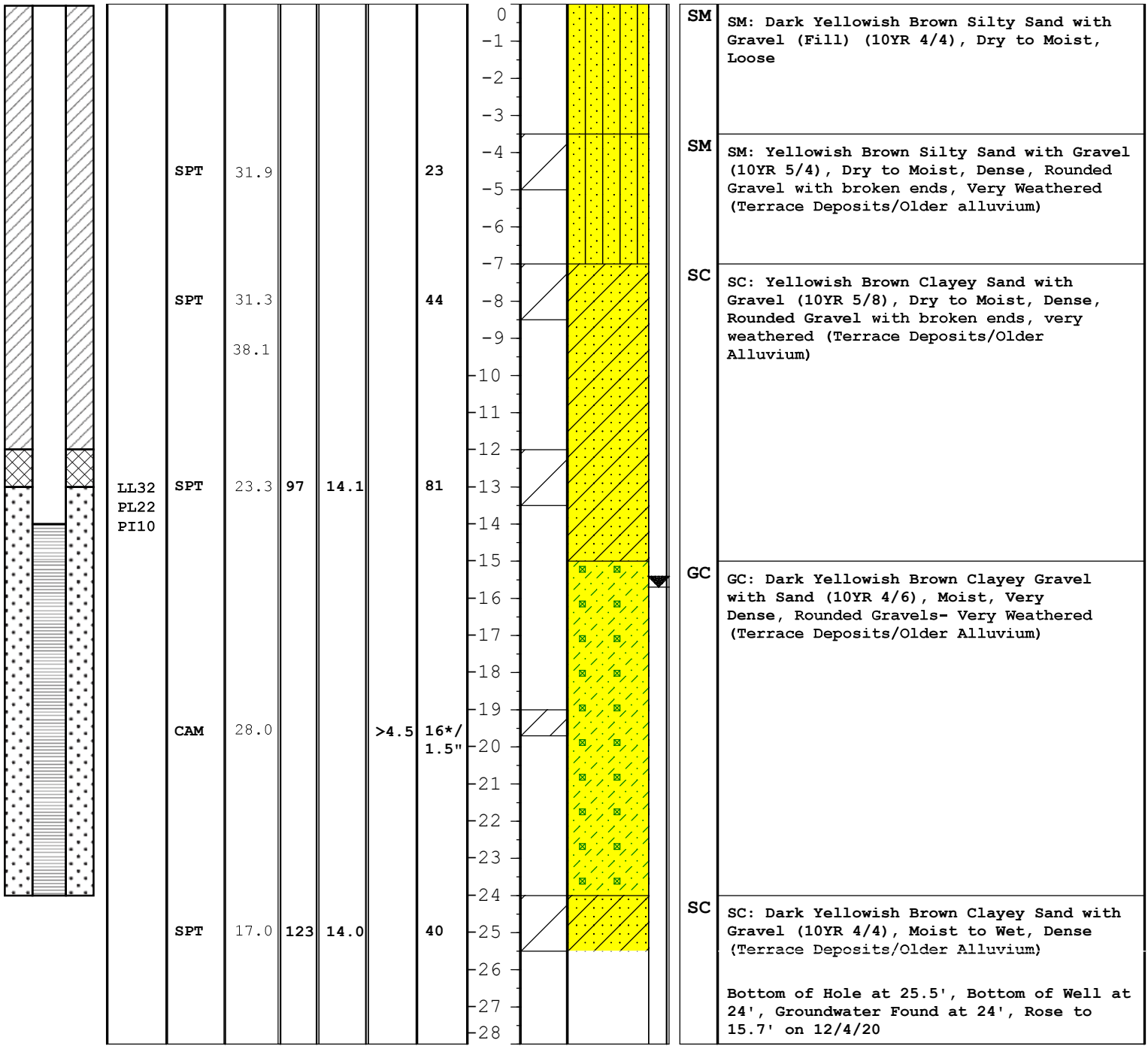
QUESTA ENGINEERING

# LOG OF BOREHOLE CG-1

**Coast Guard 2020**

**Point Reyes Station**

**Figure B-1**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

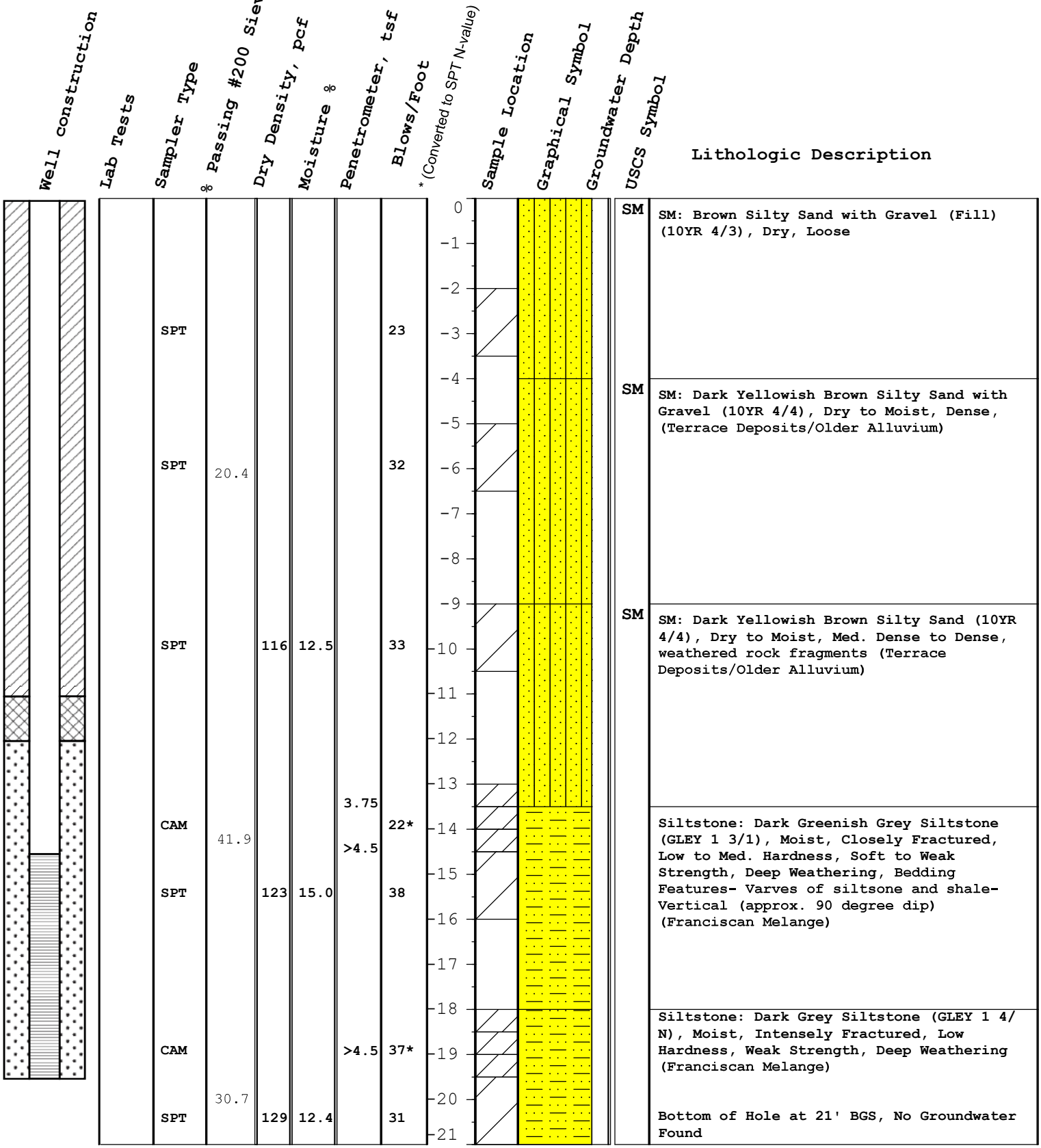
QUESTA ENGINEERING CORP.
Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-2

**Coast Guard 2020**

**Point Reyes Station**

**Figure B-2**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

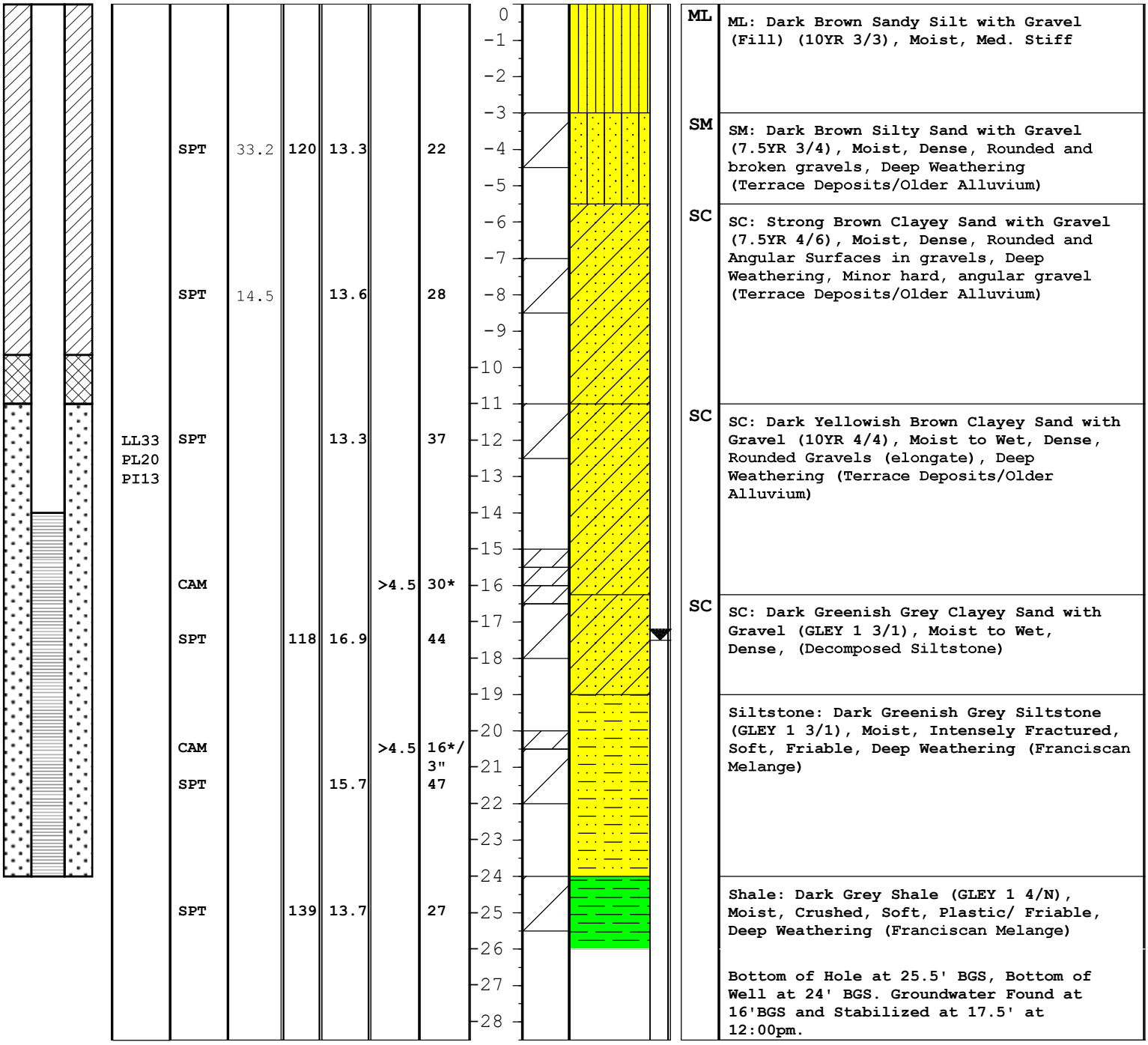
QUESTA ENGINEERING CORP
Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-3

**Coast Guard 2020**

**Point Reyes Station**

**Figure B-3**




Drilling Performed by Pearson Drilling Using a B-53 Drill Rig

QUESTA ENGINEERING CORP.
Civil Environmental & Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

# LOG OF BOREHOLE CG-4

**Coast Guard 2020**

**Point Reyes Station**

**Figure B-4**

# Appendix C

## Water Quality Laboratory Reports

BRELJE AND RACE LABORATORIES, INC.
Providing quality laboratory analysis since 1967

April 29, 2021

Sample Collected: 04/06/21
Sample Received: 04/06/21
Collected By : MW
Cc: e-mail

Questa Engineering
P.O. Box 70356
Point Richmond, CA. 94807
Attention: Tom Hawbaker

# United States Coast Guard
## Pt. Reyes

| **LOG NUMBER:** | **421-6609-11** |
|---|---|
| Sample Description: | CG – 1 |

**ANALYSIS**

| | |
|---|---|
| Total Dissolved Solids mg/L (Std. Mthds. 2540 C, 2011) | 660. |
| pH Std. units (Std. Mthds. 4500-$H^+$ B, 2011) | 7.5 |
| Total Alkalinity as $CaCO_3$ mg/L (Std. Mthds. 2320 B, 2011) | 220. |
| Specific Conductance µmhos/cm @ 25°C (Std. Mthds. 2510 B, 2011) | 1200. |
| Boron mg/L (EPA Mthd. 200.8) | 2.5 |
| Calculated Hardness as $CaCO_3$ mg/L (Std. Mthds. 2340 B, 2011) | 180. |
| Iron µg/L (EPA Mthd. 200.7) | 170. |
| Manganese µg/L (EPA Mthd. 200.8) | 130. |
| Calcium mg/L (EPA Mthd. 200.7) | 27. |
| Magnesium mg/L (EPA Mthd. 200.7) | 27. |
| Sodium mg/L (EPA Mthd. 200.7) | 180. |
| Sodium Absorption Ratio | 5.9 |

**BRELJE AND RACE LABORATORIES, INC.**

JAMIE LYNCH, LABORATORY DIRECTOR
JL:lja

BRELJE AND RACE LABORATORIES, INC.
Providing quality laboratory analysis since 1967

April 29, 2021

Sample Collected: 04/06/21
Sample Received: 04/06/21
Collected By : MW
Cc: e-mail

Questa Engineering
P.O. Box 70356
Point Richmond, CA. 94807
Attention: Tom Hawbaker

# United States Coast Guard
## Pt. Reyes

| LOG NUMBER: | 421-6612-4 |
|---|---|
| Sample Description: | CG – 2 |

**ANALYSIS**

| | |
|---|---|
| Total Dissolved Solids mg/L (Std. Mthds. 2540 C, 2011) | 340. |
| pH Std. units (Std. Mthds. 4500-$H^+$ B, 2011) | 7.0 |
| Total Alkalinity as $CaCO_3$ mg/L (Std. Mthds. 2320 B, 2011) | 120. |
| Specific Conductance µmhos/cm @ 25°C (Std. Mthds. 2510 B, 2011) | 560. |
| Boron mg/L (EPA Mthd. 200.8) | 0.10 |
| Calculated Hardness as $CaCO_3$ mg/L (Std. Mthds. 2340 B, 2011) | 170. |
| Iron µg/L (EPA Mthd. 200.7) | 210. |
| Manganese µg/L (EPA Mthd. 200.8) | 43. |
| Calcium mg/L (EPA Mthd. 200.7) | 30. |
| Magnesium mg/L (EPA Mthd. 200.7) | 22. |
| Sodium mg/L (EPA Mthd. 200.7) | 55. |
| Sodium Absorption Ratio | 1.9 |

**BRELJE AND RACE LABORATORIES, INC.**

JAMIE LYNCH, LABORATORY DIRECTOR
JL:lja

BRELJE AND RACE LABORATORIES, INC.
Providing quality laboratory analysis since 1967

April 29, 2021

Sample Collected: 04/06/21
Sample Received: 04/06/21
Collected By : MW
Cc: e-mail

Questa Engineering
P.O. Box 70356
Point Richmond, CA. 94807
Attention: Tom Hawbaker

# United States Coast Guard
## Pt. Reyes

**LOG NUMBER:** **421-6615-7**
Sample Description: CG – 3

**ANALYSIS**

| | |
|---|---|
| Total Dissolved Solids mg/L (Std. Mthds. 2540 C, 2011) | 940. |
| pH Std. units (Std. Mthds. 4500-$H^+$ B, 2011) | 7.3 |
| Total Alkalinity as $CaCO_3$ mg/L (Std. Mthds. 2320 B, 2011) | 170. |
| Specific Conductance µmhos/cm @ 25°C (Std. Mthds. 2510 B, 2011) | 1500. |
| Boron mg/L (EPA Mthd. 200.8) | 0.55 |
| Calculated Hardness as $CaCO_3$ mg/L (Std. Mthds. 2340 B, 2011) | 490. |
| Iron µg/L (EPA Mthd. 200.7) | 40,000. |
| Manganese µg/L (EPA Mthd. 200.8) | 700. |
| Calcium mg/L (EPA Mthd. 200.7) | 86. |
| Magnesium mg/L (EPA Mthd. 200.7) | 68. |
| Sodium mg/L (EPA Mthd. 200.7) | 140. |
| Sodium Absorption Ratio | 2.7 |

**BRELJE AND RACE LABORATORIES, INC.**

JAMIE LYNCH, LABORATORY DIRECTOR
JL:lja

BRELJE AND RACE LABORATORIES, INC.
Providing quality laboratory analysis since 1967

April 29, 2021

Sample Collected: 04/06/21
Sample Received: 04/06/21
Collected By : MW
Cc: e-mail

Questa Engineering
P.O. Box 70356
Point Richmond, CA. 94807
Attention: Tom Hawbaker

# United States Coast Guard
## Pt. Reyes

| **LOG NUMBER:** | **421-6618-20** |
|---|---|
| Sample Description: | CG – 4 |

**ANALYSIS**

| | |
|---|---|
| Total Dissolved Solids mg/L (Std. Mthds. 2540 C, 2011) | 220. |
| pH Std. units (Std. Mthds. 4500-$H^+$ B, 2011) | 8.0 |
| Total Alkalinity as $CaCO_3$ mg/L (Std. Mthds. 2320 B, 2011) | 130. |
| Specific Conductance µmhos/cm @ 25°C (Std. Mthds. 2510 B, 2011) | 380. |
| Boron mg/L (EPA Mthd. 200.8) | 0.17 |
| Calculated Hardness as $CaCO_3$ mg/L (Std. Mthds. 2340 B, 2011) | 88. |
| Iron µg/L (EPA Mthd. 200.7) | 6400. |
| Manganese µg/L (EPA Mthd. 200.8) | 150. |
| Calcium mg/L (EPA Mthd. 200.7) | 17. |
| Magnesium mg/L (EPA Mthd. 200.7) | 11. |
| Sodium mg/L (EPA Mthd. 200.7) | 54. |
| Sodium Absorption Ratio | 2.5 |

**BRELJE AND RACE LABORATORIES, INC.**

JAMIE LYNCH, LABORATORY DIRECTOR
JL:lja

BRELJE AND RACE LABORATORIES, INC.
Providing quality laboratory analysis since 1967

April 22, 2021

Sample Collected: 04/06/21
Sample Received: 04/06/21
Collected By : MW
Cc: e-mail

Questa Engineering
P.O. Box 70356
Point Richmond, CA. 94807
Attention: Tom Hawbaker

# United States Coast Guard
## Pt. Reyes

| LOG NUMBER | Sample Description | Nitrate N mg/L |
|---|---|---|
| 421-6649 | CG 1 | <0.20 |
| 421-6650 | CG 2 | 1.1 |
| 421-6651 | CG 3 | <0.20 |
| 421-6652 | CG 4 | 0.31 |
| 421-6653 | MW 5 | 0.74 |
| 421-6654 | MW 7 | <0.20 |

(EPA Mthd. 352.1)

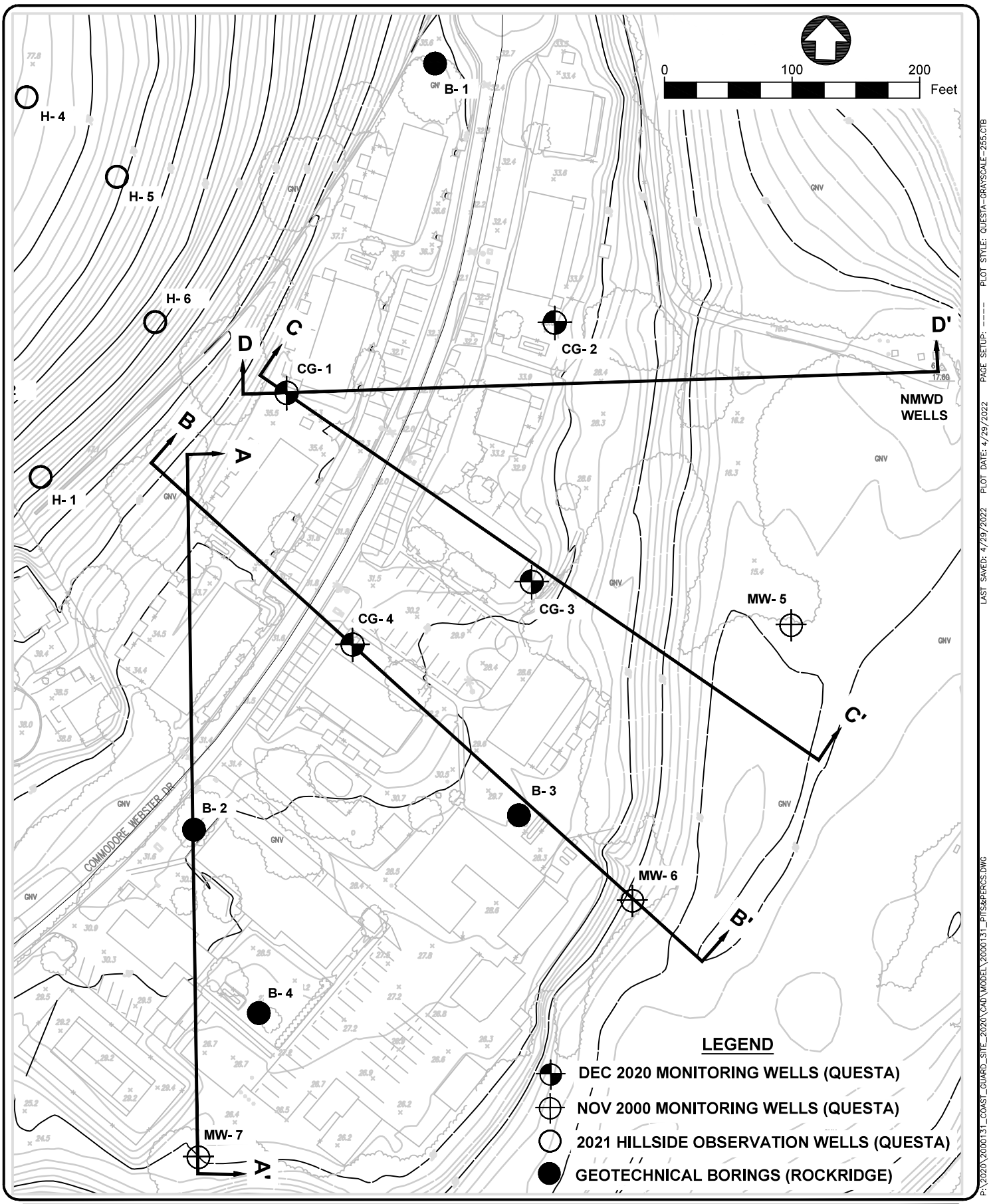
**BRELJE AND RACE LABORATORIES, INC.**

Jamie Lynch

JAMIE LYNCH, LABORATORY DIRECTOR
JL:lja

# Appendix D

## Hydrogeologic X-Sections




P:\2020\2000131_COAST_GUARD_SITE_2020\CAD\MODEL\2000131_PITS&PERCS.DWG LAST SAVED: 4/29/2022 PLOT DATE: 4/29/2022 PAGE SETUP: ----- PLOT STYLE: QUESTA-GRAYSCALE-255.CTB

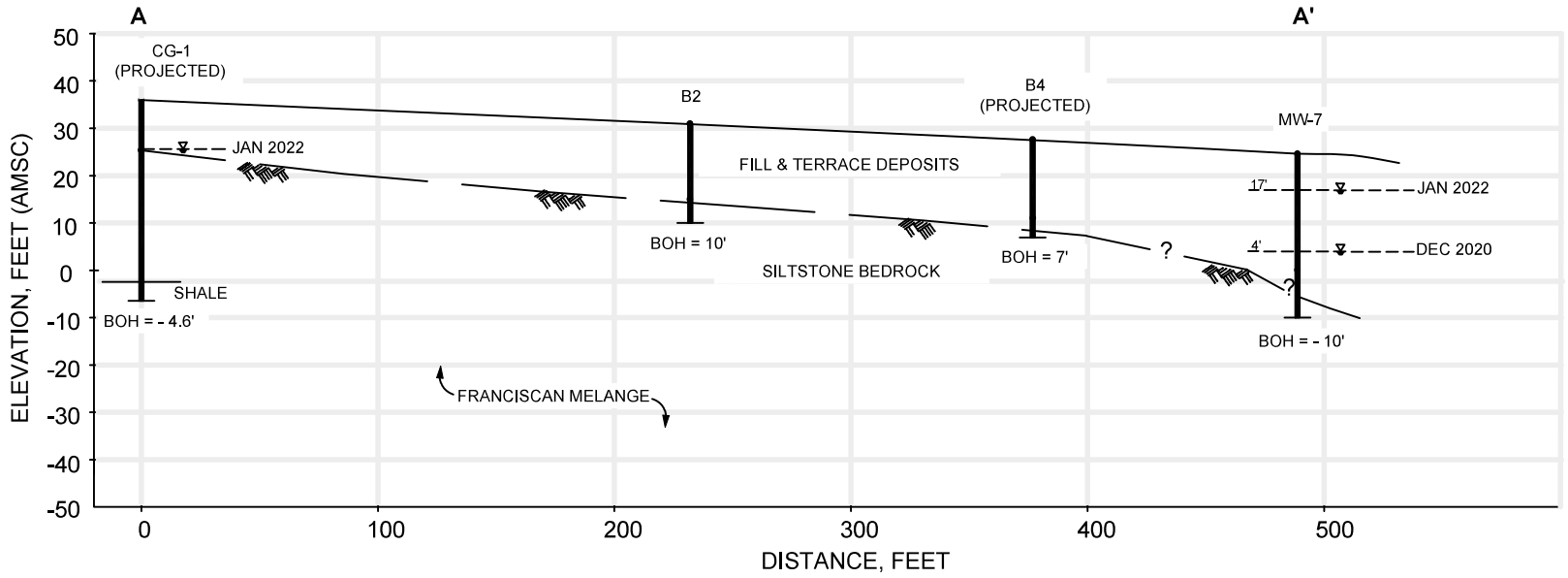
QUESTA ENGINEERING CORP.
Civil
Environmental
& Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807
(510) 236-6114
FAX (510) 236-2423
questa@questaec.com

| | |
|---|---|
| Design: | NH |
| Drawn: | PS |
| Checked: | NH |
| Appr'd: | NH |

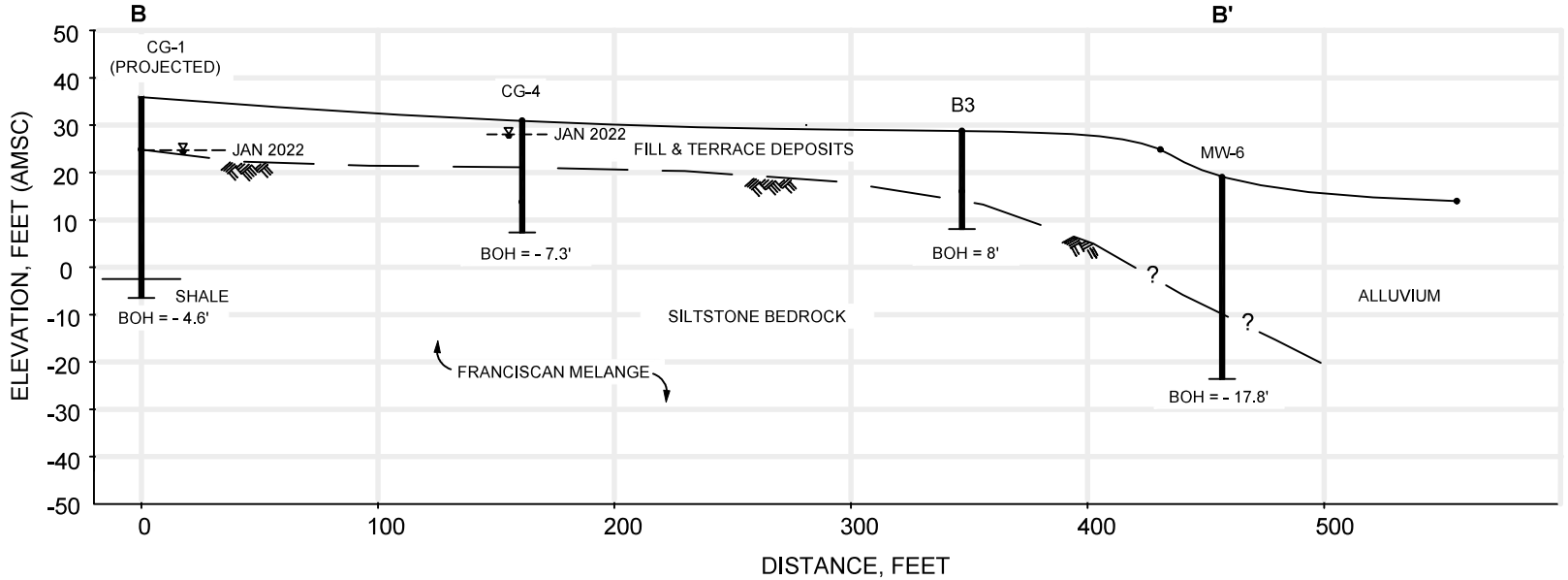
# HYDROGEOLOGIC X-SECTION LOCATIONS

FORMER COAST GUARD SITE, POINT REYES STATION, CA

FIGURE
D-1




## SECTION A - A'




## SECTION B - B'

**FORMER COAST GUARD SITE**
**POINT REYES STATION**

QUESTA ENGINEERING CORP.
Civil
Environmental
& Water Resources
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807
(510) 236-6114
FAX (510) 236-2423
questa@questaec.com

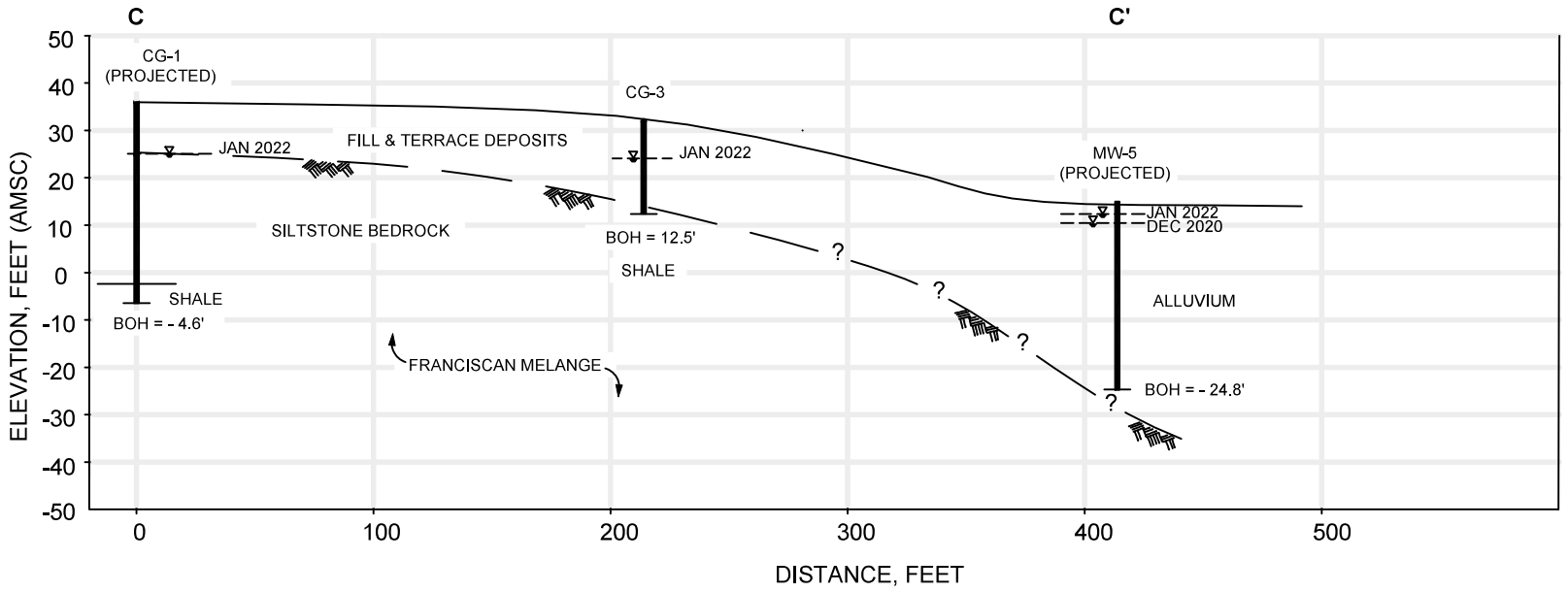
| | |
|---|---|
| Design: | NH |
| Drawn: | PS |
| Checked: | NH |
| Appr'd: | NH |

**HYDROGEOLOGIC X-SECTIONS**
**A - A' AND B - B'**

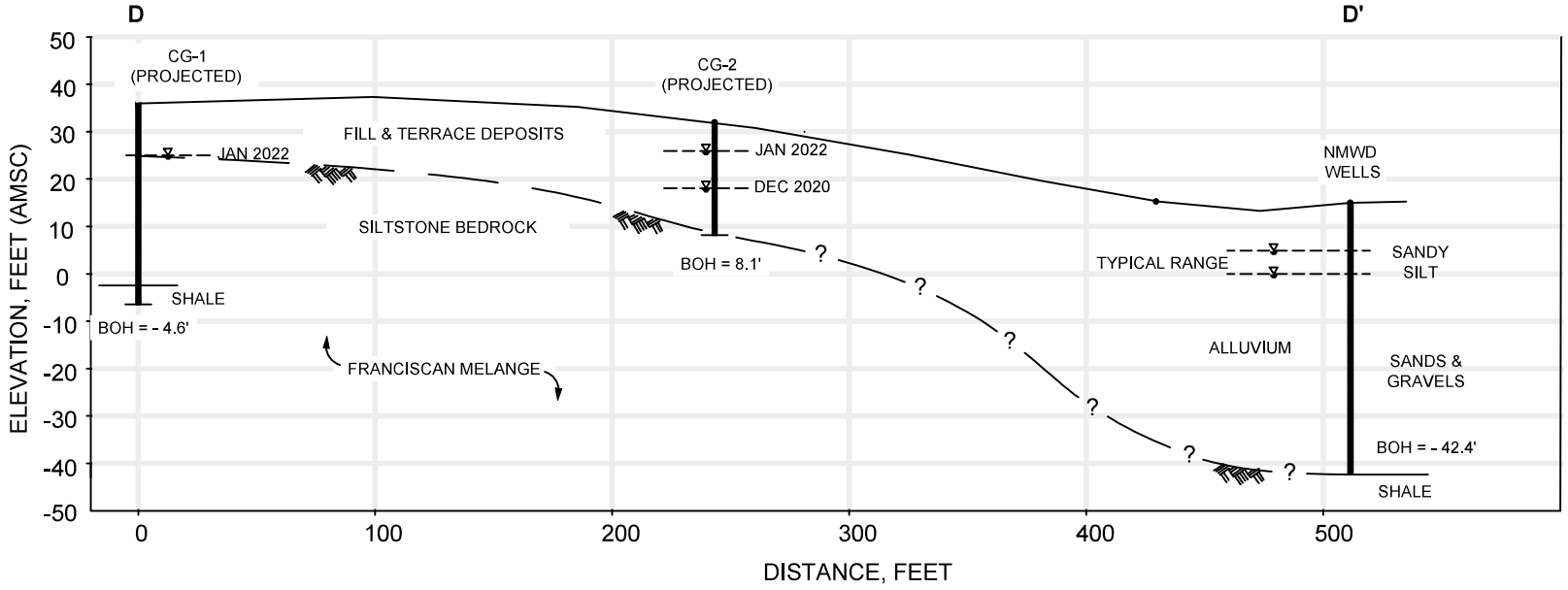
FIGURE
D-2

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

PLOT STYLE: ----
PLOT DATE: 4/29/2022
LAST SAVED: 4/29/2022
P:\2020\2000131_COAST_GUARD_SITE_2020\CAD\MODEL\2000131_PITS&PERCS.DWG




**SECTION C - C'**




**SECTION D - D'**

**FORMER COAST GUARD SITE**
**POINT REYES STATION**

QUESTA ENGINEERING CORP.
Civil
Environmental
& Water Resources
(510) 236-6114
FAX (510) 236-2423
questa@questaec.com
P.O. Box 70356 1220 Brickyard Cove Road Point Richmond, CA 94807

| | |
|---|---|
| Design: | NH |
| Drawn: | PS |
| Checked: | NH |
| Appr'd: | NH |

**HYDROGEOLOGIC X-SECTIONS**
**C - C' AND D - D'**

FIGURE
D-3

IF BAR DOES NOT MEASURE 1" DRAWING IS NOT TO SCALE – ADJUST ACCORDINGLY

P:\2020\2000131_COAST_GUARD_SITE_2020\CAD\MODEL\2000131_PITS&PERCS.DWG LAST SAVED: 4/29/2022 PLOT DATE: 4/29/2022 PLOT STYLE: ----

# Appendix E

## Entrance Area Soil Logs and Percolation Test Data

QUESTA ENGINEERING CORP.

**SOIL PROFILE DESCRIPTION**

**Project Number:** 2000131 **Project Name:** Coast Guard 2020 **Date:** 2/23/2021
**Project Location:** Pt. Reyes Station, Ca **Boring Method:** Backhoe **Logged By:** ERW
**Notes:**

**Test Hole No:** T-1 **Water Table:** NE **Slope:** <2%

| Graphic Log | Depth (inches) | Texture | Structure | Color | Rock | Pores | Consistency | Remarks |
|---|---|---|---|---|---|---|---|---|
| | 0" - 53" | Light Clay Loam | weak-moderate sbk | Dark Grayish Brown | <15% sandstone | Many very fine, fine, and medium, common coarse. No mottles. | so, vy frb/frm, ss, np | Many very fine, fine, and medium, common coarse. Contact is gradual. No mottling. |
| | 53" - 68" | Light Silty Clay Loam | weak-moderate,sbk | Dark Grayish Brown | <15% sandstone | Many very fine, fine, common medium, few coarse. No mottles. | so, vy frb/frm, ss, np | Many very fine, fine, common medium, few coarse. Contact is gradual. No mottling. |
| | 68" - 96"+ | Sandy Clay Loam | moderate-strong, sbk | Light Reddish Brown | | Common very fine, fine, and medium, few coarse. | sh, frb/frm, ns, np | Common very fine, fine, and medium, few coarse. No mottling. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Notes:** No groundwater encountered.

**Test Hole No:** T-2 **Water Table:** NE **Slope:** 10%

| Graphic Log | Depth (inches) | Texture | Structure | Color | Rock | Pores | Consistency | Remarks |
|---|---|---|---|---|---|---|---|---|
| | 0 - 32" | Sandy Gravel | weak, granular | Brown | 15-35% Variety | Common vy fine, fine, and medium, few coarse. | so, lo, ns, np | Common vy fine, fine, and medium, few coarse. Contact is abrupt. No mottling. |
| | 32" - 75" | Light Clay Loam | moderate, sbk | Dark Grayish Brown | <15% sandstone | Common vy fine, fine, medium, and coarse. | so, vy frb/frm, ss, sp | Common vy fine, fine, medium, and coarse. Contact is gradual. No mottling. |
| | 75" - 89" | Light Sandy Clay Loam | moderate, sbk | Light Reddish Brown | <15% sandstone | Common vy fine, fine, and medium, few coarse. | h, frb/frm, ns, np | Common vy fine, fine, and medium, few coarse. Contact is abrupt. No mottling. |
| | 89" - 96"+ | Gravelly Sandy Clay Loam | strong, sbk | Light Reddish Brown | >35% sandstone | Common vy fine, fine, medium and coarse. | h, frb/frm, ns, np | Common vy fine, fine, medium and coarse. No mottling. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Notes:** NE: No groundwater encountered.

QUESTA ENGINEERING CORP.

**SOIL PROFILE DESCRIPTION**

**Project Number:** 2000131 **Project Name:** Coast Guard 2020 **Date:** 2/23/2021
**Project Location:** Pt. Reyes Station, Ca **Boring Method:** Backhoe **Logged By:** ERW
**Notes:**

**Test Hole No:** T-3 **Water Table:** NE **Slope:** 3%

| Graphic Log | Depth (inches) | Texture | Structure | Color | Rock | Pores | Consistency | Remarks |
|---|---|---|---|---|---|---|---|---|
| / - + / - + / - + / - - + / - + / - + / - + / - + / - + / - - + / - + / - + / - + / - + | 0" - 36" | Light Silty Clay Loam | weak-moderate, sbk | Dark Grayish Brown | <15% sandstone | Common vy fine, fine, medium, and coarse. | so-sh, vy frb, ns, np | Common vy fine, fine, medium, and coarse. Contact is gradual. No mottling. |
| + -- : + -- : + -- : -- : + -- : + -- : + -- + -- : + -- : + -- : -- : + -- : + -- : + -- | 36" - 65" | Sandy Clay Loam | strong, sbk | Brown | 15-35% sandstone | Common vy fine, fine, medium, and coarse. | sh, vy frb/firm, ss, np | Common vy fine, fine, medium, and coarse. Contact is gradual. No mottling. |
| 0 + * . 0 + * 0 + * 0+ *. 0 + *0 +*0 0+ *. 0 + *0 +*0 0+ *. 0 + *0 +*0 | 65" - 98"+ | Gravelly Sandy Clay Loam | strong, sbk | Reddish Brown | >35% sandstone | Many vy fine, fine, medium and coarse. | so-sh, vy frb/frm, ns, np | Many vy fine, fine, medium and coarse. No mottling. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Notes:** No groundwater encountered.

**Test Hole No:** T-4 **Water Table:** NE **Slope:** 3%

| Graphic Log | Depth (inches) | Texture | Structure | Color | Rock | Pores | Consistency | Remarks |
|---|---|---|---|---|---|---|---|---|
| / - + / - + / - + / - - + / - + / - + / - + / - + / - + / - - + / - + / - + / - + / - + | 0 - 36" | Light Silty Clay Loam | weak-moderate, sbk | Dark Grayish Brown | <15% sandstone | Common vy fine, fine, medium, and coarse. | so-sh, frb/frm, ss, np | Common vy fine, fine, medium, and coarse. Contact is gradual. No mottling. |
| 0 + * . 0 + * 0 + * 0+ *. 0 + *0 +*0 0+ *. 0 + *0 +*0 0+ *. 0 + *0 +*0 | 36" - 60" | Gravelly Sandy Clay Loam | moderate, sbk | Brown | 15-35% sandstone | Common vy fine, fine, and medium, few coarse. | sh, frb/frm, ss, np | Common vy fine, fine, and medium, few coarse. Contact is clear. No mottling. |
| 0 + * . 0 + * 0 + * 0+ *. 0 + *0 +*0 0+ *. 0 + *0 +*0 0+ *. 0 + *0 +*0 | 60" - 96" | Gravelly Sandy Clay Loam | moderate-strong, sbk | Light Reddish Brown | 15-35% sandstone | Common vy fine, fine, medium, and coarse. | sh-h, vy frb/frm, ns, np | Common vy fine, fine, medium, and coarse. No mottling. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Notes:** NE: No groundwater encountered.

QUESTA ENGINEERING CORP.

**SOIL PROFILE DESCRIPTION**

| | | | | | |
|---|---|---|---|---|---|
| **Project Number:** | 2000131 | **Project Name:** | Coast Guard 2020 | **Date:** | 2/23/2021 |
| **Project Location:** | Pt. Reyes Station, Ca | **Boring Method:** | Backhoe | **Logged By:** | ERW |
| **Notes:** | | | | | |

**Test Hole No:** T-5 **Water Table:** NE **Slope: 5%**

| Graphic Log | Depth (inches) | Texture | Structure | Color | Rock | Pores | Consistency | Remarks |
|---|---|---|---|---|---|---|---|---|
| | 0" - 9" | Topsoil | weak, granular | Dark Grayish Brown | <15% sandstone | Many vy fine, fine, medium, common | so, vy frb/frm, ss, sp | Topsoil. Contact is clear. |
| | 9" - 36" | Clay | moderate, sbk | Brown | <15% sandstone | Few vy fine and fine | so,frb/frm, s sp | Few vy fine and fine. Many (>20% mottles), large (>15mm). Contact is gradual. |
| | 36" - 54" | Clay | strong, sbk | Dark Grayish Brown | <15% sandstone | Few vy fine | sh, v frm, s, sp | Few vy fine. Common mottles (2-20%), medium (5-15mm). |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Notes:** No groundwater encountered.

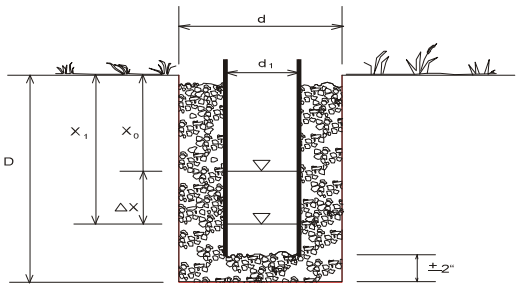
**Test Hole No:** T-6 **Water Table:** NE **Slope: 5%**

| Graphic Log | Depth (inches) | Texture | Structure | Color | Rock | Pores | Consistency | Remarks |
|---|---|---|---|---|---|---|---|---|
| | 0 - 37" | Clay loam | moderate, sbk | Dark Grayish Brown | <15% sandstone | Common vy fine and fine, few medium. | so-sh, frb/frm, ss, sp | Common vy fine and fine, few medium. Contact is gradual. No mottling. |
| | 37" - 61" | Gravelly Clay Loam | moderate, sbk | Brown | >35% sandstone | Many vy fine, fine, medium and coarse. | h, frb, s, sp | Many vy fine, fine, medium and coarse. No mottling. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Notes:** NE: No groundwater encountered.

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA




Project Number: **2000131** Date: **2/24/2021**
Project Name: **Coast Guard 2020** Test by: **MFW, ERW**
Location: **Pt. Reyes, Ca** Checked by: **BG (EHS)**

Test Hole: **P1** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **48"** Soil Type: **Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:44:00 AM | 9.250 | 12:18:00 PM | 14.250 | 34.00 | 5.000 | 8.82 | 6.8 |
| 2 | 12:19:00 PM | 10.000 | 12:49:00 PM | 12.500 | 30.00 | 2.500 | 5.00 | 12.0 |
| 3 | 12:50:00 PM | 10.000 | 1:20:00 AM | 12.500 | 30.00 | 2.500 | 5.00 | 12.0 |
| 4 | 1:20:00 AM | 10.000 | 1:50:00 AM | 12.000 | 30.00 | 2.000 | 4.00 | 15.0 |
| 5 | 1:50:00 AM | 10.000 | 2:20:00 AM | 11.875 | 30.00 | 1.875 | 3.75 | 16.0 |
| 6 | 2:20:00 AM | 10.000 | 2:50:00 AM | 12.675 | 30.00 | 2.675 | 5.35 | 11.2 |
| 7 | 2:50:00 AM | 10.000 | 3:20:00 AM | 11.875 | 30.00 | 1.875 | 3.75 | 16.0 |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **16.8** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 16"**

Remaining Presoak:

Test Hole: **P2** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **40"** Soil Type: **Light Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:46:00 AM | 3.000 | 12:21:00 PM | 9.000 | 35.00 | 6.000 | 10.286 | 5.8 |
| 2 | 12:22:00 PM | 2.500 | 12:52:00 PM | 8.500 | 30.00 | 6.000 | 12.000 | 5.0 |
| 3 | 12:53:00 PM | 3.000 | 1:23:00 AM | 7.750 | 30.00 | 4.750 | 9.500 | 6.3 |
| 4 | 1:23:00 AM | 3.000 | 1:53:00 AM | 9.000 | 30.00 | 6.000 | 12.000 | 5.0 |
| 5 | 1:53:00 AM | 3.000 | 2:23:00 AM | 8.675 | 30.00 | 5.675 | 11.350 | 5.3 |
| 6 | 2:25:00 AM | 3.000 | 2:55:00 AM | 7.500 | 30.00 | 4.500 | 9.000 | 6.7 |
| 7 | 2:59:00 AM | 2.750 | 3:29:00 AM | 7.500 | 30.00 | 4.750 | 9.500 | 6.3 |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **6.6** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 9"**

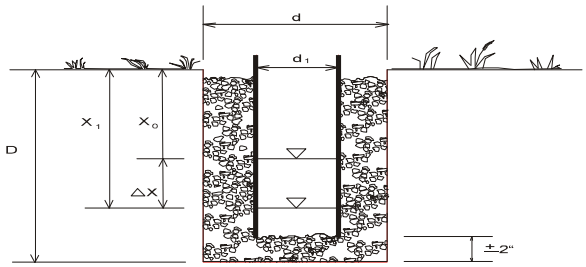
Remaining Presoak:

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA

Project Number: **2000131**
Project Name: **Coast Guard 2020**
Location: **Pt. Reyes, Ca**

Date: **2/24/2021**
Test by: **MFW, ERW**
Checked by: **BG (EHS)**




Test Hole: **P3** Hole Diameter (d): **8** Pipe Diameter ($d_1$): **4** Depth (D): **48"** Soil Type: **Sandy Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 12:01:00 PM | 2.000 | 12:31:00 PM | 7.125 | 30.00 | 5.13 | 10.250 | 5.9 |
| 2 | 12:32:00 PM | 1.500 | 1:02:00 AM | 6.125 | 30.00 | 4.63 | 9.250 | 6.5 |
| 3 | 1:03:00 AM | 2.000 | 1:33:00 AM | 6.250 | 30.00 | 4.25 | 8.500 | 7.1 |
| 4 | 1:35:00 AM | 2.000 | 2:06:00 AM | 6.500 | 31.00 | 4.50 | 8.710 | 6.9 |
| 5 | 2:07:00 AM | 2.000 | 2:37:00 AM | 6.500 | 30.00 | 4.50 | 9.000 | 6.7 |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **7.0** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Start at 8"**

Remaining Presoak:

Test Hole: **P4** Hole Diameter (d): **8** Pipe Diameter ($d_1$): **4** Depth (D): **48"** Soil Type: **Gravelly Sandy Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:55:00 AM | 6.000 | 12:25:00 PM | 11.500 | 30.00 | 5.500 | 11.000 | 5.5 |
| 2 | 12:26:00 PM | 5.750 | 12:56:00 PM | 10.875 | 30.00 | 5.125 | 10.250 | 5.9 |
| 3 | 12:56:00 PM | 5.750 | 1:26:00 AM | 10.875 | 30.00 | 5.125 | 10.250 | 5.9 |
| 4 | 1:27:00 AM | 6.000 | 1:57:00 AM | 10.625 | 30.00 | 4.625 | 9.250 | 6.5 |
| 5 | 1:58:00 AM | 5.875 | 2:12:00 AM | 8.125 | 14.00 | 2.250 | 9.643 | 6.2 |
| 6 | 2:15:00 AM | 6.000 | 2:45:00 AM | 10.375 | 30.00 | 4.375 | 8.750 | 6.9 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

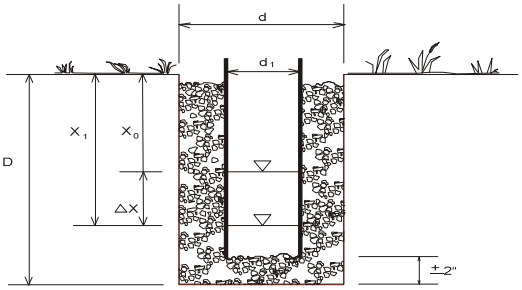
Adjustment Factor: **1.05** Adjusted Stabilized Rate: **7.2** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Start at 12"**

Remaining Presoak:

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA




Project Number: **2000131**
Project Name: **Coast Guard 2020**
Location: **Pt. Reyes, Ca**

Date: **2/24/2021**
Test by: **MFW, ERW**
Checked by: **BG (EHS)**

Test Hole: **P5** Hole Diameter (d): **8** Pipe Diameter ($d_1$): **4** Depth (D): **36"** Soil Type: **Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) (ΔX) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:57:00 AM | 6.750 | 12:27:00 PM | 11.500 | 30.00 | 4.750 | 9.500 | 6.3 |
| 2 | 12:29:00 PM | 6.750 | 12:39:00 PM | 10.375 | 10.00 | 3.625 | 21.750 | 2.8 |
| 3 | 12:59:00 PM | 6.875 | 1:29:00 AM | 10.750 | 30.00 | 3.875 | 7.750 | 7.7 |
| 4 | 1:29:00 AM | 7.000 | 1:59:00 AM | 10.625 | 30.00 | 3.625 | 7.250 | 8.3 |
| 5 | 2:00:00 AM | 7.000 | 2:30:00 AM | 10.500 | 30.00 | 3.500 | 7.000 | 8.6 |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **9.0** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Started at 13"**

Remaining Presoak:

Test Hole: **P6** Hole Diameter (d): **8** Pipe Diameter ($d_1$): **4** Depth (D): **24"** Soil Type: **Light Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) (ΔX) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:43:00 AM | 3.000 | 12:15:00 PM | 8.750 | 32.00 | 5.750 | 10.781 | 5.6 |
| 2 | 12:16:00 PM | 3.000 | 12:46:00 PM | 7.375 | 30.00 | 4.375 | 8.750 | 6.9 |
| 3 | 12:46:00 PM | 3.000 | 1:16:00 AM | 6.875 | 30.00 | 3.875 | 7.750 | 7.7 |
| 4 | 1:16:00 AM | 3.000 | 1:46:00 AM | 6.875 | 30.00 | 3.875 | 7.750 | 7.7 |
| 5 | 1:46:00 AM | 3.000 | 2:16:00 AM | 5.875 | 30.00 | 2.875 | 5.750 | 10.4 |
| 6 | 2:16:00 AM | 3.000 | 2:46:00 AM | 5.750 | 30.00 | 2.750 | 5.500 | 10.9 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

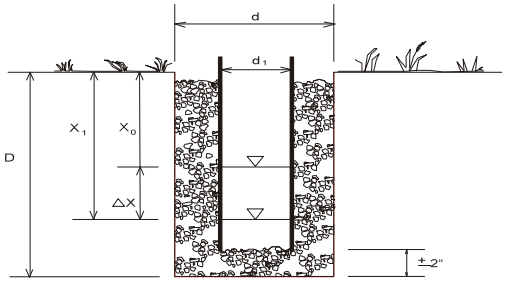
Adjustment Factor: **1.05** Adjusted Stabilized Rate: **11.5** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Started at 9"**

Remaining Presoak:

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA




Project Number: **2000131** Date: **2/24/2021**
Project Name: **Coast Guard 2020** Test by: **MFW, ERW**
Location: **Pt. Reyes, Ca** Checked by: **BG (EHS)**

Test Hole: **P7** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **36"** Soil Type: **Light Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate: Inches per Hour | Percolation Rate: Minutes per Inch |
|---|---|---|---|---|---|---|---|---|
| 1 | 11:42:00 AM | 3.000 | 12:12:00 PM | 8.750 | 30.00 | 5.750 | 11.500 | 5.2 |
| 2 | 12:14:00 PM | 3.000 | 12:44:00 PM | 7.500 | 30.00 | 4.500 | 9.000 | 6.7 |
| 3 | 12:44:00 PM | 3.000 | 1:14:00 AM | 6.875 | 30.00 | 3.875 | 7.750 | 7.7 |
| 4 | 1:14:00 AM | 2.000 | 1:44:00 AM | 6.875 | 10.00 | 4.875 | 29.250 | 2.1 |
| 5 | 1:44:00 AM | 3.000 | 2:14:00 AM | 6.625 | 10.00 | 3.625 | 21.750 | 2.8 |
| 6 | 2:14:00 AM | 3.000 | 2:44:00 AM | 6.625 | 10.00 | 3.625 | 21.750 | 2.8 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **2.9** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 9"**

Remaining Presoak:

Test Hole: **P8** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **40"** Soil Type: **Light Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate: Inches per Hour | Percolation Rate: Minutes per Inch |
|---|---|---|---|---|---|---|---|---|
| 1 | 11:41:00 AM | 3.000 | 12:11:00 PM | DRY | 31.00 | 6.000 | 11.613 | 5.2 |
| 2 | 12:12:00 PM | 3.000 | 12:42:00 PM | DRY | 30.00 | 6.000 | 12.000 | 5.0 |
| 3 | 12:43:00 PM | 3.000 | 1:13:00 AM | DRY | 31.00 | 6.000 | 11.613 | 5.2 |
| 4 | 1:13:00 AM | 3.000 | 1:23:00 AM | 8.375 | 20.00 | 5.375 | 16.125 | 3.7 |
| 5 | 1:24:00 AM | 3.000 | 1:34:00 AM | 7.625 | 20.00 | 4.625 | 13.875 | 4.3 |
| 6 | 1:35:00 AM | 3.000 | 1:45:00 AM | 7.625 | 10.00 | 4.625 | 27.750 | 2.2 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

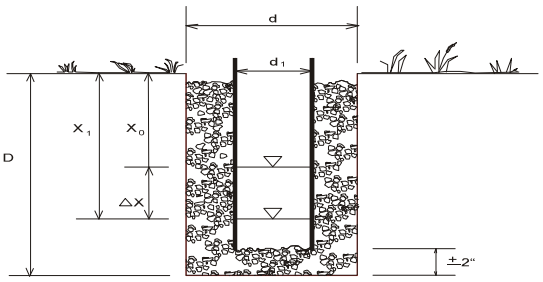
Adjustment Factor: **1.05** Adjusted Stabilized Rate: **2.3** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 9"**

Remaining Presoak:

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA




Project Number: **2000131** Date: **2/24/2021**
Project Name: **Coast Guard 2020** Test by: **MFW, ERW**
Location: **Pt. Reyes, Ca** Checked by: **BG (EHS)**

Test Hole: **P9** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **24"** Soil Type: **Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate: Inches per Hour | Percolation Rate: Minutes per Inch |
|---|---|---|---|---|---|---|---|---|
| 1 | 12:07:00 PM | 8.000 | 12:38:00 PM | DRY | 31.00 | 6.000 | 11.613 | 5.2 |
| 2 | 12:39:00 PM | 8.000 | 1:09:00 AM | 13.875 | 30.00 | 5.875 | 11.750 | 5.1 |
| 3 | 1:10:00 AM | 8.000 | 1:41:00 AM | 14 (WET/DRY | 31.00 | 6.000 | 11.613 | 5.2 |
| 4 | 1:41:00 AM | 8.000 | 2:01:00 AM | 13.000 | 20.00 | 5.000 | 15.000 | 4.0 |
| 5 | 2:03:00 AM | 8.000 | 2:23:00 AM | 12.875 | 20.00 | 4.875 | 14.625 | 4.1 |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **4.3** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Started at 14"**

Remaining Presoak:

Test Hole: **10** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **12"** Soil Type: **Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate: Inches per Hour | Percolation Rate: Minutes per Inch |
|---|---|---|---|---|---|---|---|---|
| 1 | 12:06:00 PM | 3.000 | 12:36:00 PM | 9 (wet/dry) | 30.00 | 6.000 | 12.000 | 5.0 |
| 2 | 12:37:00 PM | 1.250 | 1:07:00 AM | 8.938 | 30.00 | 7.688 | 15.376 | 3.9 |
| 3 | 1:07:00 AM | 3.000 | 1:37:00 AM | 8.875 | 30.00 | 5.875 | 11.750 | 5.1 |
| 4 | 1:40:00 AM | 2.000 | 2:00:00 AM | 8.125 | 20.00 | 6.125 | 18.375 | 3.3 |
| 5 | 2:02:00 AM | 2.750 | 2:32:00 AM | 8.875 | 30.00 | 6.125 | 12.250 | 4.9 |
| 6 | 2:33:00 AM | 2.750 | 3:03:00 AM | 8.875 | 30.00 | 6.125 | 12.250 | 4.9 |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

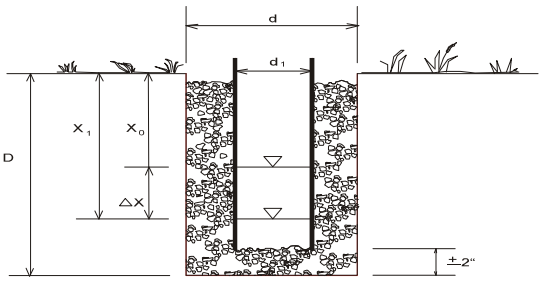
Adjustment Factor: **1.05** Adjusted Stabilized Rate: **5.1** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes:

Remaining Presoak:

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA




Project Number: **2000131** Date: **2/24/2021**
Project Name: **Coast Guard 2020** Test by: **MFW, ERW**
Location: **Pt. Reyes, Ca** Checked by: **BG (EHS)**

Test Hole: **P11** Hole Diameter (d): **8** Pipe Diameter ($d_1$): **4** Depth (D): **24"** Soil Type: **Gravelly Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 12:04:00 PM | 3.000 | 12:34:00 PM | 9 (DRY) | 30.00 | 6.000 | 12.000 | 5.0 |
| 2 | 12:34:00 PM | 3.000 | 1:04:00 AM | 9 (DRY) | 30.00 | 6.000 | 12.000 | 5.0 |
| 3 | 1:04:00 AM | 3.000 | 1:17:00 AM | 9 (DRY) | 13.00 | 6.000 | 27.692 | 2.2 |
| 4 | 1:18:00 AM | 3.000 | 1:32:00 AM | 9 (DRY) | 14.00 | 6.000 | 25.714 | 2.3 |
| 5 | 1:32:00 AM | 3.000 | 1:46:00 AM | 9 (DRY) | 14.00 | 6.000 | 25.714 | 2.3 |
| 6 | 1:46:00 AM | 3.000 | 1:56:00 AM | 9 (DRY) | 10.00 | 6.000 | 36.000 | 1.7 |
| 7 | 1:57:00 AM | 3.000 | 2:08:00 AM | 9 (DRY) | 11.00 | 6.000 | 32.727 | 1.8 |
| 8 | 2:09:00 AM | 3.000 | 2:18:00 AM | 9 (DRY) | 9.00 | 6.000 | 40.000 | 1.5 |
| 9 | 2:18:00 AM | 3.000 | 2:26:00 AM | 9 (DRY) | 8.00 | 6.000 | 45.000 | 1.3 |
| 10 | 2:28:00 AM | 2.250 | 2:40:00 AM | 9 (DRY) | 12.00 | 6.750 | 33.750 | 1.8 |
| 11 | 2:41:00 AM | 2.500 | 2:51:00 AM | 8.750 | 10.00 | 6.250 | 37.500 | 1.6 |
| 12 | 2:53:00 AM | 2.500 | 3:03:00 AM | 8.750 | 10.00 | 6.250 | 37.500 | 1.6 |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **1.7** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 9"**

Remaining Presoak:

Test Hole: **P12** Hole Diameter (d): **9** Pipe Diameter ($d_1$): **4** Depth (D): **24"** Soil Type: **Light Sily Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) ($\Delta X$) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:47:00 AM | 1.500 | 12:23:00 PM | 8.000 | 36.00 | 6.500 | 10.833 | 5.5 |
| 2 | 12:24:00 PM | 2.000 | 12:54:00 PM | 8.000 | 30.00 | 6.000 | 12.000 | 5.0 |
| 3 | 12:55:00 PM | 2.000 | 1:25:00 AM | 8.000 | 30.00 | 6.000 | 12.000 | 5.0 |
| 4 | 1:25:00 AM | 2.000 | 1:55:00 AM | DRY | 30.00 | 6.000 | 12.000 | 5.0 |
| 5 | 1:55:00 AM | 2.000 | 2:05:00 AM | 5.500 | 10.00 | 3.500 | 21.000 | 2.9 |
| 6 | 2:06:00 AM | 2.000 | 2:35:00 AM | 7.250 | 29.00 | 5.250 | 10.862 | 5.5 |
| 7 | 2:36:00 AM | 2.000 | 3:06:00 AM | 7.375 | 30.00 | 5.375 | 10.750 | 5.6 |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

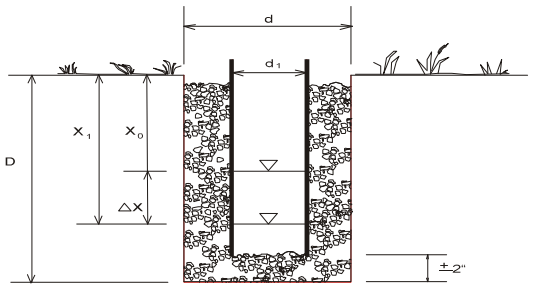
Adjustment Factor: **1.03** Adjusted Stabilized Rate: **5.9** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 8"**

Remaining Presoak:

QUESTA ENGINEERING CORP.

# PERCOLATION TEST DATA




Project Number: **2000131** Date: **2/24/2021**
Project Name: **Coast Guard 2020** Test by: **MFW, ERW**
Location: **Pt. Reyes, Ca** Checked by: **BGT (EHS)**

Test Hole: **P13** Hole Diameter (d): Pipe Diameter ($d_1$): **4** Depth (D): **40"** Soil Type: **Sandy Clay Loam**

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) (ΔX) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | 11:59:00 AM | 9.000 | 12:29:00 PM | DRY | 30.00 | 6.000 | 12.000 | 5.0 |
| 2 | 12:30:00 PM | 8.500 | 1:00:00 AM | DRY | 30.00 | 7.000 | 14.000 | 4.3 |
| 3 | 1:00:00 AM | 9.000 | 1:20:00 AM | 3 (WET/DRY) | 20.00 | 8.000 | 24.000 | 2.5 |
| 4 | 1:22:00 AM | 9.000 | 1:42:00 AM | 2.750 | 20.00 | 9.000 | 27.000 | 2.2 |
| 5 | 1:43:00 AM | 9.000 | 2:04:00 AM | 2.625 | 21.00 | 10.000 | 28.571 | 2.1 |
| 6 | 2:05:00 AM | 9.000 | 2:25:00 AM | 3.375 | 20.00 | 11.000 | 33.000 | 1.8 |
| 7 | 2:26:00 AM | 9.000 | 2:48:00 AM | 2.500 | 22.00 | 12.000 | 32.727 | 1.8 |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: **1.05** Adjusted Stabilized Rate: **1.9** Maximum Application Rate:

Adjustment Rate Method: **Plavel pack** Notes: **Starting at 15"**

Remaining Presoak:

Test Hole: Hole Diameter (d): Pipe Diameter ($d_1$): Depth (D): Soil Type:

| Trial Number | Start Time ($T_0$) | Initial Water Level (inches) ($X_0$) | Time Read ($T_1$) | Final Water Level (Inches) ($X_1$) | Time Interval (minutes) (T) | Water Drop (inches) (ΔX) | Percolation Rate | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Inches per Hour | Minutes per Inch |
| 1 | | | | | | | | |
| 2 | | | | | | | | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |
| 5 | | | | | | | | |
| 6 | | | | | | | | |
| 7 | | | | | | | | |
| 8 | | | | | | | | |
| 9 | | | | | | | | |
| 10 | | | | | | | | |
| 11 | | | | | | | | |
| 12 | | | | | | | | |

Adjustment Factor: Adjusted Stabilized Rate: **#N/A** Maximum Application Rate:

Adjustment Rate Method: Notes:

Remaining Presoak:

# APPENDIX H

# WASTEWATER BASIS OF DESIGN REPORT

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# Pt. Reyes Coast Guard Housing Site Redevelopment
# Onsite Wastewater Basis of Design Report

June 9, 2022

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## 1.0 PROJECT DESCRIPTION

This basis of design (BOD) report is intended to outline the design criteria for a water reuse facility (WRF) at the Pt. Reyes Coast Guard Housing Site Redevelopment project (Project) in Pt. Reyes Station, CA. The Point Reyes Former Coast Guard Station is in the process of being redeveloped to support an affordable housing project, a community-based center, and administrative offices for property management and resident services.

Sherwood Design Engineers (SDE) has prepared a proposed wastewater management approach for the project that would include the installation of a new enhanced wastewater treatment system to produce high-quality effluent that can be reused for landscape irrigation around the site. The plan would also utilize new leach fields that would be used as a backup disposal system during periods of rainfall or when the irrigation system is being maintained.

## 2.0 WASTEWATER SUPPLY

SDE prepared a flow analysis memorandum (Appendix A) that outlines the historical water usage at the site, the proposed program, and the projected wastewater flow for the maximum occupancy day. The proposed program was provided by CLAM and Eden Housing and wastewater unit flow rates for each type of occupancy (residential, staff, visitors, meals) were sourced from the Marin County Regulations, or in the case of residential water demand, was negotiated with the County.

Based on proposed programming, approximately 8,600 gallons per day (gpd) and 8,800 gallons per day (gpd) of wastewater will be generated at the site under normal and full occupancy conditions, respectively. As a precautionary measure, the treatment and disposal systems will be sized for a 10,000 gpd daily flow, which represents a factor of safety of 1.1.

A wastewater treatment capacity of 10,000 gpd will provide enough capacity for all residents and staff as well as up to 180 visitors. During large special events, when the number of visitors is anticipated to exceed 180, portable toilets are proposed to be brought on site to manage additional sanitary waste and maintain wastewater flow to stay at or below 10,000 gpd.

## 3.0 TREATMENT GOALS

To protect groundwater at the site and create a reliable supply of non-potable water for irrigation needs, the wastewater treatment system will be designed to meet the State's Recycled Water Standards established in California Code of Regulations, Title 22 for disinfected tertiary treatment. The treatment system will be designed to produce disinfected tertiary treated recycled water that will have a biochemical oxygen demand (BOD), total suspended solids (TSS), and total nitrate level to less than 10 mg/L. 10 mg/L is the primary drinking water standard for nitrates, a pollutant of concern for groundwater. In addition, SDE recommends advanced oxidation to remove trace contaminants including pharmaceuticals and other contaminants of emerging concern.

With tertiary treatment proposed for beneficial reuse, the San Francisco Bay Regional Water Quality Control Board (Regional Board) is the lead regulatory agency that would oversee and permit this project. The proposed wastewater system will require a Report of Waste Discharge and Form 200 and a Title 22 Engineering Report as part of the application process to meet the Waste Discharge Requirements of the State. Additionally, the recycled water must meet effluent limits set by the State Water Resources Control Board Order WQ 2014-0153-DWQ "General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems" (2014 WDR General Order). The treatment goals for the proposed system included in Table 1.

Table 1. Treatment Goals

| Parameter | Unit | Treatment Goal |
|---|---|---|
| BOD | mg/L | 10 |
| TSS | mg/L | 10 |
| Total Nitrate | mg/L | 10 |
| Bacteria | - | 5-log removal (99.999%) |
| Cysts (Giardia/Cryptosporidium) | - | 5-log removal (99.999%) |
| Viruses | - | 5-log removal (99.999%) |

## 4.0 PROPOSED APPROACH AND CONCEPT PLAN

SDE prepared a conceptual water reuse facility design for the anticipated wastewater characterization, flow, and treatment requirements. Conceptual design plans for the proposed system are included as Appendix B.

### 4.1 Influent Characterization and Flow

Based on the wastewater supply calculations found in Section 2, the wastewater treatment system and reuse and disposal systems are sized for design flow of 10,000 gpd.

Characterization of the raw wastewater is critical to designing primary and secondary treatment processes. The existing buildings will be upgraded to meet water efficiency standards, leading to higher strength wastewater than what is existing. The anticipated raw wastewater characterization is presented in Table 2.

Table 2. Influent Characterization of Residential Wastewater

| Water Quality Parameter | Raw Wastewater Concentration (mg/L)[1] |
|---|---|
| BOD | 400 |
| TSS | 350 |
| TKN | 85 |

1. Crites and Tchobanoglous (1998) *Small & Decentralized Wastewater Management Systems.* Table 4-14.

### 4.2 Collection System

A Closed-Circuit Television Video (CCTV) survey of the existing collection system is underway to provide a comprehensive assessment of the system's health. If any issues are observed, appropriate improvements will be included in future design plans. For example, if the CCTV indicates evidence of inflow and infiltration, either the collection system will be replaced, or the wastewater treatment plant and dispersal/disposal areas will be expanded. These alternatives will need to be evaluated at a later date.

Depth to groundwater measurements in monitor well CG-4 shows that groundwater is higher than the manhole #2 invert elevation for at least part of the year, suggesting inflow and infiltration (I&I) is possible. However, construction drawings show that in 2009 the main sewer line was replaced with high-density polyethylene (HDPE) pipe and the manholes were replaced. The 2009 drawings include a detail of the sump manhole and specifies construction with waterproof interior and exterior coatings, watertight connections to pipes, and Thorosealed seams, all of which reduce I&I. This type of manhole construction was likely the standard practice at this site during this time period.

SDE recommends continued monitoring of DTW in monitor wells for use in evaluating the potential for I&I into sewer pipes and manholes.

### 4.3 Wastewater Treatment

The proposed treatment train is designed to provide a very high level of treatment to protect groundwater resources at the site, to allow for reuse of the water, and ensure reliable effluent quality. A schematic of the proposed treatment train is included in
Figure 1.

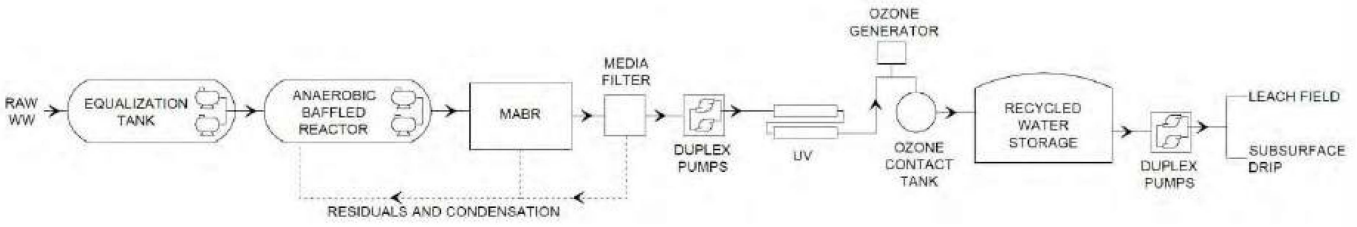


Figure 1. Proposed WRF Treatment Schematic

Equalization

An equalization (EQ) tank is proposed to equalize the variable flows coming into the treatment system to provide a constant flow rate to the downstream treat units. A duplex submersible pump system will be inside the EQ tank to pump wastewater into the next treatment process at a metered, equalized rate. The EQ tank is sized to store up to 8 hours of influent if the treatment system is down. Using a typical residential hourly wastewater flow pattern, the maximum 8-hr inflow is 4,350 gallons, which occurs between the hours of 2 pm and 10 pm. A 5,000-gallon, 8-ft diameter underground fiberglass tank was selected to store this volume. This tank will be double-walled to provide secondary containment.

Anaerobic Baffled Reactor

The first step in the treatment process is an anaerobic baffled reactor (ABR). An ABR is an improved septic tank with a series of baffles under which the wastewater flow is vertical through the last three chambers. In this flow configuration the wastewater is in direct contact with the active biomass (sludge) results in improved treatment. The ABR is designed to have a total hydraulic residence time of 48 hours and four chambers with an upflow velocity of no more than 1.5 feet per hour in the last three chambers. A 20,000-gallon, 10-ft diameter underground fiberglass tank was selected to accommodate average and maximum occupancy wastewater flows. This tank will be double-walled to provide secondary containment.

Secondary Biological Treatment

After primary treatment in the ABR, secondary treatment is accomplished through biological treatment. A membrane aerated biofilm reactor (MABR) treatment system is a high rate, compact biological treatment system that can provide a very high level of treatment. MABRs can be constructed and delivered in shipping containers that minimize the total equipment footprint. Waste activated sludge from the MABR will be discharged into the ABR.

The MABR system is designed to reduce the carbonaceous and nitrogenous compounds in the wastewater. The MABR system selected is manufactured by Fluence Corporation and is sized to reduce the biochemical oxygen demand (BOD), the total suspended solids (TSS) and total nitrogen (TN) to less than 10 mg/L, respectively.

The MABR, which will have an approximate footprint of 8-ft by 40-ft, does not need to be protected by a building. A screen or fence can be constructed around the MABR for security and aesthetic purposes.

Tertiary Filtration and Disinfection

Effluent from the MABR will flow through a deep bed multi-media filter for final tertiary filtration. The tertiary filter will include a polymer feed system to enhance remove of solids in the wastewater. Tertiary filtration will remove fine and suspended solids to improve the disinfection of the effluent through the UV disinfection system and ozone oxidation system. The media filter is included in the MABR skid.

To provide the maximal protection to the local groundwater, SDE is proposing two levels of disinfection and oxidation to the treatment train. After the multi-media filter, effluent will flow through two closed-vessel ultraviolet (UV) light disinfection units and an ozone contactor. The two UV units will be plumbed in series with the ability to take one unit offline for maintenance while keeping the other unit in operation. Advanced oxidation will be provided by ozone treatment system that is sized to remove trace contaminants, including pharmaceuticals and other emerging contaminants of concern. If the ozone system if offline for maintenance, the system can be manually programmed to send flows to the leach fields instead of the irrigation system.

It is recommended that the tertiary filtration and disinfection equipment be housed in a treatment building for security and protection from the elements. The treatment building can also house the control panel.

Storage

SDE is proposing that the treated effluent be stored in an above ground tank (called the “recycled water storage tank”). From this tank, the effluent can either flow via gravity to the new leach fields or be pumped into the subsurface drip irrigation system. The storage capacity is sized to provide one day of recycled water storage, which equates to 10,000 gallons. SDE is recommending a 10,000-gallon above ground HDPE storage tank.

### 4.4 Recycled Water Reuse and Disposal

For reuse and disposal of the treated wastewater, SDE recommends that the site include 100% dispersal of the maximum day flow via subsurface drip dispersal (SSD) as the primary means of water reuse and 100% disposal via leach fields as secondary disposal. This would provide 200% disposal for the site as required by Marin County Environmental Health Services (MCEHS) code.

Primary Dispersal – Recycled Water Reuse via Subsurface Drip

Landscape irrigation via subsurface drip (SSD) is currently proposed for primary method of irrigation and reuse of recycled water. The SSD system will comply with the setbacks established by the MCEHS including setbacks from buildings, water lines, paved areas, and culverts. The subsurface drip dispersal areas will not encroach within the biological resource setback/buffer areas.The MCEHS requires a minimum setback of 150 ft from municipal wells. Due to adjacent riparian and wetland setbacks, the drip dispersal system design on this project will exceed this requirement, with a setback of at least 200 ft from the nearby NMWD municipal wells. SSD systems can be used year-round except during rain events.

The minimum depth to groundwater in the proposed irrigated areas was greater than 4.5 feet below ground surface.[1] SSD systems are placed at approximately 1.5 ft below ground surface which results in greater than 3-ft separation between the SSD to groundwater. The site has soils with an average percolation rate of greater than 5 minutes per inch[1] and Marin County septic regulations allow a minimum depth to groundwater of 3 feet for a conventional septic system with these soil characteristics. The water being used for irrigation at this site is also provided supplemental treatment, for which Marin County regulations allow minimum depth to seasonal high groundwater of 2 ft for SSD.

Sizing the SSD system can be determined either by soil application rates (SAR) or irrigation demand. The two approaches are discussed below. Additional coordination with the landscape architect and irrigation designer will be required prior to finalizing the design of this system.

a. Soil Application Rate

SSD systems are typically designed based on the local soil conditions using a soil application rate (SAR). Soils investigation of the site indicate a SAR of 0.4 gpd per square foot (gpd/sf) for the soils in the building area. An SSD system sized to accommodate the maximum occupancy day flow of 10,000 gpd using a SAR of 0.4 gpd/sf would require 25,000 sf.

Detail 1 of Sheet WW2.0 in Appendix B includes a conceptual layout of the SSD fields using this approach. Given the ample landscaped area on the site, this approach is considered achievable. The vegetation plants within SSD fields must be able to tolerate the level of soil saturation expected equivalent to 0.4 gpd/sf.

b. Irrigation Demand

Recycled water can be used for landscaping irrigation to reuse the treated water in a beneficial manner and to reduce potable water demand onsite. A conceptual landscape plan was prepared by Bay Tree Design, which identified a total of 121,000 sf of planting areas. This area is included in Detail 2 of Sheet WW2.0 in Appendix B.

Irrigation demand is estimated using historical precipitation reference evapotranspiration ($ET_0$) data. The closest climate station with daily precipitation data is the National Oceanic and Atmospheric Administration's (NOAA) station in Bolinas, CA, which dates to 2014. The closest climate station with daily $ET_0$ is in Black Point, CA, near Novato, and is run by the California Department of Water Resources through their California Irrigation Management Information System (CIMIS). $ET_0$ is determined using the Modified Penman Equation which uses climate information such as temperature, vapor pressure, and wind speed.

Reference irrigation demand is determined by subtracting $ET_0$ from precipitation on a daily time step. If precipitation is greater than $ET_0$, then irrigation is zero. The sum of reference irrigation demand for each month between the December 2014 and February 2022 was calculated and the average for each month is used to project irrigation demand at the Site. Monthly irrigation demand is included in Table 3.

Reference irrigation demand is multiplied by a plant factor to determine the irrigation demand. A plant factor of 1.0 was used in this analysis, which represents water demand for turf grass and other similar plant species. (The plant factor will likely be adjusted based on the final landscape plan that has not yet been prepared for the site.)

[1] Questa Engineering Corp., May 2, 2022. "Draft Groundwater and Soils Investigation for Onsite Wastewater Facilities"

Table 3. Monthly Irrigation Demand

| Month | Reference Irrigation Demand (in/month) | Irrigation Demand (gal/month) | Average Daily Irrigation Demand (gpd) | Percent of Design Flow (%) | Equivalent SAR (gpd/sf) |
|---|---|---|---|---|---|
| January | 1.00 | 75,140 | 2,424 | 24% | 0.02 |
| February | 0.91 | 68,635 | 2,451 | 25% | 0.02 |
| March | 1.43 | 107,963 | 3,483 | 35% | 0.03 |
| April | 2.50 | 188,558 | 6,285 | 63% | 0.05 |
| May | 4.01 | 302,124 | 9,746 | 97% | 0.08 |
| June | 5.54 | 417,738 | 13,925 | 139% | 0.12 |
| July | 6.76 | 509,754 | 16,444 | 164% | 0.14 |
| August | 6.89 | 519,451 | 16,756 | 168% | 0.14 |
| September | 6.22 | 469,241 | 15,641 | 156% | 0.13 |
| October | 5.16 | 389,184 | 12,554 | 126% | 0.10 |
| November | 3.57 | 269,477 | 8,983 | 90% | 0.07 |
| December | 1.73 | 130,105 | 4,197 | 42% | 0.03 |
| **Annual Total** | **45.71 in** | **3,447,372 gal** | - | | |

In the summer, 100% of recycled water supply will be used for irrigation and potable water may be needed to supplement depending on the final landscape plan and plants selected. In the winter months, irrigation will only consume 25% of the recycled waters supply and the excess recycled water would be sent to the leach fields for disposal.

As noted above, the SAR determined by investigation of the site is 0.4 gpd/sf. Using the above irrigation analysis, the maximum equivalent SAR is 0.14 gpd/sf, 65% less than the allowable SAR. In addition to recycled water being lost to evapotranspiration, which is calculated as the irrigation demand, water will infiltrate into the soil below the root zone. This means more water can be applied to the landscape than what is calculated above.

It is assumed that the landscaped areas will be irrigated using a subsurface drip system, but other forms of irrigation can be used such that they comply with Title 22 recycled water requirements. Monthly irrigation water demand is listed in Table 3. During dry or drought year conditions the irrigation demand will increase.

c. Summary of Water Balance Analysis

The results of the water balance calculations indicate that under normal and dry water years conditions approximately 65% of the recycled water generated on site will be used to meet the landscape irrigation demand for the site. The remaining 35% will be discharged to the leachfield disposal system. Table 4 shows the total amount of recycled water generated at the site, the total amount of water used for landscape irrigation uses, and the amount discharged to the leachfields.

Table 4. Monthly Recycled Water Flows, Irrigation Demands and Leachfield Discharges

| Month | Total Monthly Flow (gallons) | Total Monthly Recycled Water Irrigation Demand (Gallons) | Total Monthly Discharge to Leachfields (gallons) |
|---|---|---|---|
| Jan | 272,800 | 75,140 | 197,660 |
| Feb | 246,400 | 68,635 | 177,765 |
| Mar | 272,800 | 107,963 | 164,837 |
| April | 264,000 | 62,036 | 201,964 |
| May | 272,800 | 127,991 | 144,809 |
| Jun | 264,000 | 193,919 | 70,081 |
| Jul | 272,800 | 272,800 | 0 |
| Aug | 272,800 | 272,800 | 0 |
| Sep | 264,000 | 264,000 | 0 |
| Oct | 272,800 | 272,800 | 0 |
| Nov | 264,000 | 264,000 | 0 |
| Dec | 272,800 | 130,105 | 142,695 |
| **Total** | **3,212,000** | **2,112,189** | **1,099,811** |

Secondary Disposal - Leach fields

Leach fields will serve as the secondary disposal system and will be sized to accommodate 100% of the design flow. The leach fields will be used during periods of low irrigation demand, rain events and when the subsurface drip system needs maintenance.

It is recommended the new leach fields be installed near the entrance area and placed outside the water protection zone to the maximum extent possible. Soil investigations indicate high infiltration rates in the entrance area and a SAR of 1.2 gpd/sf is used to size the leach field trenches. Assuming a depth of 24 inches and a width of 24 inches, the leach lines will have six square feet per linear foot of infiltrative area. Based on these assumptions, a total of 1,390 linear feet of leach lines are required. Trenches will be spaced at 6 ft on-center. The total required area of leach fields is 8,330 sf.

The leach lines are placed outside of applicable setbacks specified in Section 401 of the Marin County Regulations for Design, Construction and Repair of Individual Sewage Disposal Systems (Marin County Regulations). A 5 ft setback is required between adjoining property lines and the edge of the leach field. In the case of downslope property lines, the minimum horizontal distance is 25 ft. The property line south of the proposed leach field is downslope by approximately 2.5%, so a 25 ft setback is applied. All other edges of the leach field are setback by at least 5 ft from adjoining property lines.

SDE does not anticipate leach field saturation or ponding given the high quality of recycled water, which will minimize biological growth and clogging in leach trench, and the depth of groundwater (between 8' and >10' below ground surface).

Alternative Recycle Water Reuse Opportunities

In addition to using recycled water for landscape irrigation purposes, Sherwood has identified several alternative methods to reuse the recycled water on and potential off site including:

- Grassland irrigation – The hillside north of the housing has grasses, including the California native purple needlegrass. Recycled water may be used to seasonally irrigate this grassland to support its ecosystem health.
- Supplemental water for enhancement of wetland habitat(s) on the site.
- Recycled water refill station – Similar to the recycled water refill station operated by NMWD in Novato, recycled water produced at the site can be reused for beneficial purposes offsite. Operation of a fill station requires training for both the operator and the recipients per NMWD regulations.
- Toilet flushing in community area restrooms – Any new public restrooms could be dual-plumbed to use recycled water for toilet flushing, which would be readily available from the recycled water distribution main. This would represent a recycled water demand of approximately 300 to 400 gpd.
- Future recycled water supply to Pt. Reyes Station public restroom – The public restroom in Pt. Reyes Station is approximately 850 feet away from the WRF. Recycled water could potentially be used for toilet flushing at the public restroom and irrigate the landscaping around it, but NMWD does not currently allow dual plumbing in public spaces due to limited benefit and burden on testing and reporting.

Setback Requirements

Per the 2014 WDR General Order and Marin County Regulations, dispersal and disposal of disinfected tertiary recycled water must adhere to certain setbacks. All subsurface drip dispersal areas and leach fields must comply with the setbacks included in Table 5. Tanks must be setback from downslope property lines by 10'.

Table 5. Setback Requirements

| Reference | Disposal Area Setback Requirements | | Proposed Setback |
|---|---|---|---|
| | 2014 WDR General Order[1] | Marin County Regulations[2] | |
| Domestic Well | 100' | 150' | 200' |
| Flowing Stream | 100' | 100' | 100' |
| Ephemeral Stream Drainage | 50' | 50' | 50' |
| Intermittent Watercourse or Seasonal Wetland | - | 75' | 75' |
| Property Line | 5' | 5' | 5' |
| Downslope Property Line | - | 25' | 25' |
| Lake or Reservoir | 200' | | 200' |
| Building | - | 10' | 10' |
| Domestic Water Line | - | 10' | 10' |
| Driveway or Paved Surface | - | 5' | 5' |
| Roadside Ditch | - | 25' | 25' |
| Culvert | - | 15' | 15' |

1. Setbacks featured are applicable to leachfields. SSD fields are not specified in the 2014 WDR General Order setback tables, so SDE is assuming SSD fields would be treated the same as leach fields.
2. Section 401 of the Marin County Regulations for Design, Construction and Repair of Individual Sewage Disposal Systems

### 4.5 Other Considerations

Noise Control

Noise from pumps, aeration blowers, and operations activities may need to be mitigated to meet project expectations. Depending on acoustic requirements provided by others, noise output from specific equipment can be damped using acoustic enclosures.

Solids Management

Primary solids are intended to accumulate in the ABR, although some will also accumulate in the EQ tank. All waste lines from the MABR and media filter will be sent to the ABR. Regular sludge monitoring of the EQ and ABR tanks will be conducted by the operator. The EQ and ABR tanks will be pumped as needed by a certified septic hauler registered with Marin County Environmental Health and Safety. SDE anticipates the ABR will need to be pumped once or twice a year.

Electrical Loads

The new facility will likely require a new 100-amp three-phase service for the treatment and pumping equipment. Further analysis will be required to determine the size of the new service for the system. SDE also assumes that a backup generator will be required to maintain the system operational during periodic power outages.

### 4.6 Operations and Monitoring

Eden Housing and CLAM will employ a certified wastewater operator to operate, monitor, maintain the WRF. Operations of the WRF will require routine visits and checks on daily basis.

Daily Visits and Inspections – A visual check of the WRF will occur daily. The operator will also remotely review the SCADA system daily.

Water Quality Monitoring – The water quality monitoring program must comply with monitoring and reporting requirements included in the State Water Resources Control Board Order WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use and Title 22 of the California Code of Regulations and any updates therein.[2] The operator will conduct water quality sampling on a daily and monthly basis based on the monitoring requirements listed in Table 6.

[2] State Water Resources Control Board Order WQ 2016-0068-DDW Water Reclamation Requirements for Recycled Water Use
https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2016/wqo2016_0068_ddw.pdf

Table 6. Recycled Water Monitoring Requirements

| Constituent | Units | Sample Type | Sample Frequency | Reporting Frequency |
|---|---|---|---|---|
| Influent TN (Influent) | mg/L | Grab | Monthly | Quarterly |
| Flow Rate (Effluent) | gpd | Meter | Continuous | Quarterly |
| BOD (Effluent) | mg/L | Grab | Monthly | Quarterly |
| Nitrogen Series (Effluent)[1] | mg/L | Grab | Monthly | Quarterly |
| Total Suspended Solids (Effluent) | mg/L | Grab | Monthly | Quarterly |
| Total Coliform Bacteria (downstream of disinfection units) | MPN/100 mL | Grab | Daily[2] | Quarterly |
| Turbidity (downstream of disinfection units) | NTU | Meter | Continuous[2] | Quarterly |
| UV Transmittance | $mJ/cm^2$ | Meter | Continuous | Quarterly |
| Contaminants of Emerging Concern (CECs)[3] | TBD | TBD | TBD | TBD |
| Priority Pollutants[4] | | | 5 years | Next annual report |

1. Nitrogen series includes ammonia, Total Kjeldahl Nitrogen (TKN), Total Nitrogen (TN), nitrate, and nitrite.
2. Sampling frequency shall be specified in the Notice of Applicability or as required California Code of Regulations, Title 22 Section 60321.
3. TBD = To be determined. CEC monitoring may be required depending on results of the pending groundwater study and discussions with North Marin Water District.
4. Priority pollutants are listed in Appendix A of 40 Code of Federal Regulations (CFR) Part 423.

Reporting

A self-monitoring report that presents the results of the daily and monthly water quality test results and flow data must be submitted to Regional Water Quality Control Board on a quarterly basis. The quarterly report will be submitted no later than the fifteenth day of the following month after each quarter. In accordance with State Water Resources Control Board Order WQ 2016-0068-DDW, an Annual Report shall be submitted to the Regional Water Board by April 1st following the monitoring year. All reporting must be prepared and submitted by a certified operator.

If at any point the treatment system fails and any one of the key parameters does not meet the discharge requirements, the alarm system will notify the treatment plant operator(s) and the issue will be promptly corrected. Alarms will be installed on all major treatment steps and will be powered independently from the normal treatment plant power supply.

To protect public safety, all areas that utilize recycled tertiary water for landscape irrigation will be well marked with signage that clearly indicates as such. Signs will be posted that read, “RECYCLED WATER – DO NOT DRINK”, and combined with an internationally understood “do not drink” symbol.

Groundwater Monitoring

SDE recommends groundwater sampling and water quality analysis between the irrigated areas and NMWD wells using the existing wells CG-2 and CG-3, and two additional monitor wells CG-5 and CG-6 (see Figure 3, WW2.0, Appendix B). Groundwater in alluvium will also be monitored by collection and analysis of water samples from MW-5.

The WRF and some of the leach fields are within the 1,600-ft NMWD water protection zone. Based on recent hydrogeology findings by Questa, the WRF and leach fields are outside of the two-year time of travel boundary.[3] This boundary represents the distance from which groundwater takes 2-yrs to travel to the NMWD municipal groundwater wells.

## 5.0 OPINION OF PROBABLE COSTS

The Engineer's Opinion of Probable Cost is included as Appendix C. The proposed system is estimated to cost $2.26 million.

[3] Questa Engineering Corp., May 2, 2022. "Draft Groundwater and Soils Investigation for Onsite Wastewater Facilities"

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# Appendix A
# Technical Memorandum

Subject: Basis for Wastewater Design Flow
Former US Coast Guard Station Housing Redevelopment
Point Reyes Station, CA

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Sherwood Design Engineers (SDE) has prepared this memorandum to document the basis for the wastewater treatment system capacity for the proposed redevelopment at the Former US Coast Guard Station housing redevelopment project (the site).

## Historical Water Use

A wastewater assessment completed in 1998 reported an approximate wastewater generation rate of 6,500 gpd; however, the report noted that this flow did not represent the site under full occupancy conditions.[1] This wastewater generation rate is equivalent to 54 gpd/bedroom.

The North Marin Water District (NMWD) provided historical water data for the site for the years 1986 through 2020. Electronic water use data from 2004 to 2020 is summarized in Figure 1. The historical data shows a significant reduction in water use near the year 2012, indicating a reduction in occupancy or use at the site. Therefore, this analysis uses data collected between 2004 through 2012 to estimate average and peak water demands on the site.

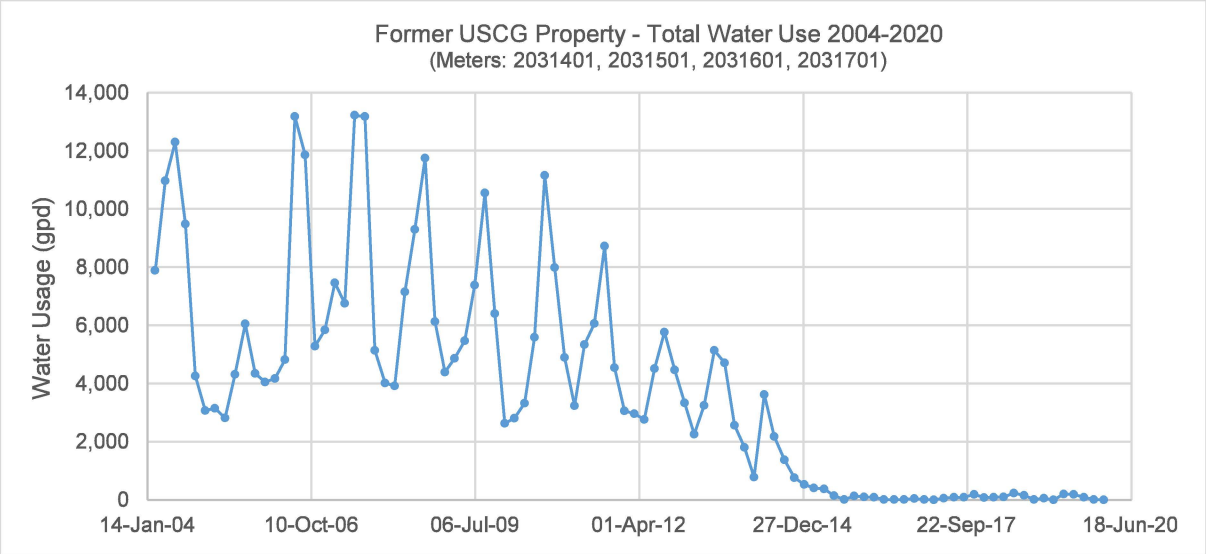



Figure 1. Historical Water Use Data

The average water usage at the site between 2004 and 2012 was 6,253 gallons per day (gpd) and the maximum water demand was approximately 13,000 gpd for this period of record. Seasonal variations exist in the historical data, with lower water demand occurring during the winter months and highest demand in summer months. The average and maximum winter (December – March) water demand between 2004 and 2012 was 4,252 gpd and 7,880 gpd, respectively. These values can be used to

[1] Environmental Science Associates, March 1998 "U.S. Coast Guard Maintenance and Logistics Command Pacific – CAMSPAC Housing Site Wastewater System Upgrade Environmental Assessment"

provide a correlation between indoor water demand and wastewater production for the site. Based on a historic bedroom count of 130, this is equivalent to 33 gpd/bedroom on average and 61 gpd/bedroom in the maximum year.[2]

**Projected Water Use and Design Wastewater System Capacity**

SDE prepared a water use projection to estimate the water demand and wastewater production of the Point Reyes Housing project. The projections are based on the proposed site program and occupancies provided by CLAM and Eden Housing. The proposed project will include housing, a community center, and administrative offices. Table 1 includes a summary the program of the Project.

Table 1. Pt. Reyes Coast Guard Housing Program

| Program Element | Unit | Maximum Day Occupancy |
|---|---|---|
| Residential[1] | | |
| Apartments | bedroom | 15 |
| Townhomes[2] | bedroom | 106 |
| Total | bedroom | 121 |
| Staff and Community Facilities | | |
| Number of staff[3] | FTE | 15 |
| Number of visitors[3] | Visitor | 60 |
| Meals[4] | Meals | 75 |
| 1. Residential program information provided to SDE by Eden Housing on 1/3/2022<br>2. Proposed townhomes: three four-bedroom townhomes, 28 three-bedroom townhomes, and five two-bedroom townhomes.<br>3. "Coast Guard site project description revision and entitlement path" memo sent to SDE by CLAM on 1/11/22<br>4. Sum of staff and visitors | | |

Wastewater flows are calculated based on the full-time residents, employees, daily visitors, and the corresponding unit flows provided by Marin County Regulations. Table 2 provides the basis for determining wastewater flows on based on a full occupancy day.

A wastewater unit flow rate of 65 gpd/bedroom for all residential units was used based on the historical flows identified above and based on discussions with staff from the County Environmental Health Department. This value is above the estimated historical wastewater flow for the site and above the mean and median of US EPA guidance on residential wastewater flows.[3] Unit wastewater flows for employees, visitors, and the kitchen were obtained from Section 601 of Marin County Regulations for Design, Construction, and Repair of Individual Sewage Disposal Systems.

[2] Historical bedroom count provided to SDE by Eden Housing (townhomes had 106 bedrooms, dormitory had 24 beds)
[3] USEPA, February 2002 "Onsite Wastewater Treatment Systems Manual"

Table 2. Wastewater Flow Under Full Occupancy Conditions

| Program Element | Value | Unit Flow | Wastewater Daily Flow (gpd) |
|---|---|---|---|
| Residential | 121 | 65 gpd/bedroom | 7,865 |
| Staff | 15 | 15 gpd/FTE[1] | 225 |
| Visitors | 60 | 5 gpd/visitor[2] | 300 |
| Meals | 75 | 5 gpd/meal[3] | 375 |
| Total | | | 8,765 |

1. Sewage flow volume for "Day workers at schools and offices (per shift)", Section 601 "Marin County Regulations for Design, Construction, and Repair of Individual Sewage Disposal Systems"
2. Sewage flow volume for "Picnic Parks (toilet wastes only), (gallons per picnicker)", Section 601 "Marin County Regulations for Design, Construction, and Repair of Individual Sewage Disposal Systems"
3. Sewage flow volume for "Restaurant (kitchen wastes per meal served)", Section 601 "Marin County Regulations for Design, Construction, and Repair of Individual Sewage Disposal Systems"

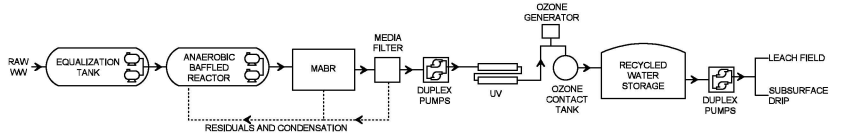
SDE estimates approximately 8,800 gallons per day (gpd) of wastewater will be generated at the project under full occupancy conditions. As an additional precautionary measure, SDE recommends a final design flow of 10,000 gpd, which equates to a factor of safety of 1.1.

The project will likely have lower then estimated wastewater flows once the project is constructed based on several factors, such as all the residential units will be retrofitted with low flow or water-efficient fixtures, the pool and hot tub will be removed, and the galley historically served more meals than what is being proposed.

**Contingency for Large Events**

It is anticipated that the number of visitors will not exceed sixty (60) people during most of the year. However, on a rare occasion the CLAM may host community events with more than 60 visitors. By increasing the design capacity of the wastewater system from 8,800 gpd to 10,000 gpd, the system would be able to support approximately 120 additional visitors, or approximately 180 visitors total. If more than 180 visitors are anticipated, then temporary portable toilets could be brought on site to accommodate this size of event.

During large special events with visitors exceeding 180 visitors, portable toilets could be used to manage sanitary waste and maintain average flows to the onsite wastewater system. The use of portable toilets to manage sanitary waste during infrequent special events has been accommodated at other facilities in Marin County, such as Sprit Rock Meditation Center, and is permitted by the California Regional Water Board.




1 WASTEWATER TREATMENT SCHEMATIC

## DESIGN CRITERIA

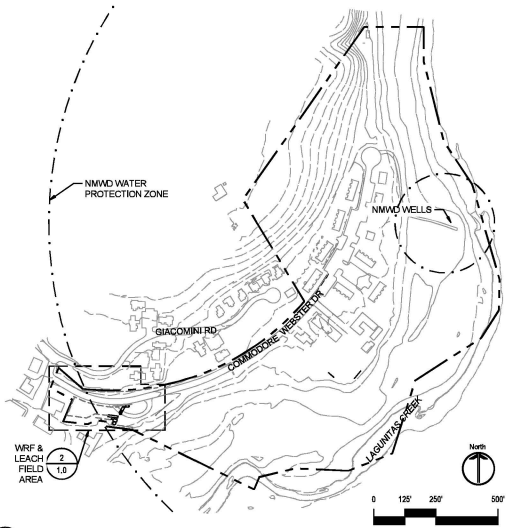
| WASTEWATER PRODUCTION | |
|---|---|
| DESIGN FLOW | 10,000 GPD |

| INFLUENT AND EFFLUENT QUALITY | | | |
|---|---|---|---|
| PARAMETER | UNIT | INFLUENT | EFFLUENT |
| BOD | MG/L | 210 | 10 |
| TSS | MG/L | 210 | 10 |
| TN | MG/L | 35 | 10 |

| DISPOSAL / REUSE ASSUMPTIONS | |
|---|---|
| SOIL APPLICATION RATE | 1.2 GAL/SF-DAY |
| CLIMATE ZONE | 1 |

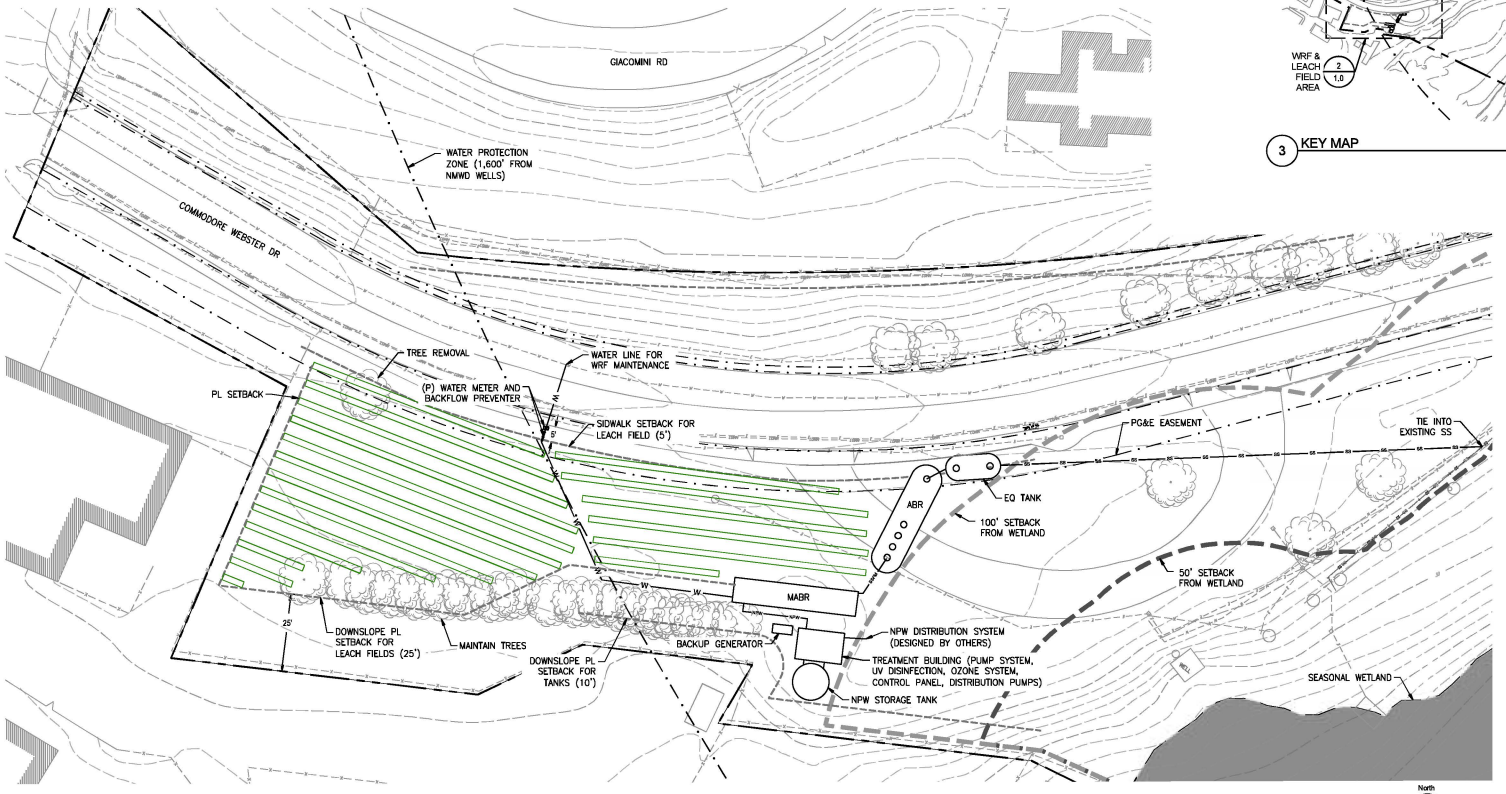
## ACRONYMS

| | |
|---|---|
| ABR | ANAEROBIC BAFFLED REACTOR |
| BOD | BIOCHEMICAL OXYGEN DEMAND |
| ESHA | ENVIRONMENTALLY SENSITIVE HABITAT AREA |
| EQ | EQUALIZATION |
| MABR | MEMBRANE AERATED BIOFILM REACTOR |
| NMWD | NORTH MARIN WATER DISTRICT |
| PL | PROPERTY LINE |
| SSD | SUBSURFACE DRIP |
| TN | TOTAL NITROGEN |
| TSS | TOTAL SUSPENDED SOLIDS |
| WRF | WATER REUSE FACILITY |




3 KEY MAP

SCALE: 1" = 250'




2 WATER REUSE FACILITY AND LEACH FIELD AREA

SCALE: 1" = 20'

## LEGEND

- PROPERTY LINE
- EASEMENT LINE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (E) CREEK
- (E) TREE CANOPY
- NMWD WATER PROTECTION ZONE
- EDGE OF PAVEMENT
- (E) BUILDING
- (E) AC PAVEMENT
- CCC SEASONAL WETLAND
- CORPS SEASONAL WETLAND
- PERENNIAL STREAM
- PURPLE NEEDLEGRASS GRASSLAND
- RIPARIAN WOODLAND
- LEACH LINES
- SETBACK
- EASEMENT

Project Title:

COMMUNITY LAND TRUST OF W. MARIN & EDEN HOUSING, INC.

**POINT REYES HOUSING RENEWAL**

100 COMMODORE WEBSTER DR.
POINT REYES STATION, CA 04956

Design Firm:

Consultant:

SHERWOOD DESIGN ENGINEERS
1525 Seabright Ave
Santa Cruz, CA 95062
www.sherwoodengineers.com

Stamp:

| No. | Description | Date |
|---|---|---|
| | | |

Issue Note:

CONCEPT DESIGN

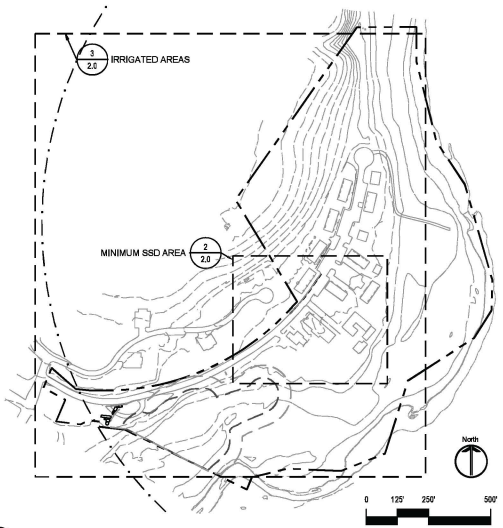
| | |
|---|---|
| Project ID: | PRH |
| File Name: | |
| Drawn by: | KA |
| Checked by: | CC |
| Plot Date: | 6/9/22 |
| Scale: | AS SHOWN |

Sheet Title:

WASTEWATER TREATMENT PLAN

Sheet No.:

WW1.0




1 KEY MAP

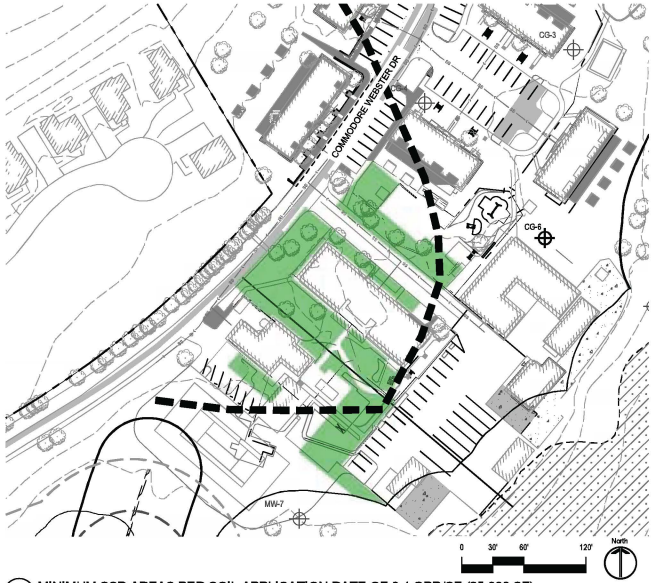
SCALE: 1" = 250'

## LEGEND

- PROPERTY LINE
- EASEMENT LINE
- (E) MAJOR CONTOUR
- (E) MINOR CONTOUR
- (E) CREEK
- (E) TREE CANOPY
- NMWD WATER PROTECTION ZONE
- EDGE OF PAVEMENT
- (E) BUILDING
- (E) AC PAVEMENT
- CCC SEASONAL WETLAND
- CORPS SEASONAL WETLAND
- PERENNIAL STREAM
- PURPLE NEEDLEGRASS GRASSLAND
- RIPARIAN WOODLAND
- SSD OR IRRIGATED AREA
- (E) MONITORING WELL (APPROX.)
- (P) MONITORING WELL
- ESTIMATED TWO-YR TIME OF TRAVEL GROUNDWATER BOUNDARY (QUESTA APPROX.)

## NOTES

1. PROPOSED IRRIGATED AREAS PROVIDED BY BAY TREE DESIGN ON 3/29/22 AND SHOULD ONLY BE INTERPRETED AS CONCEPTUAL.




2 MINIMUM SSD AREAS PER SOIL APPLICATION RATE OF 0.4 GPD/SF (25,000 SF)

SCALE: 1" = 60'




3 IRRIGATED AREAS (121,000 SF, CONCEPTUAL)

SCALE: 1" = 100'

Project Title:

COMMUNITY LAND TRUST OF W. MARIN & EDEN HOUSING, INC.

POINT REYES HOUSING RENEWAL

100 COMMODORE WEBSTER DR.
POINT REYES STATION, CA 04956

Design Firm:

Consultant:

SHERWOOD DESIGN ENGINEERS
1525 Seabright Ave
Santa Cruz, CA 95062
www.sherwoodengineers.com

Stamp:

REGISTERED PROFESSIONAL ENGINEER
PETER H. HOSE
NO. 05 8 5
EXP. 12/31/22
CIVIL
STATE OF CALIFORNIA
PROGRESS PRINT

| No. | Description | Date |
|---|---|---|
| | | |

Issue Note:

CONCEPT DESIGN

| | |
|---|---|
| Project ID: | PRH |
| File Name: | |
| Drawn by: | KA |
| Checked by: | CC |
| Plot Date: | 6/9/22 |
| Scale: | AS SHOWN |

Sheet Title:

SUBSURFACE DRIP PLAN

Sheet No.:

WW2.0

SHERWOOD DESIGN ENGINEERS

**Planning Level Engineer's Estimate of Probable Construction Costs**
Water Reclamation Facility
at
Pt. Reyes Coast Guard Housing
Design Flow: 10,000 gpd

| Item | Description | Quantity | Units | Unit Price | Total Cost | Notes |
|---|---|---|---|---|---|---|
| 1 | **Materials and Installation** | | | | | |
| | **Wastewater Treatment** | | | | | |
| | Equalization Tank | 1 | EA | $52,500 | $52,500 | 5,000 gal, below-ground double-walled fiberglass tank |
| | Anaerobic Baffled Reactor | 1 | EA | $105,000 | $105,000 | 20,000 gal, below-ground double-walled fiberglass tank |
| | Treatment System Pumps | 6 | EA | $3,000 | $18,000 | |
| | Membrane Aerated Bioreactor | 1 | EA | $200,000 | $200,000 | |
| | Tertiary Filtration | 2 | EA | $15,000 | $30,000 | Multi-media filtration |
| | UV Disinfection | 2 | EA | $12,000 | $24,000 | |
| | Ozone System | 1 | EA | $25,000 | $25,000 | Includes generator and contact tank |
| | Control Panel | 1 | EA | $30,000 | $30,000 | |
| | Equpment Shed (10'x12') | 120 | SF | $100 | $12,000 | |
| | Site Work | 40% | | | $199,000 | |
| | Electrical | 15% | | | $74,000 | |
| | Instrumentation & Controls | 20% | | | $99,000 | |
| | **Distribution and Disposal** | | | | | |
| | Non-Potable Recycled Water Storage Tank | 10,000 | GAL | $3.5 | $35,000 | 10,000 gal above-ground HDPE tanks |
| | Distribution Pumps | 2 | EA | $5,000 | $10,000 | |
| | Recycled Water Distribution Piping | 2,000 | LF | $100 | $200,000 | 2" pressurized line |
| | Subsurface Drip Fields | 121,000 | LF | $3.5 | $423,500 | |
| | Leach Fields | 1,390 | LF | $75 | $104,250 | |
| | **Total Direct Costs** | | | | $1,641,250 | |
| 2 | **Markups** | | | | | |
| 2.1 | **General Conditions** | | | | | |
| | Contractor Overhead & Profit | 15% | | | $246,188 | |
| | Mobilization | 2.5% | | | $41,031 | |
| | Permitting Fees | 2.0% | | | $32,825 | |
| 2.2 | **Projects Contingencies** | | | | | |
| | Design Contingency | 2.5% | | | $48,212 | |
| | Construction Contingency | 10% | | | $192,847 | |
| | Owner's Contingency | 2.5% | | | $48,212 | |
| | **Total Cost** | | | | **$2,260,000** | |

# APPENDIX G

# STORMWATER CONTROL PLAN

# FOR A REGULATED PROJECT

# Stormwater Control Plan
# For a Regulated Project
# Point Reyes Station Housing Renewal

July 28, 2022

Revised March 10, 2023

Prepared by:

SHERWOOD
DESIGN ENGINEERS

625 2nd Street, Ste 202, Petaluma, CA 94952

415-677-7300

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## Attachments

Stormwater Control Plan Exhibit A

This Stormwater Control Plan was prepared using the template dated October 2018.

## I. Project Data

| | |
|---|---|
| Project Name/Number | Point Reyes Station Housing Renewal |
| Application Submittal Date | 07/29/2022 |
| Project Location | 100 Commodore Webster Dr, Point Reyes Station, CA 94956 |
| Project Phase No. | N/A |
| Project Type and Description | Demolition of outbuildings; renovation of existing residential buildings; refinishing asphalt and concrete; construction of decks and outdoor classroom; new pathways for improved accessibility; modification to existing drainage system and landscaping |
| Total Project Site Area (acres) | 7.47 acres |
| Total New and Replaced Impervious Surface Area | 27,756 square feet |
| Total Pre-Project Impervious Surface Area | 186,136 square feet |
| Total Post-Project Impervious Surface Area | 188,010 square feet |

## II. Setting

II.A. Project Location and Description

The proposed project involves the rehabilitation of an existing residential development at Point Reyes Coast Guard Housing located at 100 Commodore Webster Drive near Point Reyes Station in unincorporated Marin County, California. The site was previously owned by the United States Coast Guard, and in 2014 was purchased by the Community Land rust of West Marin to be converted to affordable housing. The project site is at the terminus of Commodore Webster Drive, east of its intersection with Mesa Road, as shown on the Vicinity Map (Figure 1), approximately one-quarter mile east of downtown Point Reyes Station.

The programmed site is relatively level with adjacent hillsides to the North and downward-sloping embankments toward Lagunitas Creek. It is currently occupied by 10 at-grade, wood-framed, two- to three-story townhome buildings and two administrative buildings, as well as paved parking lots and landscaped areas. The existing townhomes on the site will be remodeled, and 15 additional one-bedroom apartments will be added in the former barracks building. The existing coast guard offices will be converted to a community room run by CLAM and office space for the residential property manager, Eden Housing Inc. The former galley will be converted to a community-focused education institute, and will include a maker space, outdoor classrooms, and a lending library. Other proposed improvements include improvements to wastewater treatment facilities, constructing additional community spaces, and upgrading outdoor common spaces, roadways, pedestrian paths, and sidewalks.

The site is bounded to the south and east by the appropriate setbacks from Lagunitas Creek. The northern boundary is the property line, and the western boundary is the termination of Commodore Webster Drive.

The proposed use of the project is consistent with current use zoning. This project is considered a regulated project according to the BASMAA Post-Construction Manual because it creates or replaces more than 5,000 square feet of impervious surface. Therefore, it must be designed to comply with Provision E.12 under the statewide Phase II municipal stormwater NPDES permit reissued by the California State Water Resources Control Board in 2013. The project will implement runoff reduction measures including limiting clearing, grading, and soil compaction, minimizing impervious surfaces, conserving natural areas, complying with ESHA buffer requirements, and using a combination of LID and BMPs to significantly improve the water quality of runoff from the site compared to existing conditions. Utilizing existing underground infrastructure where possible, storm drain outlet pipes in a number of locations will be intercepted and routed to new bioretention facilities in order to provide treatment of not only the new impervious surfaces, but existing as well. Furthermore, there will be a conversion of an existing mulched playground into a self-retaining area that will accept runoff from the uphill site by means of a cutoff swale to allow for infiltration into the ground rather than direct discharge into Lagunitas Creek.

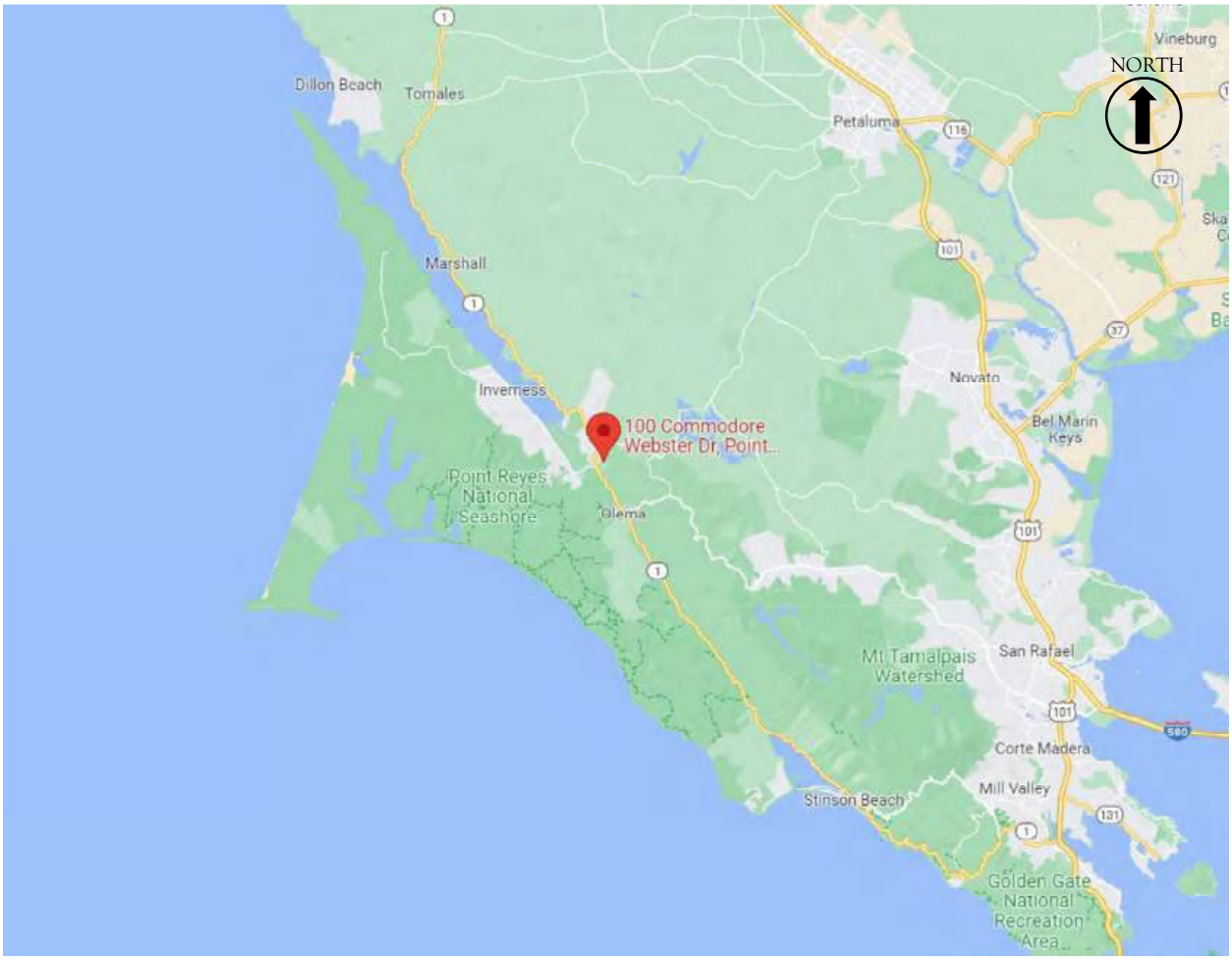



Figure 1: Vicinity Map

II.B. Existing Site Features and Conditions

The existing site (see Figure 2) is predominantly 12 low-rise residential and administrative buildings, with associated paving. Commodore Webster Drive is a narrow street with one lane in each direction, connecting every building to Mesa Road. North of Commodore Webster Drive are a small number of residential buildings and agricultural fields. Topographically, the site is characterized by its position on a hillside. To the northwest, the surrounding grade slopes up at approximately 7:1. To the southeast, the land slopes down at approximate 8:1 to Lagunitas Creek. The existing development itself also slopes towards Lagunitas Creek at a grade of about 2.5%.

Under existing conditions, site drainage is characterized by existing stormwater inlets conveying directly to outfalls into the riparian areas that eventually lead into Lagunitas Creek. There is currently no treatment of runoff prior to outfall.

The soil is approximately 60% xerorthents and 40% Cortina, which is a gravelly sandy loam. It has a hydrologic rating of A, meaning that it has a low runoff potential, and very good infiltration. The Cortina unit is primarily located north of Commodore Webster Drive, where only minor work is taking place. The majority of work will occur on xerorthents.




Figure 2: Existing Site Conditions

II.C. Opportunities and Constraints for Stormwater Control

The primary opportunity comes from the site's existing topography. Because the entire site slopes towards Lagunitas Creek, it will be straightforward to install swales, bioretention facilities, and self-retaining areas that can intercept water without significant grading or piping infrastructure. This provides opportunities to not only treat runoff from the new impervious areas, but to also mitigate for existing conditions, thus significantly improving water quality of runoff entering Lagunitas Creek The owner's intended use also means that many existing impervious areas will be either removed entirely or resurfaced with impervious materials that allow for better management.

The most constraining aspects of the site are the ESHA boundaries around Lagunitas Creek. Because the site is so close to the creek itself, runoff must be captured sooner along its path than later to minimize construction and disturbance within the creek's protection area.

## III. Low Impact Development Design Strategies

### III.A. Optimization of Site Layout

The site will remain largely unchanged from its existing state in its general layout. Buildings and walkways will be renovated to comply with code and accessibility requirements, but the majority of new impervious area is compensated for by the removal of existing impervious surface.

#### III.A.1. Limitation of development envelope

Improvements outside the existing site envelope have been minimized to limit unnecessary development. The primary boundaries are the property line to the north and west, and the flood and environmental boundaries of Lagunitas Creek to the south and east.

#### III.A.2. Preservation of natural drainage features

The immediate site currently has no natural drainage features, however there are a number of wetlands toward the southeast and south west edges of the site that currently receive waters from the existing upland development. Improved water quality via new treatment measures will improve the health of these features.

#### III.A.3. Setbacks from creeks, wetlands, and riparian habitats

The proposed development has been specifically designed to avoid construction within the setbacks associated with Lagunitas Creek, the only adjacent body of water. ESHA boundaries have been mapped by a Biologist and are incorporated into the base mapping of the project.

#### III.A.4. Minimization of imperviousness

To the extent possible, imperviousness of the site is minimized by removing portions of unused pavement, tennis court and outbuildings, and incorporating new drought-tolerant landscaping throughout the developed site. Some impervious surfaces have been added to improve accessibility for residents throughout the site, however most new pathways are surrounded by landscaping to allow for direct runoff into adjacent landscaping.

#### III.A.5. Use of drainage as a design element

Drainage is used as a design element on this site in the form of bioretention facilities, which are functional, enhanced plantings that contribute aesthetically to the landscaping of the site. There is a proposed "demonstration rain garden" next to the new community center which will be used for teaching the community about stormwater management and protection of our waters.

### III.B. Use of Permeable Pavements

Impervious surfaces that are not intended for vehicular traffic or regular pedestrian traffic, such as the outdoor classroom to the southwest, will be surfaced with a compacted gravel surface. While not entirely permeable, this type of surface introduces less contaminants into runoff than asphaltic concrete. For the purposes of stormwater calculations, it will be considered impervious.

### III.C. Dispersal of Runoff to Pervious Areas

Where possible, stormwater runoff will be directed along a pervious path to one of the two self-retaining areas or the five bioretention facilities. Both existing and proposed inlets will also capture runoff and deposit it in one of the bioretention facilities.

III.D. Stormwater Control Measures

Runoff from the majority of impervious surfaces, both existing and proposed, and some of the pervious, non-self-treating surfaces, will be routed to one of five on-site bioretention facilities or a self-retaining area (see Attachment A). The bioretention facilities (see Figure 3) will be constructed in accordance with the guidelines provided in the BASMAA Post-Construction Manual, including the following:

- Each layer of the bioretention facility will be built flat and level. The following layers will have consistent elevations throughout the facility:
    - Bottom of Gravel Layer
    - Top of Gravel Storage Layer
    - Top of Soil Layer
    - Rim of Facility Reservoir
- 12 inches of Class 2 permeable, Caltrans specification 68-2.02F(3) used for the gravel layer
- 18 inches of a sand/compost mix per the BASMAA specifications provided for the planting medium
- 6-inch-deep reservoir between top of soil elevation and overflow grate elevation
- Plantings selected for water conservation
- Irrigation system on a separate zone, with drip emitters and "smart" irrigation controllers
- Sign identifying the facility as a separate stormwater treatment facility

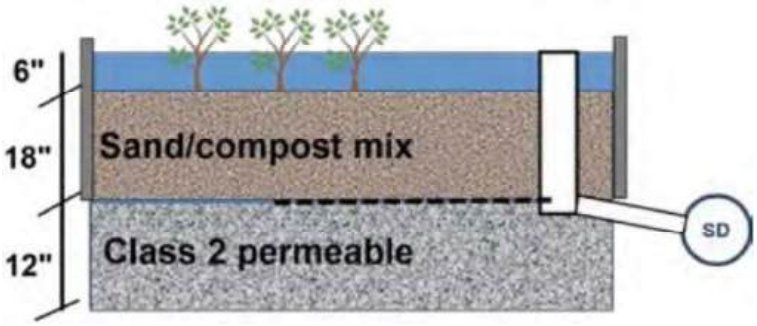



Figure 3: Bioretention Facility Schematic *(source: BASMAA Post-Construction Manual)*

## IV. Documentation of Drainage Design

IV.A. Descriptions of Each Drainage Management Area

IV.A.1. Tables of Drainage Management Areas

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 1.01 | Paving | 27 | SR-1 | Pedestrian hardscape |
| 1.02 | Landscaping | 15,017 | SR-1 | Existing planting; proposed planting and rock mulch |
| 1.03 | Roofs and Paving | 95 | SR-1 | Existing trash enclosure with associated paving |
| 1.04 | Roofs and Paving | 1,313 | SR-1 | Residential building roof with associated paving; minor resurfacing |
| 1.05 | Roofs and Paving | 2,361 | SR-1 | Residential building roof with associated paving; minor resurfacing |
| 1.06 | Paving | 903 | SR-1 | Community garden: pedestrian hardscape |
| SR-1 / 1.07 | Self-Retaining | 5,992 | Self | Self-retaining area; formerly a playground |
| 1.08 | Roofs and Paving | 94 | SR-1 | Residential shed |
| 1.09 | Paving | 1,535 | SR-1 | Pedestrian hardscape |
| 1.10 | Landscaping | 5,086 | SR-1 | Existing planting; proposed planting and rock mulch |
| 1.11 | Roofs and Paving | 1,385 | SR-1 | Residential building roof with associated paving; minor resurfacing |
| 1.12 | Roofs and Paving | 2,725 | SR-1 | Residential building roof with associated paving; minor resurfacing |
| 1.13 | Roofs and Paving | 864 | SR-1 | Residential building roof with associated paving; minor resurfacing |
| 1.14 | Landscaping | 118 | SR-1 | Existing planting; proposed planting and rock mulch |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 2.01 | Roofs and Paving | 31,114 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.02 | Self-Treating | 33,807 | Self-Treating | Existing planting, untouched |
| 2.03 | Landscaping | 83 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.04 | Paving | 633 | Offsite | Pedestrian hardscape |
| 2.05 | Landscaping | 293 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.06 | Landscaping | 1,205 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.07 | Roofs and Paving | 100 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.08 | Landscaping | 1,164 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.09 | Landscaping | 76 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.10 | Roofs and Paving | 906 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.11 | Landscaping | 886 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.12 | Paving | 156 | Offsite | Pedestrian hardscape |
| 2.13 | Roofs and Paving | 4,131 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.14 | Landscaping | 3,656 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.15 | Roofs and Paving | 90 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.16 | Roofs and Paving | 93 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.17 | Roofs and Paving | 94 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.18 | Paving | 539 | Offsite | Pedestrian hardscape |

| | | | | |
|---|---|---|---|---|
| 2.19 | Landscaping | 478 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.20 | Roofs and Paving | 1,713 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.21 | Landscaping | 343 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.22 | Landscaping | 350 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.23 | Roofs and Paving | 4,453 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.24 | Landscaping | 167 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.25 | Landscaping | 229 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.26 | Landscaping | 108 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.27 | Paving | 158 | Offsite | Pedestrian hardscape |
| 2.28 | Landscaping | 285 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.29 | Paving | 150 | Offsite | Pedestrian hardscape |
| 2.30 | Landscaping | 379 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.31 | Paving | 2,174 | Offsite | Pedestrian hardscape |
| 2.32 | Landscaping | 55 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.33 | Landscaping | 796 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.34 | Landscaping | 134 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.35 | Landscaping | 830 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.36 | Roofs and Paving | 692 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.37 | Landscaping | 1,529 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.38 | Landscaping | 351 | Offsite | Existing planting; proposed planting and rock mulch |

| | | | | |
|---|---|---|---|---|
| 2.39 | Landscaping | 1,166 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.40 | Landscaping | 2,708 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.41 | Roofs and Paving | 4,412 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.42 | Landscaping | 115 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.43 | Landscaping | 104 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.44 | Landscaping | 96 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.45 | Paving | 154 | Offsite | Pedestrian hardscape |
| 2.46 | Landscaping | 311 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.47 | Paving | 172 | Offsite | Pedestrian hardscape |
| 2.48 | Landscaping | 2,187 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.49 | Landscaping | 193 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.50 | Roofs and Paving | 5,157 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.51 | Landscaping | 502 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.52 | Landscaping | 508 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.53 | Landscaping | 502 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.54 | Landscaping | 191 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.55 | Paving | 67 | Offsite | Pedestrian hardscape |
| 2.56 | Paving | 68 | Offsite | Pedestrian hardscape |
| 2.57 | Landscaping | 195 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.58 | Paving | 64 | Offsite | Pedestrian hardscape |
| 2.59 | Landscaping | 198 | Offsite | Existing planting; proposed planting and rock mulch |

| | | | | |
|---|---|---|---|---|
| 2.60 | Paving | 65 | Offsite | Pedestrian hardscape |
| 2.61 | Roofs and Paving | 249 | Offsite | Residential building roof with associated paving; minor resurfacing |
| 2.62 | Landscaping | 200 | Offsite | Existing planting; proposed planting and rock mulch |
| 2.63 | Paving | 25 | Offsite | Pedestrian hardscape |
| 2.64 | Roofs and Paving | 238 | Offsite | Residential building roof with associated paving; minor resurfacing |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 3.01 | Roofs and Paving | 1,549 | RG-5 | Residential building roof with associated paving; minor resurfacing |
| 3.02 | Paving | 4,162 | RG-5 | Pedestrian hardscape |
| 3.03 | Landscaping | 115 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.04 | Landscaping | 66 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.05 | Roofs and Paving | 7,654 | RG-5 | Existing driveway and parking lot; minor resurfacing |
| 3.06 | Landscaping | 266 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.07 | Landscaping | 105 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.08 | Landscaping | 555 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.09 | Landscaping | 775 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.10 | Landscaping | 649 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.11 | Landscaping | 963 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.12 | Landscaping | 662 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.13 | Roofs and Paving | 1,578 | RG-5 | Residential building roof with associated paving; minor resurfacing |
| 3.14 | Landscaping | 1,430 | RG-5 | Existing planting; proposed planting and rock mulch |
| RG-5 / 3.15 | Bioretention | 750 | Self | Depressed rain garden |
| 3.16 | Landscaping | 95 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.17 | Roofs and Paving | 1,750 | RG-5 | Residential building roof with associated paving; minor resurfacing |
| 3.18 | Landscaping | 447 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.19 | Landscaping | 24 | RG-5 | Existing planting; proposed planting and rock mulch |
| 3.20 | Landscaping | 57 | RG-5 | Existing planting; proposed planting and rock mulch |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 4.01 | Roofs and Paving | 3,713 | RG-4 | Residential building roof with associated paving; minor resurfacing |
| 4.02 | Landscaping | 10,847 | RG-4 | Existing planting; proposed planting and rock mulch |
| 4.03 | Roofs and Paving | 96 | RG-4 | Accessory structure |
| 4.04 | Paving | 263 | RG-4 | Pedestrian hardscape |
| 4.05 | Landscaping | 38 | RG-4 | Existing planting; proposed planting and rock mulch |
| 4.06 | Roofs and Paving | 1,340 | RG-4 | Residential building roof with associated paving; minor resurfacing |
| RG-4 / 4.07 | Bioretention | 620 | Self | Depressed rain garden |
| 4.08 | Paving | 239 | RG-4 | Pedestrian hardscape |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 5.01 | Roofs and Paving | 1,942 | RG-3 | Residential building roof with associated paving; minor resurfacing |
| 5.02 | Landscaping | 5,699 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.03 | Paving | 3,471 | RG-3 | Pedestrian hardscape |
| 5.04 | Landscaping | 3,276 | RG-3 | Playground |
| 5.05 | Landscaping | 342 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.06 | Landscaping | 247 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.07 | Landscaping | 1,330 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.08 | Roofs and Paving | 12,310 | RG-3 | Existing driveway and portion of parking lot; minor resurfacing |
| 5.09 | Landscaping | 459 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.10 | Paving | 90 | RG-3 | Pedestrian hardscape |
| 5.11 | Roofs and Paving | 2,566 | RG-3 | Residential building roof with associated paving; minor resurfacing |
| 5.12 | Roofs and Paving | 3,677 | RG-3 | Residential building roof with associated paving; minor resurfacing |
| 5.13 | Paving | 1,754 | RG-3 | Pedestrian hardscape |
| 5.14 | Roofs and Paving | 439 | RG-3 | Residential building roof with associated paving; minor resurfacing |
| 5.15 | Paving | 226 | RG-3 | Proposed trash enclosure |
| 5.16 | Roofs and Paving | 275 | RG-3 | Residential building roof with associated paving; minor resurfacing |
| 5.17 | Landscaping | 150 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.18 | Landscaping | 140 | RG-3 | Existing planting; proposed planting and rock mulch |

| | | | | |
|---|---|---|---|---|
| 5.19 | Landscaping | 4,448 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.20 | Roofs and Paving | 1,365 | RG-3 | Maintenance building roof with associated paving; minor resurfacing |
| 5.21 | Roofs and Paving | 105 | RG-3 | Residential building roof with associated paving; minor resurfacing |
| RG-3 / 5.22 | Bioretention | 1,310 | Self | Depressed rain garden |
| 5.23 | Landscaping | 500 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.24 | Landscaping | 75 | RG-3 | Existing planting; proposed planting and rock mulch |
| 5.25 | Paving | 12 | RG-3 | Pedestrian hardscape |
| 5.26 | Landscaping | 534 | RG-3 | Existing planting; proposed planting and rock mulch |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 6.01 | Paving | 4,916 | Offsite | Existing asphalt road |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 7.01 | Roofs and Paving | 1,933 | RG-6 | Residential building roof with associated paving; minor resurfacing |
| 7.02 | Paving | 1,177 | RG-6 | Pedestrian hardscape |
| 7.03 | Roofs and Paving | 3,011 | RG-6 | Residential building roof with associated paving; minor resurfacing |
| 7.04 | Roofs and Paving | 2,010 | RG-6 | Residential building roof with associated paving; minor resurfacing |
| 7.05 | Landscaping | 155 | RG-6 | Existing planting; proposed planting and rock mulch |
| 7.06 | Roofs and Paving | 516 | RG-6 | Residential building roof with associated paving; minor resurfacing |
| RG-6 / 7.07 | Bioretention | 370 | Self | Depressed rain garden |
| 7.08 | Landscaping | 203 | RG-6 | Existing planting; proposed planting and rock mulch |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 8.01 | Roofs and Paving | 1,530 | RG-2 | Residential building roof with associated paving; minor resurfacing |
| 8.02 | Landscaping | 658 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.03 | Paving | 2,952 | RG-2 | Pedestrian hardscape |
| 8.04 | Landscaping | 231 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.05 | Roofs and Paving | 526 | RG-2 | Residential building roof with associated paving; minor resurfacing |
| 8.06 | Landscaping | 1,202 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.07 | Landscaping | 14 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.08 | Landscaping | 51 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.09 | Landscaping | 344 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.10 | Landscaping | 189 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.11 | Roofs and Paving | 10,368 | RG-2 | Existing parking lot; minor resurfacing |
| 8.12 | Landscaping | 101 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.13 | Landscaping | 1,724 | RG-2 | Existing planting; proposed planting and rock mulch |
| 8.14 | Landscaping | 153 | RG-2 | Existing planting; proposed planting and rock mulch |
| RG-2 / 8.15 | Bioretention | 700 | Self | Depressed rain garden |
| 8.16 | Roofs and Paving | 833 | RG-2 | Existing parking lot; minor resurfacing |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 9.01 | Landscaping | 77 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.02 | Roofs and Paving | 2,238 | RG-1 | Residential building roof with associated paving; minor resurfacing |
| 9.03 | Roofs and Paving | 2,814 | RG-1 | Residential building roof with associated paving; minor resurfacing |
| 9.04 | Landscaping | 16 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.05 | Landscaping | 48 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.06 | Paving | 3,683 | RG-1 | Pedestrian hardscape; outdoor education area |
| 9.07 | Landscaping | 256 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.08 | Landscaping | 443 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.09 | Landscaping | 2,596 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.10 | Landscaping | 1,131 | RG-1 | Existing planting; proposed planting and rock mulch |
| 9.11 | Landscaping | 923 | RG-1 | Existing planting; proposed planting and rock mulch |
| RG-1 / 9.12 | Bioretention | 380 | Self | Depressed rain garden; demonstration area |
| 9.13 | Paving | 120 | RG-1 | Pedestrian hardscape |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 10.01 | Paving | 213 | Offsite | Pedestrian hardscape; outdoor education area |
| 10.02 | Self-Treating | 13,545 | Self-Treating | Existing planting, untouched |

| DMA Name | Surface Type | Area (square feet) | Drains to: | Description |
|---|---|---|---|---|
| 11 | Paving | 21,885 | Offsite | Existing asphalt road |

IV.B. Tabulation and Sizing Calculations

IV.B.1. Information Summary for Bioretention Facility Design

| **Total Project Area (square feet)** | **325,550** |
|---|---|
| DMA-1 | 37,515 |
| DMA-2 | 114,246 |
| DMA-3 | 23,651 |
| DMA-4 | 17,156 |
| DMA-5 | 46,743 |
| DMA-6 | 4,916 |
| DMA-7 | 9,375 |
| DMA-8 | 21,577 |
| DMA-9 | 14,727 |
| DMA-10 | 13,759 |
| DMA-11 | 21,885 |

IV.B.2. Self-Treating Areas

| **DMA Name** | **Area (Square Feet)** |
|---|---|
| 2.02 | 28,892 |
| 10.02 | 13,545 |

IV.B.3. Self-Retaining Areas

| **DMA Name** | **Area (Square Feet)** |
|---|---|
| SR-1 / 1.07 | 5,992 |

IV.B.4. Areas Draining to Self-Retaining Areas

| DMA Name | Area (square feet) | Post-project surface type | Runoff factor | Product (Area x runoff factor) [A] | Receiving self-retaining DMA | Receiving self-retaining DMA Area (square feet) [B] | Ratio [A]/[B] |
|---|---|---|---|---|---|---|---|
| 1.01 | 27 | Paving | 1.0 | 27 | SR-1 | 5,992 | 0.00 |
| 1.02 | 15,020 | Landscaping | 0.1 | 1,502 | SR-1 | 5,992 | 0.25 |
| 1.03 | 95 | Roofs and Paving | 1.0 | 95 | SR-1 | 5,992 | 0.02 |
| 1.04 | 1,338 | Roofs and Paving | 1.0 | 1,338 | SR-1 | 5,992 | 0.22 |
| 1.05 | 2,361 | Roofs and Paving | 1.0 | 2,361 | SR-1 | 5,992 | 0.39 |
| 1.06 | 903 | Paving | 1.0 | 903 | SR-1 | 5,992 | 0.15 |
| 1.08 | 94 | Roofs and Paving | 1.0 | 94 | SR-1 | 5,992 | 0.02 |
| 1.09 | 1,535 | Paving | 1.0 | 1,535 | SR-1 | 5,992 | 0.26 |
| 1.10 | 5,086 | Landscaping | 0.1 | 509 | SR-2 | 5,992 | 0.08 |
| 1.11 | 1,385 | Roofs and Paving | 1.0 | 1,385 | SR-2 | 5,992 | 0.23 |
| 1.12 | 2,725 | Roofs and Paving | 1.0 | 2,725 | SR-2 | 5,992 | 0.45 |
| 1.13 | 864 | Roofs and Paving | 1.0 | 864 | SR-2 | 5,992 | 0.14 |
| 1.14 | 118 | Landscaping | 0.1 | 12 | SR-2 | 5,992 | 0.00 |

IV.B.5. Areas Draining to Bioretention Facilities

| RG-1 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DMA Name** | **DMA Area (square feet)** | **Post-Project Surface Type** | **DMA Runoff Factor** | **DMA Area x Runoff Factor** | **Sizing Factor** | **Minimum Facility Size** | **Proposed Facility Size** |
| 9.01 | 77 | Landscaping | 0.1 | 8 | | | |
| 9.02 | 2,238 | Roofs and Paving | 1.0 | 2,238 | | | |
| 9.03 | 2,814 | Roofs and Paving | 1.0 | 2,814 | | | |
| 9.04 | 16 | Landscaping | 0.1 | 2 | | | |
| 9.05 | 48 | Landscaping | 0.1 | 5 | | | |
| 9.06 | 3,683 | Paving | 1.0 | 3,683 | | | |
| 9.07 | 256 | Landscaping | 0.1 | 26 | | | |
| 9.08 | 443 | Landscaping | 0.1 | 44 | | | |
| 9.09 | 2,596 | Landscaping | 0.1 | 260 | | | |
| 9.10 | 1,131 | Landscaping | 0.1 | 113 | | | |
| 9.11 | 923 | Landscaping | 0.1 | 92 | | | |
| 9.13 | 120 | Paving | 1.0 | 120 | | | |
| 9.01 | 77 | Landscaping | 0.1 | 8 | | | |
| **Total** | | | | 9,404 | 0.04 | 376 | 380 |

| RG-2 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DMA Name** | **DMA Area (square feet)** | **Post-Project Surface Type** | **DMA Runoff Factor** | **DMA Area x Runoff Factor** | **Sizing Factor** | **Minimum Facility Size** | **Proposed Facility Size** |
| 8.01 | 1,530 | Roofs and Paving | 1.0 | 1,530 | | | |
| 8.02 | 658 | Landscaping | 0.1 | 66 | | | |
| 8.03 | 2,952 | Paving | 1.0 | 2,952 | | | |
| 8.04 | 231 | Landscaping | 0.1 | 23 | | | |
| 8.05 | 526 | Roofs and Paving | 1.0 | 526 | | | |
| 8.06 | 1,202 | Landscaping | 0.1 | 120 | | | |
| 8.07 | 14 | Landscaping | 0.1 | 1 | | | |
| 8.08 | 51 | Landscaping | 0.1 | 5 | | | |
| 8.09 | 344 | Landscaping | 0.1 | 34 | | | |
| 8.10 | 189 | Landscaping | 0.1 | 19 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8.11 | 10,368 | Roofs and Paving | 1.0 | 10,368 | | | |
| 8.12 | 101 | Landscaping | 0.1 | 10 | | | |
| 8.13 | 1,724 | Landscaping | 0.1 | 172 | | | |
| 8.14 | 153 | Landscaping | 0.1 | 15 | | | |
| 8.16 | 833 | Roofs and Paving | 1.0 | 833 | | | |
| 8.01 | 1,530 | Roofs and Paving | 1.0 | 1,530 | | | |
| 8.02 | 658 | Landscaping | 0.1 | 66 | | | |
| **Total** | | | | 16,677 | 0.04 | 667 | 700 |

| RG-3 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DMA Name** | **DMA Area (square feet)** | **Post-Project Surface Type** | **DMA Runoff Factor** | **DMA Area x Runoff Factor** | **Sizing Factor** | **Minimum Facility Size** | **Proposed Facility Size** |
| 5.01 | 1,942 | Roofs and Paving | 1.0 | 1,942 | | | |
| 5.02 | 5,699 | Landscaping | 0.1 | 570 | | | |
| 5.03 | 3,471 | Paving | 1.0 | 3,471 | | | |
| 5.04 | 3,276 | Landscaping | 0.1 | 328 | | | |
| 5.05 | 342 | Landscaping | 0.1 | 34 | | | |
| 5.06 | 247 | Landscaping | 0.1 | 25 | | | |
| 5.07 | 1,330 | Landscaping | 0.1 | 133 | | | |
| 5.08 | 12,310 | Roofs and Paving | 1.0 | 12,310 | | | |
| 5.09 | 459 | Landscaping | 0.1 | 46 | | | |
| 5.10 | 90 | Paving | 1.0 | 90 | | | |
| 5.11 | 2,566 | Roofs and Paving | 1.0 | 2,566 | | | |
| 5.12 | 3,677 | Roofs and Paving | 1.0 | 3,677 | | | |
| 5.13 | 1,754 | Paving | 1.0 | 1,754 | | | |
| 5.14 | 439 | Roofs and Paving | 1.0 | 439 | | | |
| 5.15 | 226 | Paving | 1.0 | 226 | | | |
| 5.16 | 275 | Roofs and Paving | 1.0 | 275 | | | |
| 5.17 | 150 | Landscaping | 0.1 | 15 | | | |
| 5.18 | 140 | Landscaping | 0.1 | 14 | | | |
| 5.19 | 4,448 | Landscaping | 0.1 | 445 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 5.2 | 1,365 | Roofs and Paving | 1.0 | 1,365 | | | |
| 5.21 | 105 | Roofs and Paving | 1.0 | 105 | | | |
| 5.23 | 500 | Landscaping | 0.1 | 50 | | | |
| 5.24 | 75 | Landscaping | 0.1 | 8 | | | |
| 5.25 | 12 | Paving | 1.0 | 12 | | | |
| 5.26 | 534 | Landscaping | 0.1 | 53 | | | |
| **Total** | | | | 29,953 | 0.04 | 1,198 | 1,310 |

| **RG-4** | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DMA Name** | **DMA Area (square feet)** | **Post-Project Surface Type** | **DMA Runoff Factor** | **DMA Area x Runoff Factor** | **Sizing Factor** | **Minimum Facility Size** | **Proposed Facility Size** |
| 4.01 | 3,713 | Roofs and Paving | 1.0 | 3,713 | | | |
| 4.02 | 10,847 | Landscaping | 0.1 | 1,085 | | | |
| 4.03 | 96 | Roofs and Paving | 1.0 | 96 | | | |
| 4.04 | 263 | Paving | 1.0 | 263 | | | |
| 4.05 | 38 | Landscaping | 0.1 | 4 | | | |
| 4.06 | 1,340 | Roofs and Paving | 1.0 | 1,340 | | | |
| 4.08 | 239 | Paving | 1.0 | 239 | | | |
| **Total** | | | | 6,740 | 0.04 | 270 | 620 |

| RG-5 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DMA Name** | **DMA Area (square feet)** | **Post-Project Surface Type** | **DMA Runoff Factor** | **DMA Area x Runoff Factor** | **Sizing Factor** | **Minimum Facility Size** | **Proposed Facility Size** |
| 3.01 | 1,549 | Roofs and Paving | 1.0 | 1,549 | | | |
| 3.02 | 4,162 | Paving | 1.0 | 4,162 | | | |
| 3.03 | 115 | Landscaping | 0.1 | 12 | | | |
| 3.04 | 66 | Landscaping | 0.1 | 7 | | | |
| 3.05 | 7,654 | Roofs and Paving | 1.0 | 7,654 | | | |
| 3.06 | 266 | Landscaping | 0.1 | 27 | | | |
| 3.07 | 105 | Landscaping | 0.1 | 10 | | | |
| 3.08 | 555 | Landscaping | 0.1 | 56 | | | |
| 3.09 | 775 | Landscaping | 0.1 | 77 | | | |
| 3.10 | 649 | Landscaping | 0.1 | 65 | | | |
| 3.11 | 963 | Landscaping | 0.1 | 96 | | | |
| 3.12 | 662 | Landscaping | 0.1 | 66 | | | |
| 3.13 | 1,578 | Roofs and Paving | 1.0 | 1,578 | | | |
| 3.14 | 1,430 | Landscaping | 0.1 | 143 | | | |
| 3.16 | 95 | Landscaping | 0.1 | 9 | | | |
| 3.17 | 1,750 | Roofs and Paving | 1.0 | 1,750 | | | |
| 3.18 | 447 | Landscaping | 0.1 | 45 | | | |
| 3.19 | 24 | Landscaping | 0.1 | 2 | | | |
| 3.20 | 57 | Landscaping | 0.1 | 6 | | | |
| **Total** | | | | 17,314 | 0.04 | 693 | 749 |

| RG-6 | | | | | | | |
|---|---|---|---|---|---|---|---|
| **DMA Name** | **DMA Area (square feet)** | **Post-Project Surface Type** | **DMA Runoff Factor** | **DMA Area x Runoff Factor** | **Sizing Factor** | **Minimum Facility Size** | **Proposed Facility Size** |
| 7.01 | 1,933 | Roofs and Paving | 1.0 | 1,933 | | | |
| 7.02 | 1,177 | Paving | 1.0 | 1,177 | | | |
| 7.03 | 3,011 | Roofs and Paving | 1.0 | 3,011 | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7.04 | 2,010 | Roofs and Paving | 1.0 | 2,010 | | | |
| 7.05 | 155 | Landscaping | 0.1 | 16 | | | |
| 7.06 | 516 | Roofs and Paving | 1.0 | 516 | | | |
| 7.08 | 203 | Landscaping | 0.1 | 20 | | | |
| **Total** | | | | 8,683 | 0.04 | 347 | 370 |

## V. Source Control Measures

V.A. Site activities and potential sources of pollutants

On-site activities that could potentially produce stormwater pollutants include:

- On-site storm drain inlets
- Paved driveways and walkways
- Landscape maintenance
- Solid waste management

V.B. Source Control Table

| Potential source of runoff pollutants | Permanent source control BMPs | Operational source control BMPs |
|---|---|---|
| On-site storm drain inlets | All inlets will be marked with the words "No Dumping! Flows to Creek" or similar. | Inlet markings will be maintained and periodically repainted or replaced.<br>Stormwater pollution prevention information will be provided to all site owners, representatives, and residents.<br>Leases will include the following agreement: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains." |
| Paved driveways and walkways | | Plazas, sidewalks, and parking lots should be swept regularly to prevent accumulation of litter and debris. Debris from pressure washing will be collected to prevent entry into the storm drain system. |
| Landscape maintenance | Existing native trees, shrubs, and ground cover will be preserved to the maximum extent possible.<br>Landscaping will be designed to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution.<br>Landscaped areas used to retain or detain stormwater will have plants that are tolerant of saturated soil conditions.<br>Pest-resistant plants will be used where appropriate, especially when adjacent to hardscape.<br>Plants appropriate to site soils, slope, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions will be selected. | Landscaping will be maintained using minimum or no pesticides.<br>Integrated Pest Management (IPM) information will be provided to owners and operators. |

| | | |
|---|---|---|
| Solid waste management areas | All drain inlets in covered trash enclosures will include a sand trap and are routed to sanitary sewer.<br>Signs will be posted on all trash enclosures with the message "Do not dump hazardous materials here" or similar. | Multiple trash enclosures have been proposed, reducing the likelihood of spills or solid pollution.<br>Enclosures will be inspected and maintained regularly. Spill control materials will be available on-site. |

## VI. Stormwater Facility Maintenance

### VI.A. Ownership and Responsibility for Maintenance in Perpetuity

Maintenance of stormwater facilities will be the responsibility of the property owner and will be performed by the owner's employees as part of routine maintenance of buildings, grounds, and landscaping. The applicant commits to execute any necessary agreements prior to completion of construction. The applicant accepts responsibility for interim operation and maintenance of stormwater treatment and flow-control facilities until such time as this responsibility is formally transferred to a subsequent owner.

### VI.B. Summary of Maintenance Requirements for Each Stormwater Facility

The five bioretention facilities will be maintained as follows. Details of maintenance responsibilities and procedures will be included in a Stormwater Facility Operation and Maintenance Plan to be submitted for approval prior to the completion of construction.

- Annual Landscape Maintenance: Remove any soil or debris blocking planter inlets or overflows; remove the trash that collects near inlets or gets caught in vegetation; prune or cut back plants for health and to ensure flow into inlets and across the surface of the facility; remove and replant as necessary while maintaining the design surface elevation and minimizing the introduction of soil; control weeds by manual methods and soil amendment and only use natural herbicides if necessary; add mulch to control weeds and maintain the mulch layer thickness
- Check signage: remove graffiti and replace if necessary
- Check irrigation: confirm to be adequate but not excessive
- Do not add fertilizer to bioretention facilities
- Do not use synthetic pesticides on bioretention facilities

## VII. Construction Checklist

| Stormwater Control Plan Page # | Source Control or Treatment Control Measure | See Plan Sheet #s |
|---|---|---|
| Page 19 and SCP Exhibit | All inlets will be marked with the words "No Dumping! Flows to Creek" or similar. | |
| Page 19 and SCP Exhibit | Existing native trees, shrubs, and ground cover will be preserved to the maximum extent possible. | |
| Page 19 and SCP Exhibit | Landscaping will be designed to minimize irrigation and runoff, to promote surface infiltration where | |

| | | |
|---|---|---|
| | appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. | |
| Page 19 and SCP Exhibit | Landscaped areas used to retain or detain stormwater will have plants that are tolerant of saturated soil conditions. | |
| Page 19 and SCP Exhibit | Pest-resistant plants will be used where appropriate, especially when adjacent to hardscape. | |
| Page 19 and SCP Exhibit | Plants appropriate to site soils, slope, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions will be selected. | |
| Page 20 and SCP Exhibit | All drain inlets in covered trash enclosures will include a sand trap and routed to sanitary sewer. | |
| Page 20 and SCP Exhibit | Signs will be posted on all trash enclosures with the message "Do not dump hazardous materials here" or similar. | |

## VIII. Certifications

The preliminary design of stormwater treatment facilities and other stormwater pollution control measures in this plan are in accordance with the current edition of the BASMAA *Post-Construction Manual*.

## TREATMENT AREAS SUMMARY

| DMA # | Impervious Area | | Pervious Area Treated | Total Area | Outfall / Treatment | Minimum Required Area** | Provided Treatment Area |
|---|---|---|---|---|---|---|---|
| | Existing to Remain* | Proposed | | | | | |
| | square feet | | | | | square feet | |
| 1 | 8,479 | 2,823 | 26,213 | 37,515 | SR-1 | 5,651 | 5,992 |
| 2 | 53,051 | 4,815 | 56,380 | 114,246 | OFFSITE | - | - |
| 3 | 12,715 | 3,978 | 6,958 | 23,651 | RG-5 | 695 | 750 |
| 4 | 3,870 | 1,781 | 11,505 | 17,156 | RG-4 | 272 | 620 |
| 5 | 22,745 | 5,488 | 18,510 | 46,743 | RG-3 | 1,203 | 1,310 |
| 6 | 4,553 | - | 363 | 4,916 | OFFSITE | - | - |
| 7 | 6,618 | 2,029 | 728 | 9,375 | RG-6 | 348 | 370 |
| 8 | 13,177 | 3,033 | 5,367 | 21,577 | RG-2 | 669 | 700 |
| 9 | 5,260 | 3,595 | 5,872 | 14,727 | RG-1 | 377 | 380 |
| 10 | - | 213 | 13,545 | 13,758 | OFFSITE | - | - |
| 11 | 21,885 | - | - | 21,885 | OFFSITE | - | - |
| **Site Total** | 152,353 | 27,755 | 145,459 | 325,550 | | 9,215 | 10,122 |

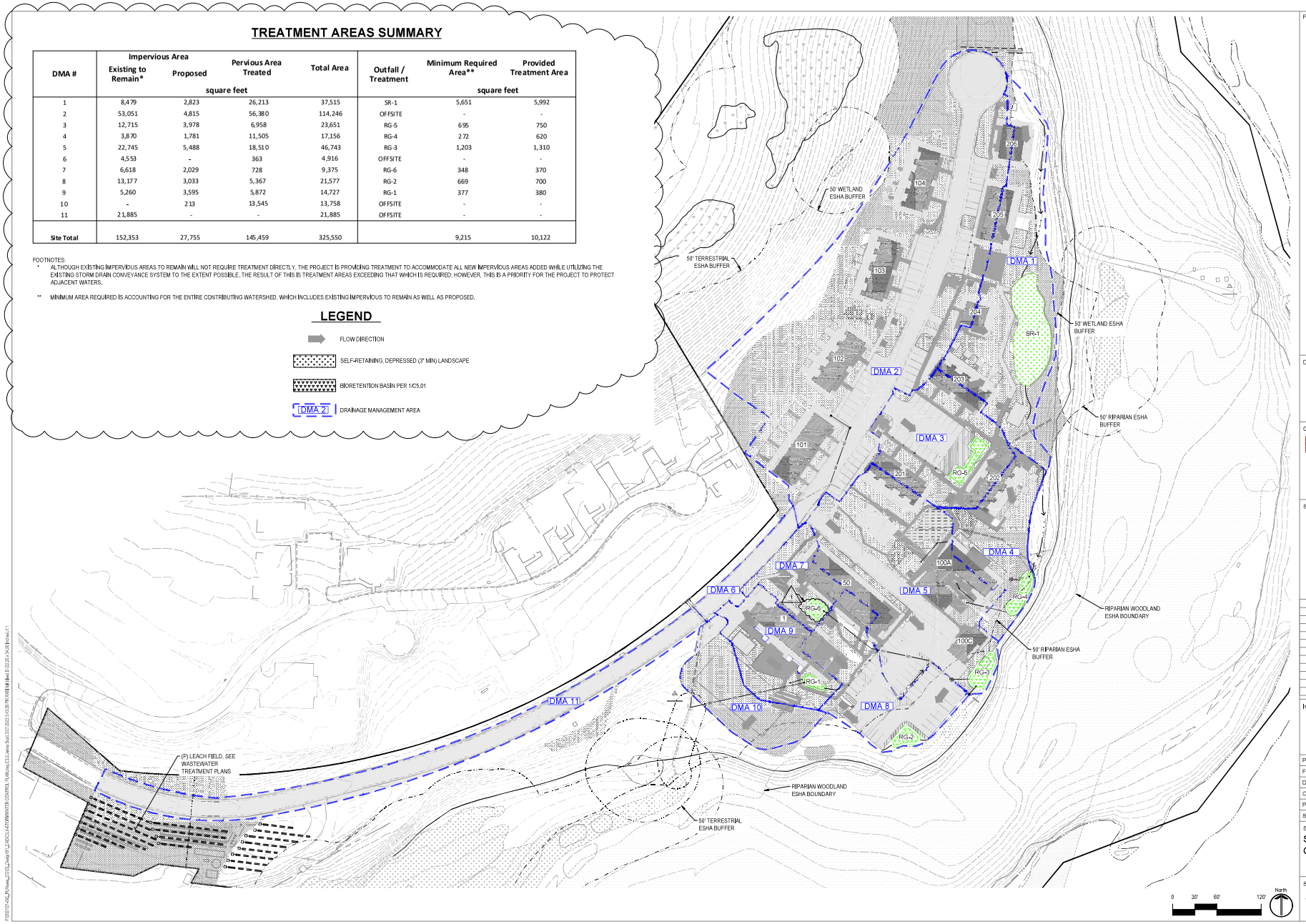
FOOTNOTES:

* ALTHOUGH EXISTING IMPERVIOUS AREAS TO REMAIN WILL NOT REQUIRE TREATMENT DIRECTLY, THE PROJECT IS PROVIDING TREATMENT TO ACCOMMODATE ALL NEW IMPERVIOUS AREAS ADDED WHILE UTILIZING THE EXISTING STORM DRAIN CONVEYANCE SYSTEM TO THE EXTENT POSSIBLE. THE RESULT OF THIS IS TREATMENT AREAS EXCEEDING THAT WHICH IS REQUIRED; HOWEVER, THIS IS A PRIORITY FOR THE PROJECT TO PROTECT ADJACENT WATERS.

** MINIMUM AREA REQUIRED IS ACCOUNTING FOR THE ENTIRE CONTRIBUTING WATERSHED, WHICH INCLUDES EXISTING IMPERVIOUS TO REMAIN AS WELL AS PROPOSED.

## LEGEND

- FLOW DIRECTION
- SELF-RETAINING, DEPRESSED (3" MIN) LANDSCAPE
- BIORETENTION BASIN PER 1/C5.01
- DMA 2 — DRAINAGE MANAGEMENT AREA




Project Title:

COMMUNITY LAND TRUST OF W. MARIN & EDEN HOUSING, INC.

# POINT REYES HOUSING RENEWAL

100 COMMODORE WEBSTER DR.
POINT REYES STATION, CA 94956
APN#: 119-240-73


Design Firm:

SIEGEL & STRAIN Architects
6201 Doyle Street, Suite B
Emeryville, CA 94608
TEL 510 / 547-8092
info@siegelstrain.com

Consultant:

SHERWOOD DESIGN ENGINEERS
625 2nd Street, Suite 202
Petaluma, CA 94952
www.sherwoodengineers.com


Stamp:

REGISTERED PROFESSIONAL ENGINEER — ISAAC ROY HASTINGS — No. C 81176 — EXP:09/30/23 — CIVIL — STATE OF CALIFORNIA

| No. | Description | Date |
|---|---|---|
| 1 | Planning R1 | 03/15/23 |

Issue Note:

PLANNING SET
07/29/22

| | |
|---|---|
| Project ID: | PRH |
| File Name: | |
| Drawn by: | KB |
| Checked by: | MH |
| Plot Date: | 02/23/23 |
| Scale: | 1" = 60' |

Sheet Title:

STORMWATER CONTROL PLAN

Sheet No.:

ATTACHMENT A

# APPENDIX I

# MITIGATION MONITORING AND REPORTING PLAN

# Mitigation Monitoring and Reporting Plan

## MMRP Requirements and Use

The Marin County (County) Planning Division of the Community Development Agency has prepared an Initial Study/Mitigated Negative Declaration (ISMND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Coastal Permit and Conditional Use Permit to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. Mitigation measures are defined in the IS/MND to reduce potentially significant impacts of project construction and operation. The mitigation measures included in the IS/MND reduce all potential project impacts to less than significant levels.

Implementation of the project will require execution and monitoring of all the mitigation measures identified in the IS. The California Environmental Quality Act (CEQA) Section 15097(a) requires that:

> "… In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

CEQA Section 15097(c) defines monitoring and reporting responsibilities of the lead agency.

> "(c) The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both. The choice of program may be guided by the following:
>
> > (1) Reporting is suited to projects which have readily measurable or quantitative mitigation measures or which already involve regular review. For example, a report may be required upon issuance of final occupancy to a project whose mitigation measures were confirmed by building inspection.

> (2) Monitoring is suited to projects with complex mitigation measures, such as wetlands restoration or archeological protection, which may exceed the expertise of the local agency to oversee, are expected to be implemented over a period of time, or require careful implementation to assure compliance.
>
> (3) Reporting and monitoring are suited to all but the most simple projects. Monitoring ensures that project compliance is checked on a regular basis during and, if necessary after, implementation. Reporting ensures that the approving agency is informed of compliance with mitigation requirements."

This Mitigation Monitoring and Reporting Program (MMRP) is meant to facilitate implementation and monitoring of the mitigation measures to ensure that measures are executed. This process protects against the risk of non-compliance.

The purpose of the MMRP is to:

- Summarize the mitigation required for the project.
- Comply with requirements of CEQA and the CEQA Guidelines.
- Clearly define parties responsible for implementing and monitoring the mitigation measures.
- Provide a plan for how to organize the measures into a format that can be readily implemented and monitored.

## MMRP Components

The MMRP provides a summary of all mitigation measures that will be implemented for the project. Each mitigation measure is accompanied with identification of:

- Timing – measures may be required to be implemented prior to construction, during construction, or post construction
- Application Locations – locations where the mitigation measures will be implemented.
- Monitoring/Reporting Action – the monitoring and/or reporting actions to be undertaken to ensure the measure is implemented.
- Responsible and Involved Parties – the party or parties that will undertake the measure and will monitor the measure to ensure it is implemented in accordance with this MMRP

The responsible and involved parties will utilize the MMRP to identify actions that must take place to implement each mitigation measures, the time of those actions and the parties responsible for implementing and monitoring the actions.

## Mitigation Monitoring and Reporting Program

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| **Biological Resources** | | | | |
| 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 | **Mitigation Measure BIO-1: Tree Removal Outside of Monarch Butterfly Roosting Season**<br>Any removal of 3ucalyptus trees shall occur outside of the winter roosting season for monarch butterfly in Marin County (October through February). If the roosting season for monarch butterfly cannot be fully avoided, a pre-construction survey for active monarch butterfly roosts shall be conducted by a qualified biologist within three days prior to removal of eucalyptus trees. If no active roosts are identified within the eucalyptus trees, the trees may be removed. If active roosts are identified within the eucalyptus trees, the trees cannot be removed until the roost has left the area as documented by a qualified biologist. | • Eucalyptus trees to be removed October through February when feasible.<br>• A pre-construction survey for monarch butterfly must be completed if tree removal occurs during monarch roosting season.<br>• Report identified active roosts if found. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency prior to eucalyptus removal. |
| 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 | **Mitigation Measure BIO-2: Worker Environmental Awareness Training**<br>Prior to construction, all contractor construction personnel shall attend an environmental training program provided by a qualified biologist. The training shall discuss sensitive species and nesting bird habitat that may occur within the project area as well as identification of California red-legged frog and their burrows.<br>The training shall include the responsibilities of contractor's construction personnel, applicable mitigation measures, and notification requirements. The training shall also address other measures that protect biological resources. | • Attendance of an environmental training program.<br>• Fact Sheets and educational brochure to be prepared prior to environmental training program. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency verifies contractor training.<br>• USFWS has authority to verify training upon request. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| | The following information shall also be provided during the training:<br>• Specific information regarding the special-status species potentially present and their habitat needs<br>• Any reports of occurrences in the project area<br>• An explanation of the status of each listed species and their protection under state and federal laws<br>• A list of measures being taken to reduce effects to the species during construction and implementation<br>Fact sheets conveying this information and an educational brochure containing color photographs of all special-status species potentially present shall be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. Construction personnel shall be instructed to halt construction activities and contact the designated biologist if a wildlife species is observed in an area where it could be harmed by construction activities. A list of employees who attend the training sessions shall be maintained on the site during construction and made available to USFWS upon request. | | | |
| 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 | **Mitigation Measure BIO-3: Install Exclusion Fencing**<br>Temporary exclusion fencing shall be installed around the limits of work areas to ensure special status animals (i.e., CRLF and western pond turtle) cannot enter the work area. Installation of exclusion fencing shall occur under the supervision of the designated biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing | • Installation of temporary exclusion fencing.<br>• Inspection of fencing for sensitive species, trapped wildlife, and damage before each workday. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency prior to work in undeveloped areas. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| | under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance.<br>The exclusion fencing shall be installed in a manner that reduces the potential for trapping migrating wildlife and for wildlife climbing over the fence, such as having the top of the fencing curved over on the outside of the fence. Cover boards shall be installed along the perimeter of the fencing to provide protection from the sun and predators, where necessary and appropriate. Gates shall be installed in the exclusion fencing that allow project access and adequately exclude wildlife. Gates will be secured at the end of each workday using sandbags or other means to prevent wildlife from entering the exclusion zone. The exclusion fencing shall remain in place and be maintained for the duration of construction activities and shall be removed within 15 days of completion of construction activities.<br>Prior to construction personnel entering and beginning work in fenced areas each day, the fenced areas shall be inspected by a biological monitor for special status species or any trapped wildlife and to identify damage to the exclusion fencing. The biological monitor must be trained by the designated biologist (BIO-4) on California red-legged frog identification, the laws protecting the species, and procedures to implement if the species is observed. If California red-legged frogs or trapped wildlife are observed, the designated biologist shall be notified immediately to determine the appropriate procedures to implement. Any damage to the fencing shall be immediately reported and repaired until the last day that construction equipment is at the project site. | | | |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| 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 | **Mitigation Measure BIO-4: Designated Biologist**<br>The applicant shall obtain USFWS approval for a designated biologist(s) for the project. The designated biologist(s) shall be on site during all activities that may result in take of California red-legged frog. The qualifications of the designated biologist(s) shall be submitted to USFWS for review and written approval at least 30 calendar days prior to the date earthmoving is initiated at the project site. The designated biologist(s) shall keep a copy of any Biological Opinion issued for the project in their possession when on site. | • Obtain USFWS approval for a designated biologist.<br>• Submit qualifications of designated biologist at least 30 calendar days prior to the initiation of earthmoving activities. | • Pre-Construction<br>• Construction | • USFWS and Marin County Community Development Agency. |
| 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 | **Mitigation Measure BIO-5: Designated Biologist Authority**<br>The designated biologist(s) shall be given the authority to freely communicate verbally, by telephone, by electronic mail, or in writing at any time with construction personnel, any other person(s) at the project site or otherwise associated with the project, the USFWS, or their designated agents. The designated biologist shall have oversight over implementation of the avoidance and minimization measures and all permit conditions and shall have the authority and responsibility to stop project activities if they determine any of the associated permit requirements are not being fulfilled. If the designated biologist(s) exercises this authority, the USFWS shall be notified by telephone and electronic mail within 24 hours. | • Designated biologist shall notify USFWS within 24 hours if permit requirements are not being fulfilled. | • Construction | • USFWS in coordination with Marin County Community Development Agency. |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or | **Mitigation Measure BIO-6: On-site Construction Monitoring**<br>The designated biologist shall be present at the project site until all initial habitat disturbances have been | • Biological monitor to contact designated biologist should any CRLF be observed on site. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| 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 | completed. After habitat disturbance has been completed and all exclusion fencing has been installed, a biological monitor, who will be trained by the designated biologist, shall monitor daily on-site compliance with all avoidance and minimization measures (AMMs) in the U.S. Fish and Wildlife Service Biological Opinion. The biological monitor shall contact the designated biologist for instructions should any CRLF be observed on the site. The biological monitor and the designated biologist shall have the authority to halt any action that could adversely affect sensitive biological resources. The designated biologist shall continue to conduct compliance checks at least once per week until construction is completed to ensure that the fencing is intact and that all AMMs are being implemented. | • Biological monitor and designated biologist shall have the authority to halt any action that could adversely affect sensitive biological resources.<br>• Designated biologist shall conduct compliance checks least once per week until construction is completed to ensure that the fencing is intact and that all AMMs are being implemented. | | |
| 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 | **Mitigation Measure BIO-7: California Red-legged Frog Pre-construction Survey**<br>No more than 24 hours prior to the date of initial ground disturbance, a pre-construction survey for California red-legged frog shall be conducted by a designated biologist at the project site.<br>The survey shall consist of walking the project limits and within the project site to ascertain the possible presence of California red-legged frog. The designated biologist shall investigate all potential areas that could be used by the species for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as for California ground squirrels or gophers.<br>If any California red-legged frogs are found, the designated biologist shall follow the procedures specified in Mitigation Measure BIO-13. | • A pre-construction survey for California red-legged frog shall be conducted by a designated biologist at the project site no more than 24 hours prior to the date of the initial ground disturbance.<br>• Follow the procedures specified in Mitigation Measure BIO-13 if any California red-legged frogs are found. | • Pre-Construction | • Marin County Community Development Agency and USFWS. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| 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 | **Mitigation Measure BIO-8: Timing Construction Commencement to Avoid California Red-legged Frog**<br>Initial ground-disturbing activities shall be avoided between November 1 and March 31 to avoid the time period when California red-legged frogs are most likely to be moving through the project area. | • Initial ground disturbing activities shall be avoided between November 1 through March 31. | • Construction | • Marin County Community Development Agency. |
| 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 | **Mitigation Measure BIO-9: Avoid Construction During Rain Events**<br>No ground-disturbing construction activities shall occur during rain events or within 24 hours following a rain event. Prior to ground-disturbing construction activities resuming, a designated biologist shall inspect the project area and all equipment/materials for the presence of California red-legged frogs. | • Cease ground-disturbing construction activities during rain event or within 24 hours following a rain event.<br>• Designated biologist shall inspect the project area and all equipment/materials for the presence of California red-legged frogs prior to ground-disturbing construction activities resuming following a rain event. | • Construction | • Marin County Department of Public Works. |
| 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 | **Mitigation Measure BIO-10: Cover Trenches**<br>Trenches or pits 1 foot or deeper that are going to be left unfilled overnight shall be securely covered with boards or other material to prevent California red-legged frog or other special-status species from falling into them. If covering of trenches or pits is not feasible, wooden | • Trenches shall be securely covered or wooden ramps or other structures.<br>• Biological monitor shall inspect the trenches, pits, | • Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service | ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are to be placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter shall be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog or other special-status species. The biological monitor shall inspect the trenches, pits, or holes prior to their being filled to ensure there are no trapped wildlife in them. The trench, pit, or hole shall also be examined by the biological monitor each workday morning prior to initiation of work and in the late afternoon no more than 1 hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the biological monitor shall contact the designated biologist, who shall remove and transport the animal to a safe location or contact the USFWS for guidance | or holes prior to their being filled.<br>• The trench, pit, or hole shall also be examined by the biological monitor each workday morning and afternoon.<br>• If the escape ramps fail to allow the animal to escape, the biological monitor shall contact the designated biologist, who shall remove and transport the animal to a safe location or contact the USFWS for guidance. | | |
| 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 | **Mitigation Measure BIO-11: Erosion Control Material**<br>Plastic monofilament netting (i.e., erosion control matting), loosely woven netting, or similar material in any form shall not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site shall be immediately removed by the designated biologist or construction personnel. Materials utilizing fixed weaves (i.e., strands cannot move), polypropylene, polymer, or other synthetic materials shall not be used. | • Verify no plastic monofilament netting, erosion control matting, woven netting or similar material are used. | • Construction | • Marin County Department of Public Works |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
|---|---|---|---|---|
| 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 | **Mitigation Measure BIO-12: Waste Management**<br>Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the California red-legged frog and other wildlife. A litter control program shall be instituted at the project site. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the project site at the end of each working day. | • Implement a litter control program at the project site.<br>• Trash containers shall be removed from the project site at the end of each working day. | • Construction | • Marin County Community Development Agency. |
| 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 | **Mitigation Measure BIO-13: Procedures for Encounters with California Red-legged Frog**<br>Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below.<br>When a California red-legged frog is encountered in the project area, all activities that have the potential to result in the harassment, injury, or death of the individual shall be immediately halted. The designated biologist will then assess the situation in order to select a course of action that shall avoid or minimize adverse effects to the animal. Contact with the animal shall be avoided and the applicant shall allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location and is actively dispersing. It | • All activities that the potential to result in the harassment, injury, or death of the individual shall be immediately halted when a California red-legged frog is encountered in the project area.<br>• California red-legged frogs that are in danger shall be relocated and related by the Designated Biologist within the same habitat outside of the construction area.<br>• Designated Biologist shall obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is | • Construction | • USFWS has authority for approval of relocation. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | does not apply to animals that are uncovered or otherwise exposed or in areas where the individual is not expected to move on its own and may be in danger (e.g., within the fenced construction perimeter).<br>California red-legged frogs that are in danger (e.g., animals that are uncovered or otherwise exposed or in areas within the fences construction perimeter where the individual is not expected to move on its own) shall be relocated and released by the designated biologist outside the construction area within the same habitat. Prior to the initial ground disturbance, the designated biologist shall obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is encountered and needs to be moved away from the project site. California red-legged frog shall be released in appropriate habitat nearby on the watershed. The designated biologist shall limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. The applicant shall immediately notify the USFWS once the California red-legged frog is relocated and the site is secure. | encountered and needs to be moved away from the project site.<br>• The Designated Biologist shall limit the duration of the handling and captivity of the California red-legged frog.<br>• Immediately notify USFWS once relocation of California red-legged frog is complete. | | |
| 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 | **Mitigation Measure BIO-14: Avoidance of Nesting Birds**<br>All tree removal activities shall be avoided between February 1 and August 15 to avoid the time period when birds are most likely to be nesting, to the extent feasible. Prior to any construction activities during the bird nesting season (February 1 to August 15), a pre-activity nesting bird survey shall be conducted no more than 7 days prior to tree removal and start of construction activities. The survey shall include all areas within 500 feet of active construction. If active nests of special status or migratory bird species (listed in the MBTA) are | • Pre-construction survey by Qualified Biologist 7 days prior to tree removal and start of construction activities.<br>• Monitoring of active nests if any work occurs within the buffer zones defined in the measure. | • February 1 to August 15 | • Marin County Community Development Agency |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and is based on the nest location, topography, cover, and species' tolerance to disturbance. A standard buffer of 500 feet shall be used for raptors and special-status birds and 200 feet for migratory birds. If the standard avoidance buffer is not achievable, a reduced buffer may be allowed under the direction of a qualified biologist and the qualified biologist will monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in any nest disturbance, work should cease immediately in the vicinity of the nest and will not be allowed to recommence in the area until the young have fledged the nest.<br>If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by the qualified biologist, would be necessary. | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, | **Mitigation Measure BIO-15: American Badger Protection** | • Qualified biologist shall conduct pre-construction surveys to determine if | • Prior to Construction | • Marin County Community |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 | Prior to ground-disturbing activities, a qualified biologist shall conduct a pre-construction survey of the project area to determine if new badger burrows have been constructed and/or if older (remnant) burrows appear to be re-occupied. These surveys will be conducted no less than 14 days and no more than 30 days prior to the start of ground disturbing activities. If burrows are occupied, the biologist will establish a 100-foot avoidance buffer around occupied maternity dens throughout the pup-rearing season (February 15 through July 1) and a 50-foot avoidance buffer around occupied dens during other times of the year. | new badger burrows are present and/or if older remnant burrows appear to be re-occupied.<br>• If burrows are found to be occupied, the biologist will establish an avoidance buffer around the occupied maternity dens | | Development Agency. |
| **Cultural Resources** | | | | |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5 | **Mitigation Measure CUL-1: Archaeological Monitoring Plan (AMP) and Archaeological Monitoring:**<br>A Secretary of Interior-qualified archaeologist shall prepare an Archaeological Monitoring Plan (AMP) that includes a provision for worker Cultural Resources Awareness Training (CRAT) as well as details regarding the archaeological sensitivity of the project area, the types of archaeological resources that could be encountered, the methodology and protocols to be employed during monitoring, and specific procedures to identify, evaluate, and treat new archaeological discoveries and for addressing specific contingencies, such as the discovery of human remains, project personnel qualifications, data collection protocols, site safety considerations, and post-field actions. The archaeologist preparing the AMP shall contact the Federated Indians of Graton Rancheria (FIGR) and provide them an opportunity to review and comment on the AMP prior to its finalization. | • Qualified archaeologist shall prepare an Archeological Monitoring Plan that includes a provision for worker Cultural Resources Awareness Training in consultation with the Federated Indians of Graton Rancheria.<br>• A professional archeologist shall provide sensitivity training to supervisory staff prior to initiation of site preparation and/or construction to alert construction workers to the possibility of exposing | • Prior to Construction<br>• Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | A professional archeologist shall provide sensitivity training to supervisory staff prior to initiation of site preparation and/or construction to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of precontact or historic-era objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and procedures for protection and notification. An "alert sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic-era and/or precontact archaeological resources.<br>A qualified archaeologist shall monitor all ground-disturbing activities that take place within native (i.e., non-fill) soils. If an archaeological deposit is encountered during ground-disturbing activities, all work within 50 feet of the discovery shall be halted until a Secretary of Interior qualified archaeologist and FIGR (in the case of precontact-period resources) inspects the material, assesses its historical significance, and provides recommendations for the treatment of the discovery in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 86). Potentially significant historic-era resources may include all by-products of human land use greater than 50 years of age, including subsurface deposits of domestic type material (e.g., glass, ceramic, metal, wood, faunal remains, brick), buried alignments of stone, brick, or foundation elements, and possible features associated with the former railroad, open workspaces, or yard spaces. Potentially significant | significant historic and/or prehistoric archaeological resources within the project area.<br>• An alert sheet shall be posted in staging areas to alert personnel to the procedures and protocols for the discovery of a potentially significant historic-era and/or precontact archaeological resources.<br>• Qualified archaeologist shall monitor all ground-disturbing activities that take place within native soils.<br>• If an archaeological deposit is encountered, all work within 50 feet of the discovery shall be halted until Secretary of Interior qualified archaeologist and FIGR (in the case of precontact-period resources) inspects the material, assesses its historical significance, and provides recommendations for the treatment of the discovery. | | |

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| | precontact period resources include midden soils, artifacts such as faunal bone, groundstone, fire-affected rock, baked clay, modified bone and/or shell, flake stone debitage, flake stone tools, etc., and features such as house floors, cooking pits, deliberately interred burials.<br>If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:<br>• Eligible for the CRHR (and a historical resource for purposes of CEQA); or<br>• A unique archaeological resource as defined by CEQA.<br>If the resource meets the criteria for eligibility on the CHRH or is a unique archaeological resource, work shall remain halted, and the cultural resources specialist/archaeologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines section 15064.5(b).<br>Avoidance of the area, or avoidance of impacts to the resource, is the preferred method of mitigation for impacts to cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with the AMP. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. | • Qualified archaeologist shall analyze evaluation, collection, recordation and approve the start of work in the project area. | | |

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| | Work may commence within the vicinity of the discovery upon completion of evaluation, collection, recordation, and analysis as approved by the qualified archeologist. | | | |
| **Geology and Soils** | | | | |
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:<br>ii) Strong seismic ground shaking | **Mitigation Measure GEO-1: Implement Geotechnical Recommendations in Final Design**<br>The applicant shall incorporate the following recommendations of the geotechnical investigation into the final design:<br>• Site preparation and grading: In areas that will receive fill or improvements (i.e., pavement, foundations, or concrete flatwork), the soil subgrade would be scarified to a depth of at least 8 inches, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction. The upper eight inches of soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding.<br>• Utility trench backfill: All trenches would conform to the current CAL-OSHA requirements. Pipes and/or conduits would be bedded on a minimum of 4 inches of clean sand or fine gravel. After the pipes and/or conduits are tested, inspected (if required) and approved, all trenches would be covered to a depth of 6 inches with clean sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill and should be placed and compacted according to the recommendations previously presented.<br>• Exterior concrete flatwork: Exterior concrete flatwork that would not receive vehicular traffic (i.e. sidewalk) would be underlain by at least 4 inches of Class 2 | Incorporate stated recommendations of geotechnical investigation into the final design of the Project. | • Prior to Construction | • Marin County Department of Public Works. |

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| | aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.<br>• Spread footing: The existing buildings are assumed to be supported on spread footings bottomed in the existing fill; however, some footings may extend into the native soil. If new loads are imposed on the existing footings, test pits would be excavated to determine the depth and width of the footings.<br>• Proposed improvements may be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades. Continuous footings should be at least 16 inches wide, and isolated footings should be at least 18 inches wide.<br>• Concrete slab-on-grade floors: The subgrade for new slab-on-grade floors would be prepared in accordance with recommendations in Section 8.1 of the geotechnical investigation (Rockridge Geotechnical 2022). Where water vapor transmission through the new floor slab is not desirable, the project would install a capillary moisture break and water vapor retarder beneath the floor slab. A capillary moisture break consists of at least 4 inches of clean, freed raining gravel or crushed rock.<br>• Permanent retaining walls: Retaining walls would be designed to resist static lateral earth pressures, lateral pressures caused by earthquakes, and traffic loads (if vehicular traffic is expected within a horizontal distance equal to 1.5 times the wall height). All on-site | | | |

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| | walls, including low retaining walls in landscaped areas, would be designed in accordance with the recommendations presented in the geotechnical investigation; however, checking the walls for seismic loading is not required for walls less than 6 feet high. | | | |
| **Hazards and 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 | **Mitigation Measure HAZ-1: Asbestos and Lead-Based Paint**<br>Demolition activities shall comply with the OSHA Standard 1926.6 related to lead abatement, and all other applicable State and federal requirements for the safe handling and disposal of lead-based paint, ACM, and universal wastes. The project contractor shall implement the following measures.<br>*Lead-based Paint*<br>As lead was identified in the paints and a detailed inventory of paints was not performed for the entire project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of any detected levels of lead.<br>None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste | Contractor shall comply with the OSHA Standard 1926.6 and applicable measures and conduct required testing and abatement prior to demolition activities of any potential lead or asbestos containing materials. | • Demolition | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the Contractor on the entire waste stream for verification.<br>Conventional demolition techniques shall be employed for all painted surfaces, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:<br>• Worker awareness training<br>• Exposure monitoring, as needed<br>• Medical examinations, which may include blood lead level testing<br>• Establishing a written respiratory protection program<br>***Asbestos-containing Materials (ACM)***<br>Any suspect material not sampled or not visually identified as negative by the Environmental Compliance Due Diligence Activities Report prepared by Tetra Tech in 2016 shall be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials shall be assumed to contain asbestos and disposed of in accordance with OSHA Standard 1926.6. | | | |
| **Hydrology and Water Quality** | | | | |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such | **Mitigation Measure HYDRO-1: Protection of NMWD Water Supply Wells**<br>***Modify Leach Field to Avoid Protection Zone*** | • Applicant shall ensure leach field avoids Zone A Protection Zone of NMWD groundwater supply wells. | • Prior to Construction<br>• Construction | • RWQCB in coordination with Marin County |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| that the project may impede sustainable groundwater management of the basin | The Applicant shall modify the leach field design to avoid application of treated wastewater within the Zone A Protection Zone of NMWD groundwater supply wells.<br>***Design Review***<br>Design of the tertiary treated wastewater system is subject to review by the San Francisco Bay Regional Water Quality Control Board and Division of Drinking Water and permitting by the San Francisco Bay Regional Water Quality Control Board. The proposed wastewater system will require a Report of Waste Discharge Form 200 and a Title 22 Engineering Report as part of the application process to meet the Waste Discharge Requirements of the State. The Title 22 Engineering Report shall also be submitted to the NMWD and County for informational purposes.<br>***Use of Wastewater for Irrigation: Timing***<br>Tertiary treated wastewater shall not be applied to landscaping irrigation within 24 hours of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the land application area surface soil is saturated. Application of treated wastewater for landscape irrigation shall further only occur when the depth to groundwater in the area of irrigation is a minimum of 4.5 feet or more below the ground surface, based on groundwater monitoring data allowing a minimum of 3 feet of separation between the drip dispersal and the groundwater table. Application of treated wastewater for irrigation shall not exceed the agronomic rate The agronomic rate will be monitored daily using an onsite irrigation controller to determine real time daily evapotranspiration rates and calculate run times for wastewater dispersal for irrigation. | • Applicant shall follow the timing guidelines of tertiary treated wastewater use in landscaping irrigation.<br>• Monitoring of the effluent from the wastewater treatment system shall be completed per the Regional Water Quality Control Board issued Monitoring and Reporting Program included in the Notice of Applicability for enrollment in the 2014 WDR General Order.<br>• The Notice of Applicability must be issued prior to recycled water production and use.<br>• No application of effluent shall be allowed within the Zone A Protection Zone unless the water quality criteria is met.<br>• A Groundwater Monitoring and Mitigation Plan (GMMP) shall be prepared for the project by a qualified hydrologist or hydrogeologist.<br>• Any violation of the RWQCB permit conditions | | Department of Environmental Health |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | *Monitoring of Effluent*<br>Monitoring of the effluent from the wastewater treatment system shall be completed per the Regional Water Quality Control Board issued Monitoring and Reporting Program included in the Notice of Applicability for enrollment in the 2014 WDR General Order. The Notice of Applicability must be issued prior to recycled water production and use. Constituents that would be monitored and reported on are listed in the table below.<br>Should the effluent exceed the UV transmittance threshold specified in the National Water Research Institute Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, turbidity threshold of 10 NTU at any time, or other standard specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the treated wastewater shall not be applied within any area within the NMWD Zone A Protection Zone, including any portion of the leach field located in the Zone A Protection Zone. No application of effluent shall be allowed within the Zone A Protection Zone until the treatment system is repaired and the effluent quality is demonstrated to meet the water quality objectives. During periods when the effluent is not meeting water quality standards specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the effluent shall be stored in a tank and transferred to a wastewater treatment facility, if needed while maintenance is conducted on the wastewater treatment system.<br>*Groundwater Monitoring*<br>A Groundwater Monitoring and Mitigation Plan (GMMP) shall be prepared for the project by a qualified | shall require immediate notification to the RWQCB with a report filed within five (5) business days documenting the violation and corrective actions taken to address the violation.<br>• Water quality monitoring reports shall be prepared quarterly and submitted to the RWQCB, NMWD, and County for review.<br>• An annual report shall also be submitted to the RWQCB consistent with all regulatory requirements and permit conditions.<br>– Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site. | | |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | hydrologist or hydrogeologist. The groundwater quality monitoring program must comply with monitoring and reporting requirements issued by the Regional Water Quality Control Board. The GMMP shall include specifics on the procedures and timing for groundwater monitoring and reporting as well as action criteria and responses to action criteria. At a minimum, the GMMP shall include:<br>• Quarterly groundwater sampling and water quality monitoring between the irrigated areas and NMWD wells using the existing wells CG-2 and CG-3 and two additional monitoring wells<br>• Quarterly reporting to RWQCB, NMWD, and the County with the results of the monitoring program<br>• Performance criteria:<br>– The water quality within the groundwater monitoring wells between the area of application and NMWD drinking water wells shall not exceed 10 mg/L of nitrate (NO3) . Nitrate is used as an indicator of the treated wastewater given that the background levels of nitrate are less than the treatment standard for the wastewater system.<br>• Corrective actions: If the intervening monitoring well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected. Additional corrective actions including but not limited to, repairs or replacement of equipment, additional monitoring, or other actions, will be defined as appropriate depending on the exceedance detected and potential causes of the exceedance.<br>***Reporting*** | | | |

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| | Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days to RWQCB, the County, and NMWD documenting the violation and corrective actions taken to address the violation.<br>Water quality monitoring reports shall be prepared quarterly and submitted to the RWQCB, NMWD, and County for review. The quarterly reports shall contain the daily and monthly groundwater and effluent monitoring results for the prior quarter, identify any exceedances of the water quality standards or performance criteria, and actions taken to address the exceedance. An annual report shall also be submitted to the RWQCB consistent with all regulatory requirements and permit conditions. Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site.<br>***Alternative Uses of Treated Effluent***<br>Alternative uses of treated effluent may also include but not be limited to the following and would be based on Regional Water Board and Division of Drinking Water approval:<br>• Use in off-site landscaping<br>• Recycled water refill station | | | |
| | **Mitigation Measure HYDRO-2: Avoid Equipment Staging and Storage in 100-Year Floodplain**<br>All equipment staging and storage areas shall be located outside of the 100-year floodplain. Any equipment-refueling activities shall be conducted within designated staging or storage areas with secondary containment for any potential spills of fuel. | • Locate storage and staging areas outside of the 100-year floodplain. | • Construction | • Marin County Department of Public Works. |

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| **Land Use and Planning** | | | | |
| 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 | **Mitigation Measure BIO-1: Tree Removal Outside of Monarch Butterfly Roosting Season**<br>Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. |
| 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 | **Mitigation Measure BIO-2: Worker Environmental Awareness Training**<br>Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. |
| **Noise** | | | | |
| 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 | **Mitigation Measure NOI-1: Design of Wastewater Treatment System**<br>The wastewater treatment system, including enclosures, shall be designed so that noise levels generated by the wastewater treatment system do not exceed 45 dB at the nearest residential property line adjacent the wastewater treatment system. A Noise Mitigation Plan, including the final wastewater treatment plan operational equipment noise levels, proposed enclosures, and any noise attenuation devices shall be submitted to the County at least 60 days prior to construction of the wastewater treatment system. The County may specify additional measures to reduce noise | • Wastewater treatment system shall be designed so that noise levels do not exceed 45 dB at the nearest residential property line.<br>• Applicant shall prepare a Noise Mitigation Plan and submit to the County at least 60 days prior to construction of the wastewater treatment system. | • Prior to Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | levels from the wastewater treatment system during the design review process. | | | |
| **Transportation** | | | | |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) | **Mitigation Measure TRA-1: Traffic Management Plan**<br>Prior to initiation of construction, the Project contractor(s) shall use a qualified traffic engineer to prepare a Traffic Management Plan (TMP) in compliance with the California Manual on Uniform Traffic Control Devices. The TMP shall be incorporated into the contract documents and specifications. The TMP shall include, but not necessarily be limited to, the elements listed below:<br>• The construction contractor shall confirm with the West Marin Elementary School the typical start and dismissal times, school events, and irregular start and dismissal times prior to the start of construction.<br>• The construction contractor shall avoid hauling/truck traffic on Highway 1 in front of West Marin Elementary School within 1 hour prior to the start of school and 1 hour following dismissal or special event times or equivalent method to avoid traffic hazards at the elementary school as defined in the TMP.<br>• Installation of traffic-control devices where traffic conditions warrant, as specified in the applicable jurisdiction's standards (e.g., the California Manual on Uniform Traffic Control Devices Part 6: Temporary Traffic Control); use of flaggers, when warranted, to control vehicle movements.<br>• Implementation of a public information program to notify interested parties of the impending construction | • Traffic Management Plan prepared in compliance with the California Manual on Uniform Traffic Control Devices.<br>• Submit Traffic Management Plan to the County for approval.<br>• The Contractor or Traffic Engineer shall report to the County that applicable work was done in compliance with this measure. | • Prior to Construction | • Marin County Department of Public Works |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | activities using means such as signs posted around the project site.<br>• Compliance with roadside safety protocols to reduce the risk of accidents.<br>• Maintaining of access for emergency vehicles at all times<br>• Store all equipment and materials in designated contractor staging areas on or adjacent to the worksite in such a manner as to avoid obstruction to traffic including emergency vehicles. | | | |
| **Tribal Cultural Resources** | | | | |
| a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:<br>i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | **Mitigation Measure CUL-1: Archaeological Monitoring Plan (AMP) and Archaeological Monitoring:**<br>Refer to cultural resources | Refer to cultural resources. | Refer to cultural resources. | Refer to cultural resources. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | | | | |
| **Utilities and Service Systems** | | | | |
| 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? | **Mitigation Measure HYDRO-1: Protection of NMWD Water Supply Wells**<br>Refer to hydrology and water quality. | Refer to hydrology and water quality. | Refer to hydrology and water quality. | Refer to hydrology and water quality. |



County of Marin Community Development Agency

# Point Reyes Station USCG Coastal Permit and Conditional Use Permit

# Responses to Comments on the Draft Initial Study/Mitigated Negative Declaration

August 2024

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# 1 Public Review of the Draft IS/MND

## Public Review Period

This section includes comments received during the Point Reyes Station USCG Coastal Permit and Conditional Use Permit Initial Study/Mitigated Negative Declaration (IS/MND) public review period. The Draft IS/MND was circulated for a 30-day public review period from April 22, 2023 to May 22, 2023. Notices were sent to 276 people and the notice was posted at the Marin County Clerk's Office and via CEQANet.

## Comments Received

The County of Marin Community Development Agency received 102 comment letters on the Draft IS/MND during the public comment period. The commenters are listed in Table 1. It should be noted that 92 out of 102 letters were provided to express support for the project and contained comments only on the merits of the project and did not provide comments on the project's potential environmental impacts relevant to CEQA. The remaining 10 letters contained comments about the environmental impacts of the project as considered under CEQA, and the majority of those letters also included support for the project and affordable housing.

**Table 1 Comments Received**

| Letter # | Commenter | Date | Comments on CEQA Analysis |
|---|---|---|---|
| **Agencies** | | | |
| 1 | Caltrans | 5/22/2024 | **Yes** |
| 2 | California Coastal Commission | 5/22/2024 | **Yes** |
| 3 | North Marin Water District | 5/21/2024 | **Yes** |
| **Organizations** | | | |
| 4 | West Marin Senior Services | 4/30/2024 | No |
| 5 | Two Valleys Community Land Trust | 5/5/2024 | No |
| 6 | Marin Conservation League | 5/16/2024 | **Yes** |
| 7 | Petaluma Health Center | 5/19/2024 | No |
| 8 | Two Valleys Community Land Trust | 5/20/2024 | No |
| 9 | EAH Housing | 5/4/2024 | No |

| Letter # | Commenter | Date | Comments on CEQA Analysis |
|---|---|---|---|
| 10 | Save our Seashore | 5/22/2024 | **Yes** |
| 11 | California Community Land Trust Network | 5/22/2024 | No |
| **Individuals** | | | |
| 12 | Nicole Lavelle | 4/30/2024 | No |
| 13 | Martin Seiler | 4/30/2024 | No |
| 14 | Harriet Moss | 4/30/2024 | No |
| 15 | Ashley Hebert | 5/4/2024 | No |
| 16 | Stephen Marshall | 4/30/2024 | No |
| 17 | Bill Lee | 4/30/2024 | No |
| 18 | Kevin and Ingrid Lawson | 4/30/2024 | No |
| 19 | Dana Pepp | 4/30/2024 | No |
| 20 | Kathy Hunting | 4/30/2024 | No |
| 21 | Katherine and Bridger Mitchell | 4/30/2024 | No |
| 22 | Annie O'Connor | 4/30/2024 | No |
| 23 | Carol Friedman | 5/1/2024 | No |
| 24 | Owen Clapp | 5/1/2024 | No |
| 25 | Suzanne and John Speh | 5/2/2024 | No |
| 26 | George Clyde | 5/4/2024 | No |
| 27 | Wil Levine | 5/5/2024 | No |
| 28 | Betty Pagett | 5/6/2024 | No |
| 29 | Megan and Tom Pillsbury | 5/6/2024 | No |
| 30 | Jen Levine | 5/6/2024 | No |
| 31 | Cathleen Dorinson | 5/7/2024 | No |
| 32 | David Moser | 5/7/2024 | **Yes** |
| 33 | Wendy Friefeld | 5/7/2024 | No |
| 34 | Bob Houghteling and Elizabeth Fishel | 5/11/2024 | No |
| 35 | Carol Whitman | 5/11/2024 | No |
| 36 | Myn Adess | 5/12/2024 | No |

| Letter # | Commenter | Date | Comments on CEQA Analysis |
|---|---|---|---|
| 37 | Lee and Frank Seidner | 5/12/2024 | No |
| 38 | Carla Ruff | 5/12/2024 | No |
| 39 | Maureen Cornelia | 5/13/2024 | No |
| 40 | Frank Leahy | 5/13/2024 | No |
| 41 | Francine Allen | 5/13/2024 | No |
| 42 | Martha Proctor | 5/13/2024 | No |
| 43 | Mamie Yee | 5/13/2024 | No |
| 44 | Patti Breitman | 5/13/2024 | No |
| 45 | Scoby Zook | 5/13/2024 | No |
| 46 | Kathy Maxwell | 5/13/2024 | No |
| 47 | John Lopez | 5/14/2024 | No |
| 48 | Michael Neuman | 5/14/2024 | No |
| 49 | Kris Brown | 5/14/2024 | No |
| 50 | Barbara Gaman | 5/14/2024 | No |
| 51 | Jane Stringer and James Grant | 5/14/2024 | No |
| 52 | Gigi Gruenke | 5/14/2024 | No |
| 53 | Katherine Mitchell | 5/14/2024 | No |
| 54 | James P. O'Hara | 5/14/2024 | No |
| 55 | Doris Ober | 5/14/2024 | No |
| 56 | Mary Winegarden | 5/15/2024 | No |
| 57 | Michael Malloy | 5/15/2024 | No |
| 58 | Julie and Randy Merk | 5/15/2024 | No |
| 59 | Ruth Lopez | 5/15/2024 | No |
| 60 | Geoff Hoyle | 5/15/2024 | No |
| 61 | Cheryl Higgins | 5/16/2024 | No |
| 62 | Angela Giacomini | 5/16/2024 | No |
| 63 | Susan Stingle | 5/16/2024 | No |
| 64 | Jasmina Etemovic | 5/16/2024 | No |
| 65 | Diane Gale O'Reilly | 5/16/2024 | No |

| Letter # | Commenter | Date | Comments on CEQA Analysis |
|---|---|---|---|
| 66 | Frances Hinckley | 5/16/2024 | **Yes** |
| 67 | Owen Clapp | 5/16/2024 | No |
| 68 | Arron Wilder | 5/16/2024 | No |
| 69 | Bobbi Loeb | 5/17/2024 | No |
| 70 | Nancy Vayhinger | 5/17/2024 | No |
| 71 | Ann-Sheree Greenbaum | 5/17/2024 | No |
| 72 | Murray Suid | 5/17/2024 | No |
| 73 | Susan Brayton | 5/17/2024 | No |
| 74 | Stephanie Roth | 5/17/2024 | No |
| 75 | Heather Furmidge | 5/18/2024 | No |
| 76 | Norene Jelliffe | 5/18/2024 | No |
| 77 | Julia Liss | 5/18/2024 | No |
| 78 | Pamela Ross | 5/18/2024 | No |
| 79 | Jerry Hudgins | 5/18/2024 | No |
| 80 | Cassandra Benjamin | 5/19/2024 | No |
| 81 | Bruce Mitchell and Nancy Hemmingway | 5/19/2024 | No |
| 82 | Jane Curtis | 5/19/2024 | No |
| 83 | Gail Bateson | 5/20/2024 | No |
| 84 | Mary Morgan | 5/20/2024 | No |
| 85 | David Rempel | 5/20/2024 | No |
| 86 | Sonja Anderson | 5/20/2024 | No |
| 87 | Catie Clune | 5/20/2024 | No |
| 88 | Suzanne Sadowsky | 5/21/2024 | No |
| 89 | Maalis | 5/21/2024 | No |
| 90 | Pamalah MacNeily | 5/21/2024 | No |
| 91 | Gary Ireland and Elizabeth Zarlengo | 5/21/2024 | No |
| 92 | Kerry Livingston | 5/21/2024 | No |
| 93 | Jim Jensen | 5/21/2024 | No |
| 94 | Robert Steinberg | 5/21/2024 | **Yes** |

| Letter # | Commenter | Date | Comments on CEQA Analysis |
|---|---|---|---|
| 95 | Dan Morse | 5/21/2024 | No |
| 96 | Claire Peaslee | 5/21/2024 | No |
| 97 | Ed Nute | 5/21/2024 | **Yes** |
| 98 | MaryAnn Flett | 5/21/2024 | **Yes** |
| 99 | Art and Judy Levit | 5/22/2024 | No |
| 100 | John Finger and Terry Sawyer | 5/22/2024 | No |
| 101 | Henry Inman | 5/22/2024 | No |
| 102 | Anneke van der Veen | 5/22/2024 | No |
| **Late Comments** | | | |
| 103 | Save Our Seashore | 7/9/24 | **Yes** |

# 2 Summary and Conclusion

This document includes comments received by Marin County Community Development Agency during the public review period for the IS/MND for the Point Reyes Station USCG Coastal Permit and Conditional Use Permit, and responses to those comments. Five comments prompted revisions to the IS/MND as presented in the responses to comments and the errata file that follows. The revisions only clarify and add specificity to the Project Description, analysis, and mitigation measure, and do not alter conclusions regarding the significance of impacts or the effectiveness of mitigation measures. There have been no changes to the Project or changed circumstances under which the Project would be undertaken requiring further analysis under CEQA. None of the circumstances described in State CEQA Guidelines § 15073.5(b) have occurred, meaning recirculation of the IS/MND is not required.

The conclusion of the IS/MND remains unchanged: the Project, with the incorporation of mitigation measures identified in the IS/MND, would have only less-than-significant environmental impacts. None of the comments provides substantial evidence to support a fair argument that the Project would have a significant effect on the environment. Therefore, per State CEQA Guidelines § 15064(f)(1), an Environmental Impact Report (EIR) is not required.

# 3 Comment Letters and Responses

The comment letters and responses are provided below. The comment letters have been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment Letter 1).

**LETTER 1**
**COMMENTER: California Department of Transportation**
**DATE: May 22, 2024**

**Robin Fies**

**From:** Ayon, Llisel@DOT <Llisel.Ayon@dot.ca.gov>
**Sent:** Wednesday, May 22, 2024 2:16 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station Affordable Housing Project MND - Caltrans Comments
**Attachments:** Pt. Reyes Station MND - Caltrans.pdf

You don't often get email from llisel.ayon@dot.ca.gov. Learn why this is important

**Hello Michelle,**

**Thank you for including Caltrans in the review process for the above referenced project. Please see the attached letter for out comments and let me know if you have any questions.**

**Thank you,**

**Llisel Ayon**
**Associate Transportation Planner**
**Caltrans, District 4 | Local Development Review**
**Cell: (510) 506-6184**



CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

**California Department of Transportation**

5DISTRICT 4
OFFICE OF REGIONAL AND COMMUNITY PLANNING
P.O. BOX 23660, MS–10D | OAKLAND, CA 94623-0660
www.dot.ca.gov

May 22, 2024

SCH #: 2024040904
GTS #: 04-MRN-2024-00324
GTS ID: 32607
Co/Rt/Pm: MRN/1/28.6

Michelle Levenson, Principal Planner
Marin County Community Development Agency
3501 Civic Center Dr., Suite 308
San Rafael, CA 94903

**Re: Pt. Reyes Station USCG Site Coastal Permit and Conditional Use Permit Affordable Housing Project – Mitigated Negative Declaration (MND)**

Dear Michelle Levenson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for this project. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities. The following comments are based on our review of the April 2024 MND. 1.1

Please note this correspondence does not indicate an official position by Caltrans on this project and is for informational purposes only.

**Project Understanding**

The project would adaptively reuse and repurpose a former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station along State Route (SR)-1.

**Travel Demand Analysis**

With the enactment of Senate Bill (SB) 743, Caltrans is focused on maximizing efficient development patterns, innovative travel demand reduction strategies, and multimodal improvements. For more information on how Caltrans assesses Vehicle Miles Traveled (VMT) analysis for land use projects, please review Caltrans' Transportation Impact Study Guide *(link)*. 1.2

"Provide a safe and reliable transportation network that serves all people and respects the environment."

The project VMT analysis and significance determination are undertaken in a manner consistent with the Office of Planning and Research's (OPR) Technical Advisory. Per the IS/MND, this project is presumed to have a less than significant VMT impact.

**Project Coordination**
Please be advised there is a Caltrans project in the vicinity, EA# 0G642, for the replacement of the neighboring Lagunitas Creek Bridge (*link*). Please reach out to the Project Contact, Matt O'Donnell, at Matt.Odonnell@dot.ca.gov or (510) 852-5113 for any coordination.

1.3

**Construction-Related Impacts**
Project work that requires movement of oversized or excessive load vehicles on State roadways requires a transportation permit that is issued by Caltrans. To apply, please visit Caltrans Transportation Permits (*link*). Prior to construction, coordination may be required with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to the State Transportation Network (STN).

1.4

**Equitable Access**
If any Caltrans facilities are impacted by the project, those facilities must meet American Disabilities Act (ADA) Standards after project completion. As well, the project must maintain bicycle and pedestrian access during construction. These access considerations support Caltrans' equity mission to provide a safe, sustainable, and equitable transportation network for all users.

1.5

**Encroachment Permit**
Please be advised that any permanent work or temporary traffic control that encroaches onto Caltrans' Right-of-Way (ROW) requires a Caltrans-issued encroachment permit. As part of the encroachment permit submittal process, you may be asked by the Office of Encroachment Permits to submit a completed encroachment permit application package, digital set of plans clearly delineating Caltrans' ROW, digital copy of signed, dated and stamped (include stamp expiration date) traffic control plans, this comment letter, your response to the comment letter, and where applicable, the following items: new or amended Maintenance Agreement (MA), approved Design Standard Decision Document (DSDD), approved encroachment exception request, and/or airspace lease agreement.

1.6

The checklist TR-0416 (*link*) is used to determine the appropriate Caltrans review process for encroachment projects. The Office of Encroachment Permit requires 100% complete design plans and supporting documents to review and circulate the permit application package. To obtain more information and download the permit application, please visit Caltrans Encroachment Permits (*link*). Your application package may be emailed to D4Permits@dot.ca.gov.

Thank you again for including Caltrans in the environmental review process. Should you have any questions regarding this letter, please contact Llisel Ayon, Associate Transportation Planner, via LDR-D4@dot.ca.gov. For future early coordination opportunities or project referrals, please contact LDR-D4@dot.ca.gov.

1.7

Sincerely,

YUNSHENG LUO
Branch Chief, Local Development Review
Office of Regional and Community Planning

c: State Clearinghouse

## Responses to Letter 1

**Response 1.1**
The comment provides an introduction to the letter. No response is required.

**Response 1.2**
The comment states that the VMT analysis in the IS/MND appears to be consistent with the OPR Technical Advisory. The comment is noted.

**Response 1.3**
The commenter states that there is a Caltrans project known as Lagunitas Creek Bridge located near the project.

It is noted that the Lagunitas Creek Bridge Project would be constructed in the summer of 2026. The proposed project construction is expected to start construction in 2024 and construction is expected to last 1 to 2 years. It is expected that construction of the proposed project would likely not overlap with construction of the Lagunitas Creek Bridge Project; however, if there were an overlap in construction, any vehicle traffic to the project site would be redirected to avoid the Lagunitas Creek Bridge Project. If there were an overlap in construction schedules, the limited traffic generated by the proposed project would not cause a cumulatively significant impact on transportation.

**Response 1.4**
The comment states that the project may require a transportation permit if the project uses oversized or excessive load vehicles. The comment states that the project may need to coordinate with Caltrans to develop a Transportation Management Plan (TMP) to reduce construction traffic impacts to the State Transportation Network (STN).

The applicant would coordinate with Caltrans to obtain a transportation permit if required consistent with regulatory requirements. The project would implement Mitigation Measure TRA-1 which requires the Project contractor(s) to use a qualified traffic engineer to prepare a Traffic Management Plan (TMP) in compliance with the California Manual on Uniform Traffic Control Devices. No revisions to the IS/MND are needed to address the comment.

**Response 1.5**
The commenter states the Project must meet ADA standards and maintain bicycle and pedestrian access during construction.

The proposed ADA-accessibility and bicycle parking improvements proposed as part of the project are discussed in Section 2.3.2 and 3.2.17 of the Draft IS/MND. The project is located at the end of a road and there is no through access past the project site. There is no bicycle or pedestrian transit network that would be affected during construction due to the isolated nature

of the project site at the end of a road and current lack of bicycle and pedestrian facilities in the area.

**Response 1.6**
The comment states that if any work encroaches Caltrans right-of-way a Caltrans encroachment permit is required.

The comment and Caltrans authority are noted. No revisions to the IS/MND are needed to address the comment.

**Response 1.7**
This comment provides a conclusionary statement for the letter and provides the contact information for the commenter. No revisions to the IS/MND are needed to address the comment.

**LETTER 2**

**COMMENTER: California Coastal Commission**

**DATE: May 22, 2024**

**Robin Fies**

**From:** Velasquez, Leslie@Coastal <leslie.velasquez@coastal.ca.gov>
**Sent:** Wednesday, May 22, 2024 3:28 PM
**To:** EnvPlanning
**Cc:** Ringuette, Oceane@Coastal
**Subject:** Comments on Draft Initial Study/Mitigated Negative Declaration for USCG Coastal Permit and Conditional Use Permit (P3710)
**Attachments:** CCC Comment Letter USCG 5.22.24.pdf

You don't often get email from leslie.velasquez@coastal.ca.gov. Learn why this is important

Hello,

Attached is a letter with the California Coastal Commission's comments on the proposal to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station.

2.1

Thank you!

Best,
Leslie

STATE OF CALIFORNIA — NATURAL RESOURCES AGENCY GAVIN NEWSOM, GOVERNOR

**CALIFORNIA COASTAL COMMISSION**

NORTH CENTRAL COAST DISTRICT
455 MARKET STREET, SUITE 228
SAN FRANCISCO, CA 94105
PHONE: (415) 904-5260
WEB: WWW.COASTAL.CA.GOV

May 22, 2024

Michelle Levenson, Project Planner, County of Marin
Community Development Agency
3501 Civic Center Drive, Suite 308
San Rafael, CA 94903

Subject: **Comments on Draft Initial Study/Mitigated Negative Declaration (MND) for USCG Coastal Permit and Conditional Use Permit (P3710) in Point Reyes Station, CA**

Dear Ms. Levenson,

Thank you for the opportunity to provide additional comments on the proposal to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. The proposed project would consist of the following: (1) rehabilitate existing townhomes contained in 10 two-story buildings to provide 36 affordable housing units; (2) rehabilitate and repurpose the existing "barracks" building (Building 50) to provide 15 affordable housing units; (3) rehabilitate "Building 100A" to provide 3 housing units; (4) renovate and expand an existing kitchen/galley building to provide a resident services building; (5) construct a new on-site wastewater treatment system; (6) remove trees from a riparian area; and (7) reconstruct an existing playground. We received the Notice of Completion for the Mitigated Negative Declaration associated with the project on April 22, 2024 and would like to reiterate our previous comments that we sent on September 14, 2022 for the draft MND to help guide the forthcoming CDP process:

2.2

**Impacts to ESHA:** It appears that work will be conducted within the 50-ft ESHA buffers and that the impact will be minimized to the greatest extent possible. Please incorporate best management practices and all mitigation measures included in the MND, and consider any other options to minimize impacts where possible. Additionally, the County should require recordation of an Open Space deed restriction for the ESHA buffer area that limits the allowable use within the buffer to uses only allowed by the LCP in such ESHA buffers (C-BIO 18, 19, 24 and 25) as a required condition of approval to ensure these coastal resources are protected in perpetuity.

2.3

**Tribal Consultation:** Tribal consultation is a requirement of the Coastal Act, and therefore incorporated into the Marin County LCP. The CCC has an adopted updated Tribal Consultation Policy for our CDP Application Process; however, we did not see any information about Tribal Consultation plans or timelines in the project documents. One of the policy requirements is that the project team communicate with and engage with Tribes at the earliest possible stage in the review and decision-making processes. Please provide additional details on tribal consultation planned as part of this development.

2.4

Please feel free to contact me at leslie.velasquez@coastal.ca.gov with any questions you may have regarding our feedback.

Thank you,



Leslie Velasquez

Coastal Planner
North Central Coast District
California Coastal Commission

## Responses to Letter 2

**Response 2.1**
The comment provides an introduction to the letter. No response is required.

**Response 2.2**
The comment provides a summary of the Project and introduction to the letter. No response is required.

**Response 2.3**
The comment notes that the project would complete work within the 50-foot ESHA buffers. The commenter states that the project should implement BMPs and mitigation measures to minimize impacts where possible. The comment states that the County should implement restrictions in the ESHA buffer areas to ensure these coastal resources are protected in perpetuity.

The project is subject to all policies and ordinances described in the LCP (County of Marin 2019b), which includes ESHA buffers. The project consistency with the ESHA policies is provided in Table 3.2-12 of the Draft IS/MND.

The comment about the deed restrictions in the ESHA buffer is beyond the scope of environmental effects covered in the IS/MND. No further response is required.

**Response 2.4**
The commenter states that the IS/MND did not include information on the Tribal consultation.

A description on the tribal consultation completed for the Project is provided in Section 3.2.18, Tribal Cultural Resources of the Draft IS/MND under the title AB 52 Consultation. Mitigation Measure CUL-1 was developed through consultation with Native Americans in compliance with AB 52.

**LETTER 3**

**COMMENTER: North Marin Water District**

**DATE: May 21, 2024**

**Robin Fies**

**From:** Eric Miller <emiller@nmwd.com>
**Sent:** Tuesday, May 21, 2024 10:27 AM
**To:** Michelle Levenson; EnvPlanning
**Cc:** Sarah Jones; Greg Pirie; elenajoy.pelen@waterboards.ca.gov; elliott.nguyen@waterboards.ca.gov; Tony Williams; Pablo Ramudo
**Subject:** Response to Draft IS/NMD - Pt. Reyes Station USCG Site Affordable Housing Project
**Attachments:** Coast Guard Housing ISMND_NMWD comments_2024 0521.pdf

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**Mrs. Levenson,**

**Thank you for the opportunity to comment on the Draft IS/MND, dated April 2024 for the subject project. North Marin Water District has reviewed the document and is providing comments in the attached letter. A hard copy of the letter is being mailed to your attention.**

**If you have any questions please contact me at (415) 761-8947 or emiller@nmwd.com**

**Thank you,**

**Eric Miller, PE**
**AGM | Chief Engineer**

NORTH MARIN WATER DISTRICT

999 Rush Creek Place
Novato, CA 94948
(415) 897-4139

3.1

NORTH MARIN WATER DISTRICT

999 Rush Creek Place
P.O. Box 146
Novato, CA 94948-0146

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415-897-4133

EMAIL
info@nmwd.com

WEB
www.nmwd.com

May 21, 2024

Michelle Levenson, Senior Planner
County of Marin, Community Development Agency
3501 Civic Center Drive, Suite 308
San Rafael, CA 94903-4157

Re: County of Marin Community Development Agency
Point Reyes Station USCG Coastal Permit and Conditional Use Permit
Draft Initial Study/Mitigated Negative Declaration
NMWD File 2 4089.00

Dear Mrs. Levenson:

Thank you for the opportunity to comment on the subject California Environmental Quality Act Draft Initial Study/Mitigated Negative Declaration (IS/MND), dated April 2024. North Marin Water District (District) has reviewed the report and has the following comments:

1) Page 2-11, Section 2.3.3 Utilities and Public Service states;

*The project would be served by a newly constructed wastewater treatment facility, subsurface drip irrigation system, and leach field. The wastewater treatment system would be located on the southwest edge of the project site, near the entrance on Commodore Webster Drive. The wastewater treatment system would consist of a Membrane Aerated Biofilm Reactor, which would be housed in a combination of underground tanks, aboveground container, treatment building, and storage tank. The wastewater system would accommodate up to 10,000 gallons of wastewater per day and serve the entire project. The primary mode of wastewater dispersal during the dry season would be through subsurface drip irrigation lines located throughout much of the project site. A leach field of 0.22 acre and a 10,000-gallon aboveground storage tank would be located adjacent the treatment system, south of Commodore Webster Drive. The water treatment system would be connected to the proposed micro-grid and back up emergency generator to ensure consistent power supply.*

District Comment: The wastewater treatment facility proposed by this development is complex and requires ongoing management by operators certified by the State of California. The IS/MND is silent on this requirement. The success and effectiveness of the wastewater system is paramount to ensure protection of the groundwater at and around the Coast Guard Wells.

3.2

2) Page 2-11, Section 2.3.3 Utilities and Public Service, footnote 1 states;

*Recycled water could be used for toilet flushing in community area restrooms, which would need to be dual-plumbed. This would represent a demand of approximately 300 to 400 gpd.*

3.3

District Comment: Potable water service to a property under jurisdiction of a Title 22 Engineering Report for a wastewater system and recycled water service; which this project proposes to do, is contingent on collaboration with the potable water provider (NMWD) and continuous implementation of all requirements. Failure to meet those requirements will result in termination of potable water service.

3) Page 2-12, Section 2.3.4 Water states;

*Fire sprinklers would be added to the ADA-compliance mobility units in Buildings 202 and 204, Building 50, and Building 1. New fire-water lines would be installed to service the sprinkler system.*

3.4

District Comment: New water infrastructure required as part of this project may be more than what is represented in this section. During the design review phase, the District will conduct a condition assessment of existing on-site facilities (water mains, valves, laterals, hydrants, appurtenances, etc.). Depending on the results of the assessment, the District may require repair and/or replacement of deficient on-site infrastructure prior to project approval.

4) Page 2-16, Section 2.4.2 Access and Staging

District Comment: The District will require that access to our Pt. Reyes Treatment Plant facility and our Coast Guard Wells through the project site be maintained at all times to the extent practical. Prolonged access restrictions will need to be coordinated with the District in advance and alternate access will need to be provided when needed.

3.5

5) Page 2-17, Section 2.5 Operation and Maintenance

District Comment: The wastewater treatment facility proposed by this development is complex and requires ongoing management by operators certified by the State of California. The IS/MND is silent on this requirement. The success and effectiveness of the wastewater system is paramount to ensure protection of the groundwater at and around the Coast Guard Wells.

3.6

6) Page 3-77, Section 3.2.10 Hydrology and Water Quality, Groundwater Supplies

District Comment: The project site contains two existing potable water wells, both of which were **installed by and are maintained by NMWD**.

3.7

7) Page 3-85, Section 3.2.10 Hydrology and Water Quality, Mitigation Measure HYDRO-1, Modify Leach Field to Avoid Protection Zone

District Comment: A Drinking Water Source Assessment (DWSA) performed in 2013 consistent with the standard method known as the "Calculated Fixed Radius Method" and using the pumping capacity available at the Coast Guard Wells was approved by the Department of Drinking Water (DDW). This state-approved DWSA established the primary protection zone (PZA) for the Coast Guard Wells at a radius of 1,600 feet.

3.8

Disposal of treated wastewater outside of the Coast Guard Wells' PZA, while mitigating some of the potential for degradation of groundwater, represents a partial mitigation since the presence of the wastewater treatment plant within PZA constitutes a Possible Contaminating Activity (PCA) of very high risk and will trigger reevaluation of the District's DWSA, as well as treatment and monitoring programs by DDW.

8) Page 3-86, Section 3.2.10 Hydrology and Water Quality, Mitigation Measure HYDRO-1, Design Review

3.9

District Comment: Potable water service to a property under jurisdiction of a Title 22 Engineering Report for a wastewater system and recycled water service; which this project proposes to do, is contingent on collaboration with the potable water provider (NMWD) and continuous implementation of all requirements. Failure to meet those requirements will result in termination of potable water service.

9) Page 3-120, Section 3.2.19 Utilities and Service Systems, Operations states;

3.10

*According to the NMWD 2020 Urban Water Management Plan, the NMWD has adequate water supplies to serve the project and reasonable foreseeable future development during normal, dry, and multiple dry years (North Marin Water District 2021). Therefore, the NMWD has adequate capacity to serve the project. Impacts would be less than significant.*

District Comment: The 2020 Urban Water Management Plan (UWMP) represents analysis of the District's Novato Water system only as stated on Page 1, Section 1.1 of the document (excerpt provided), https://nmwd.com/wp-content/uploads/2021/07/NMWD-UWMP-2020_w_appendices.pdf :

> This UWMP addresses the North Marin Water District (NMWD or District) Novato Water System. As discussed in Section 2.1, the District also operates the West Marin Water System, which is a separate public water system with a separate source of supply and no physical interconnection of facilities between the Novato and West Marin Water System. The West Marin Water System has only 770 connections, service approximately 1,800 people and approximately 228 AFY, and is therefore not subject to the UWMP Act. Thus, this Plan includes information on the Novato Water System only, and where the term "District" and NMWD are used, they are referring to the Novato Water System portion of the District unless otherwise noted.

10) Page 20, Appendix I – Mitigation and Monitoring Reporting Program, HYDRO-1, Mitigation Monitoring and Reporting Measures states;

3.11

*Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days documenting the violation and corrective actions taken to address the violation.*

District Comment: The District requests to be included in the notification protocol for RWQCB permit condition violations.

11) Page 20, Appendix I – Mitigation and Monitoring Reporting Program, HYDRO-1, Mitigation and Reporting Measures states;

3.12

*No application of effluent shall be allowed within the Zone A Protection Zone unless the water quality criteria is met.*

District Comment: This statement is ambiguous on which water quality criteria (there are essentially three related to the project) are meant to be satisfied by this mitigation measure. The IS/MND is also silent on the responsible party for ensuring ongoing compliance with the requirement.

12) Page 21, Appendix I – Mitigation and Monitoring Reporting Program, HYDRO-1, Mitigation and Reporting Measures states;

3.13

*Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site.*

District Comment: The District recommends removal of this language as the comment is irrelevant to the Mitigation Monitoring and Reporting Program. See District comment No. 16.

13) Page 22, Appendix I – Mitigation and Monitoring Reporting Program, HYDRO-1, Mitigation Measures states;

*Corrective actions: If the intervening groundwater well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected.*

3.14

District Comment: The District recommends clarifying the intent of this sentence by using the term "monitoring well(s)" in place of "intervening groundwater well(s)".

14) Appendix I – Mitigation and Monitoring Reporting Program

District Comment: The project's Mitigation and Monitoring Reporting Program is missing a distinct mitigation measure related to the impacts to the District's existing potable water distribution system imposed by the introduction of the new on-site recycled water distribution system as described in Section 3.2.19 – Utilities and Service Systems.

3.15

15) The District appreciates the inclusion of HYDRO-1 as a mitigation measure in the Project's Draft IS/MND, as it is scoped to minimize potential impacts to a critical piece of the District's existing water supply (Coast Guard Wells).

3.16

The project proposes construction of a complex wastewater treatment system that requires extensive permitting, ongoing operation, sampling and monitoring for the life of the project. The presence of this system will likely trigger additional monitoring requirements and potentially impose additional treatment requirements for water produced at the Coast Guard Wells. Failure to meet the groundwater quality metrics has severe implications on the District's ability to provide quality potable water to the West Marin communities we serve.

Given those implications, the District seeks a formal agreement with the County (or appropriate party) that identifies project aspects related to the treatment facility, use of recycled water, groundwater quality, associated roles and responsibilities, and both short- and long-term obligations of the stakeholders. The District seeks to have this agreement in place prior to completion of project construction and perhaps concurrent with approving a new Water Service Agreement(s).

16) An optional inclusion in the formal agreement described above would be a provision for phasing the project such that construction of the wastewater treatment and recycled water systems be separated, and that initially, only potable water be used for irrigation, and that wastewater treatment meet waste discharge requirements for and to disposal to leach fields outside the Coast Guard Well's Primary Protection Zone (PZA).

3.17

Construction of the recycled water treatment and distribution systems would be deferred until the District is able to identify, secure rights to, and construct an alternative water supply source for the District's West Marin Service Area, and subsequently the District's abandonment of the Coast Guard Wells and the removal of the associated PZA for those wells.

h

The phased approach would be contingent on the project applicant, or owner's, financial contribution towards the District's efforts to identify, secure rights to, and construct an alternative water supply source.

If you have any questions please contact me at (415) 761-8947 or emiller@nmwd.com.

Sincerely,

| | | |
|---|---|---|
| Anthony Williams, PE | Pablo Ramudo | Eric Miller, PE |
| General Manager | Water Quality Supervisor | Assistant General Manager |

r:\folders by job no\4000 jobs\4089 coast guard housing - prop study\ceqa comment period\coast guard housing s/mnd_nmwd comments.docx

Cc via email:

Sarah Jones, Director, County of Marin Community Development Agency
Greg Pirie, Deputy Director Environmental Health, County of Marin Community Development Agency
Elena Pelen, District Engineer, SWRCB Division of Drinking Water
Elliott Ngueyn, Marin District 25 Engineer, SWRCB Division of Drinking Water

## Responses to Letter 3

**Response 3.1**
The comment provides an introduction to the letter. No response is required.

**Response 3.2**
The comment states that the IS/MND does not describe the management and operations of the proposed wastewater treatment facility. The comment states that proper management of the facility ensures protection of the groundwater at and around the Coast Guard Wells.

The need for State of California permit and oversight of the wastewater treatment system is noted and discussed in the Draft IS/MND Section 2.6, permits and approvals, Section 3.7 Impact A), and Mitigation Measure HYDRO-1. Mitigation Measure HYDRO-1 specifically addresses the SFBRWQCB permit requirements and reporting to the RWQCB. The requirements for applicant monitoring of the system and water quality of the effluent is also discussed in Mitigation Measure HYDRO-1. Information on management and operations of the proposed wastewater treatment facility is provided in Appendix J, Wastewater Basis of Design Report, of the IS/MND. The applicant is responsible for ensuring proper operation of the wastewater treatment facility. The County has enforcement authority for the mitigation measures under CEQA and the RWQCB will have enforcement authority over their permit requirements.

**Response 3.3**
The comment discusses a footnote to the text in Section 2.3.3, which indicates that recycled water could be used for toilet flushing. The footnote incorrectly included discussion of recycled water in restrooms. The project does not include use of recycled water in restrooms. It is noted that separate permits and authorization would be required to allow for use of recycled water in restrooms. The footnote is revised on Page 2-11 of the IS/MND as shown below.

> [1] The estimated average daily wastewater flow is 9,500 gallons per day (gpd). The equalization tank, which stores wastewater, is sized for 5,000 gpd, or approximately half a day of flow. The recycled water storage tank would store treated effluents and is sized to provide slightly more than 1 day of recycled water storage, or 10,000 gallons. ~~Recycled water could be used for toilet flushing in community area restrooms, which would need to be dual-plumbed. This would represent a demand of approximately 300 to 400 gpd.~~ The reuse opportunity that is part of the current design is irrigation via a subsurface drip system, which is sized for 100 percent of wastewater flows and also provides another method of disposal during dry weather. The leach field has capacity to dispose of 200 percent of effluent, and the design does not assume a portion is used for irrigation.

**Response 3.4**
The comment states that NMWD would conduct a condition assessment of existing on-site facilities (i.e. water mains, valves, laterals, hydrants, and appurtenances) to determine whether additional repair and/or replacement of deficient on-site infrastructure is required prior to project approval.

The County acknowledges that additional repairs or replacements may be needed based on NMWD additional assessments of the existing facilities during the design review phase. The repair or replacement of damaged facilities would not result in any greater or different impacts than those addressed in the Draft IS/MND.

**Response 3.5**
The comment states that NMWD requires access to the Point Reyes Treatment Plant facility and Coast Guard Wells throughout the life of the project.

The comment is noted and NMWD would maintain access to NMWD infrastructure for the life of the project. NMWD easements are included in the project design plans.

**Response 3.6**
The comment is similar to Comment 3.2. Refer to Response 3.2. No further response is required.

**Response 3.7**
The comment states that the project site contains two existing potable water wells, both of which were installed by and are maintained by NMWD.

This comment is correct. The existing NMWD wells are discussed in the Draft IS/MND on pages 2-12, 3-55, 3-81, 3-82, and 3-117.

**Response 3.8**
The comment states that disposal of treated wastewater outside of the Coast Guard Wells' PZA represents a partial mitigation since the presence of the wastewater treatment plant within PZA constitutes a Possible Contaminating Activity (PCA) of very high risk. The comment states that the project may require reevaluation of DWSA as well as treatment and monitoring programs by DDW.

As discussed in the Draft IS/MND, the wastewater treatment system would be designed to meet the State's Recycled Water Standards established in California Code of Regulations, Title 22 for disinfected tertiary treatment. The SFBRWQCB is the lead regulatory agency that would oversee and permit the wastewater treatment system. The proposed wastewater system would require a Report of Waste Discharge and Form 200 and a Title 22 Engineering Report as part of the application process to meet the Waste Discharge Requirements of the State. Additionally, the recycled water must meet effluent limits set by the State Water Resources Control Board Order WQ 2014-0153-DWQ "General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems" (2014 WDR General Order). It is recognized that the wastewater treatment will be subject to permitting and further evaluation by SFBRWQCB. Mitigation Measure HYDRO-1 includes substantial requirements for monitoring of effluent to protect water quality and defines actions to protect water quality.

**Response 3.9**
The comment discusses that potable water service is contingent on implementation of all requirements for protection of water quality. Under CEQA, mitigation measures are legally

binding. The mitigation measures will be adopted as conditions of approval and enforcement of the measures is defined in the Mitigation Monitoring and Reporting Plan. In addition, the terms of the SFBRWQCB permit for the wastewater treatment facility will be enforceable by SFBRWQCB.

**Response 3.10**
The comment states that the NMWD 2020 Urban Water Management Plan (UWMP) only included analysis for the Novato water system. The comment provides an excerpt from the UMWP that states the West Marin Water System is not subject to the UWMP Act due to the size and limited service area.

The discussion of water supplies is revised on Pages 3-120 and 3-121 of the IS/MND as follows:

> The project has an anticipated water demand of 9,500 gpd. NMWD obtains its water supply for the West Marin service area from two wells located on the nearby Gallagher Ranch and from two wells located on the project site. ~~According to the NWMD 2020 Urban Water Management Plan, the NWMD has adequate water supplies to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years (North Marin Water District 2021).~~ The project area previously provided housing for the U.S. Coast Guard and the wells on the project site, which are now operated by NMWD, supplied water to the housing for over 20 years including periods of drought. The wells on the project site are thus assumed to provide sufficient water supply for the project during normal, dry, and multiple dry years. If NMWD relocates the wells on the project site at some point in the future, it is presumed that the relocated well location would have similar or greater productivity to the wells on the project site and would be capable of serving the demand for the project. Therefore, the NWMD has adequate capacity to serve the project. Impacts would be less than significant.

**Response 3.11**
The commenter requests to be included in the notification protocol for RWQCB permit condition violations.

The comment is noted and the reporting protocol in Mitigation Measure HYDRO-1 in Appendix I and Page 3-87 of the IS/MND is revised to include NMWD as follows:

> Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days to RWQCB, the County, and NMWD documenting the violation and corrective actions taken to address the violation.

**Response 3.12**
The comment states that the following statement in the IS/MND is ambiguous, "No application of effluent shall be allowed within the Zone A Protection Zone unless the water quality criteria

is met." The comment also states that the IS/MND does not provide the responsible party for ensuring ongoing compliance.

The mitigation measure language preceding the sentence referenced in the comment states "Should the effluent exceed the UV transmittance threshold specified in the National Water Research Institute Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, turbidity threshold of 10 NTU at any time, or other standard specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the treated wastewater shall not be applied within any area within the NMWD Zone A Protection Zone, including any portion of the leach field located in the Zone A Protection Zone." This language is clear in that it applies to the UV transmittance threshold, 10 NTU turbidity threshold, and other standards that will be included in the RWQCB permit. The UV transmittance threshold and turbidity threshold allow for real-time analysis and decision making and are used as proxies for other constituents to ensure proper function of the wastewater treatment facility. Exceedance of any of those thresholds would be an indicator that the wastewater treatment system requires maintenance and application of recycled water within the Zone A Protection Zone would not be allowed until those standards are met. No further response is required.

**Response 3.13**
This comment states that the IS/MND should remove the following statement as the comment is irrelevant to the Mitigation Monitoring and Reporting Program: "Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site."

The referenced sentence will remain in the mitigation measure. Mitigation measures are legally binding commitments over the life of the project. If the groundwater wells are relocated from the project site, then the commitment for extensive monitoring and reporting would no longer apply as the Zone of Protection for those groundwater wells would no longer exist. Because mitigation measures are legally binding mechanisms, this language is important to keep in the mitigation measure to allow the applicant to cease or reduce monitoring if the risk no longer exists. Any reduction in monitoring would require the approval of the RWQCB under the RWQCB's permit conditions for the wastewater treatment system.

**Response 3.14**
The comment states that the sentence should change "intervening groundwater well(s)" to "monitoring well(s)".

The referenced sentence in Mitigation Measure HYDRO-1 on Page 22 of Appendix I and Page 3-87 of the IS/MND will be revised as follows:

- Corrective actions: If the intervening ~~groundwater~~ monitoring well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected. Additional corrective actions including but not limited to, repairs or replacement of equipment,

additional monitoring, or other actions, will be defined as appropriate depending on the exceedance detected and potential causes of the exceedance.

**Response 3.15**
The comment states that the Mitigation and Monitoring Reporting Program is missing a distinct mitigation measure related to the impacts to the NMWD existing potable water distribution system imposed by the introduction of the new on-site recycled water distribution system as described in Section 3.2.19 – Utilities and Service Systems.

The project impacts on NMWD potable waters system are analyzed in the IS/MND on Pages 3-81 and 3-82. The analysis of impacts on NMWD water supply wells is referenced in Section 3.2.19 on Page 3-118 and Mitigation Measure HYDRO-1 is applied to protect NMWD groundwater supply wells. The impacts are addressed in the IS/MND and are reduced to a level of less than significant with mitigation.

**Response 3.16**
The comment states that the NMWD seeks a formal agreement with the County (or appropriate party) that identifies project aspects related to the treatment facility, use of recycled water, groundwater quality, associated roles and responsibilities, and both short- and long-term obligations of the stakeholders. The comment states that the NMWD prefers to have this agreement in place prior to completion of project construction and perhaps concurrent with approving a new Water Service Agreement(s).

The comment references a legal agreement that is separate from the analysis of environmental effects under CEQA. Such an agreement will be considered separately from the CEQA process by the County and applicant. The Water Service Agreement is discussed in the IS/MND on Pages 3-117 and 3-118.

**Response 3.17**
The comment states that instead of formal agreement, described in Comment 3.16, the Project could be phased so the use of the wastewater treatment facility and recycled water systems would be separated. The comment further explains that only potable water should be used for irrigation and construction of the recycled water treatment and distribution systems would be deferred until after NMWD is able to identify, secure rights to, and construct an alternative water supply source for the NMWD West Marin Service Area, and subsequently the NMWD abandonment of the Coast Guard Wells and the removal of the associated PZA for those wells.

The project as proposed by the applicant is evaluated in the IS/MND. Alternatives to the proposed project, including potential phasing, is not part of this CEQA analysis. See response to comment 3.13, which allows for reduced or cessation of monitoring and reporting in the event that the groundwater wells are relocated.

**LETTER 4**

**COMMENTER: West Marin Senior Services**

**DATE: April 30, 2024**

Robin Fies

**From:** Skip Schwartz <skip@wmss.org>
**Sent:** Tuesday, April 30, 2024 3:17 PM
**To:** EnvPlanning
**Subject:** Coast Guard Housing Neighborhood Renewal Point Reyes Station

You don't often get email from skip@wmss.org. Learn why this is important

**Attn: Rachel Reid, Environmental Planning Manager**
**Re: Pt. Reyes Station USCG Site Affordable Housing Project**

**Dear Ms Reid and Marin County Staff,**

**Thank you for the opportunity to comment on the CEQUA/NEPA environmental documents for the Pt. Reyes Station Coast Guard Housing / Neighborhood Renewal project advanced by CLAM and Eden Housing. It appears the project has been rigorously reviewed and potential impacts have been addressed and minimized with conditions. West Marin Senior Services [WMSS] is a 48 year-old nonprofit Community Based Organization and property owner in Point Reyes Station. Affordable housing in rural West Marin may be the most emergent issue confronting our community in recent times. The WMSS Board of Directors and staff whole-heartedly advocate and support the project and encourage that the reviews and the project be successfully completed as soon as possible, thereby creating more affordable homes for seniors in our community.**

**I would be happy to discuss this proposal, its impacts and importance to our community further at any time.**

*Sincerely yours,*

*Skip Schwartz*

West Marin SENIOR SERVICES

**Maurice 'Skip' Schwartz | Executive Director**
**West Marin Senior Services**
**PO Box 791, Point Reyes Station, CA 94956**
**skip@wmss.org | 415-663-8148 x109 Cell 415 269 3774**
*Our mission is to help seniors live safely and with dignity in our community.*
**Aging... Everybody's doing it...**

4.1

## Responses to Letter 4

**Response 4.1**

The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 5**

**COMMENTER: Two Valleys Community Land Trust**
**DATE: May 4, 2024**

**Robin Fies**

**From:** Hal Russek <hal@tvclt.org>
**Sent:** Sunday, May 5, 2024 9:44 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from hal@tvclt.org. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. 5.1

The area Two Valleys Community Land Trust serves is located adjacent to the area CLAM serves and our organization is in full support of the USCG Affordable Housing project.

It is essential that to prevent the further hollowing out of the unincorporated communities of West Marin that we develop and preserve more affordable housing. Without it, school enrollment will continue to decline and the services and amenities a healthy community relies on will not survive.

We, therefore, urge you to approve this project as swiftly as possible.

Thank you for your consideration.

Yours Sincerely,

Hal Russek
Executive Director

--
Hal Russek
Executive Director
Two Valleys Community Land Trust
www.TwoValleysCLT.org
hal@tvclt.org

## Responses to Letter 5

**Response 5.1**

The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 6**

**COMMENTER: Marin Conservation League**
**DATE: May 16, 2024**

**Robin Fies**

**From:** MCL <mcl@marinconservationleague.org>
**Sent:** Thursday, May 16, 2024 4:12 PM
**To:** EnvPlanning
**Subject:** MCL: USCG Housing Project, Point Reyes Station
**Attachments:** MCL_USCG Housing Pt Reyes Stn_5.16.2024.pdf

You don't often get email from mcl@marinconservationleague.org. Learn why this is important

Dear Ms. Reid,

Please find a comment letter that MCL has drafted regarding the US Coast Guard Affordable Housing Project & Mitigated Negative Declaration in Point Reyes Station. The letter is dated today, May 16th, 2024 and signed by Nona Dennis, MCL President and Kate Powers, Co-Chair of the MCL Land Use, Transportation and Water Committee. 6.1

If you have any issue with the download of the letter, please let me know.

Kind regards,

Martha Richter Smith
*Office Administrator*

Marin Conservation League
175 N. Redwood Dr. Suite 135
San Rafael, CA 94903
415-485-6257

May 16th, 2024

MARIN CONSERVATION LEAGUE

Protecting Marin Since 1934

Rachel Reid, Environmental Coordinator
Marin County Community Development Agency – Environmental Planning Division
3501 Civic Center Drive, Room 308
San Rafael, CA 94903

c/o: envplanning@marincounty.org

**SUBJECT: US COAST GUARD AFFORDABLE HOUSING PROJECT & MITIGATED NEGATIVE DECLARATION, POINT REYES STATION**

Dear Ms. Reid:

Marin Conservation League (MCL) has been tracking the planning and environmental review process for reuse of the US Coast Guard (USGC) site in Point Reyes Station and the current Community Land Trust Association of West Marin (CLAM) and EDEN Housing proposal to adaptively reuse, rehabilitate, and repurpose the existing, former USCG facilities to create 54 affordable housing units. The project improvements include, among others: a new on-site wastewater treatment facility and installing bio-retention facilities in the environmentally sensitive habitat areas of the site. 6.2

MCL appreciates the opportunity to review and comment on the Initial Study, which recommends the adoption of a Mitigated Negative Declaration (MND). MCL offers the following comments:

1. MCL was pleased to review the discussion of biological resource areas that are critical and pertinent to the USCG site. MCL supports the many recommended mitigation measures proposed to reduce or offset impacts including, among other Mitigation Measures: BIO-1 (tree removal to occur outside the winter roosting season for the Monarch butterfly); BIO-2 (pre-construction, worker environmental awareness training); BIO-6 (on-site construction monitoring); BIO-7 (requiring a pre-construction survey for the California Red-legged frog); and BIO-14 (avoidance of tree removal during nesting bird season and requiring pre-construction survey for nesting birds). 6.3

2. Under the discussion of hydrology and water quality, the MND concludes that the proposed bioretention facilities would increase groundwater recharge and infiltration. This would be a beneficial impact of this project. 6.4

   The site's location in the Lagunitas Creek watershed and proximity to the creek heightens the importance of preventing pollution and sediment from leaving the site and migrating into the creek or its adjacent floodplain. A footnote in the MND states "Lagunitas Creek supports

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Marin Conservation League was founded in 1934 to preserve, protect and enhance the natural assets of Marin County.

one of the best populations of coho salmon, and probably the best population of freshwater shrimp, in the state."

While a designated biologist will be required to be present at the project site until all initial habitat disturbances have been completed, and effluent and groundwater monitoring will be required once the project is completed, there is no mention of monitoring water quality related to stormwater runoff during the construction period, nor monitoring of compliance with best management practices during grading, demolition and building. Monitoring both site runoff and adherence to BMPs during construction will be important to ensuring that mitigations of impacts to the environment are successful. Please confirm whether that monitoring will be included in the Mitigation Monitoring and Reporting Program (MMRP), whether it will be required by the Construction Stormwater General Permit from the State Water Resources Control Board, or whether by another condition of approval.

3. Under the discussion of the topic of energy and greenhouse gas emissions, the MND concludes that the project will not result in any significant impacts necessitating mitigation. Nonetheless, the MND cites County policies encouraging electrification of buildings and appliances. MCL is supportive of these policies and the County's recent efforts for promoting countywide electrification and less reliance on natural gas. MCL encourages that the County requires, as a condition of permit approval, that all project appliances and infrastructure in this project be 100% electric.

   In addition, during the project's required upgrades to electrical infrastructure and metering panels, MCL encourages that the parking areas are designed to serve increasing demand for electric vehicle charging capacity so that in addition to the 24 "EV Ready" parking spaces that will be provided according to the MND, we encourage the project to wire the site so that no parking space is more than 100 ft from connecting to a "EV Capable" location that will support additional chargers in the future.

4. To reduce automobile trips (VMTs) and associated GHGs, MCL also encourages the inclusion, and improvement where needed, of connected sidewalks and pathways all along Commodore Webster Drive in order to prioritize safe and comfortable walking and biking from the site to the nearby downtown.

5. Under the topic of land use planning and compatible design, outdoor lighting of the project site should comply with DarkSky International's Responsible Outdoor Lighting practices to align with the community-led initiative seeking a *DarkSky West Marin* community designation and a new light pollution ordinance.

6. Regarding the topic of population and housing, the project would result in a notable beneficial impact! By increasing this housing stock in the Point Reyes Station village, the workforce in the West Marin community is afforded the opportunity to live closer to work, thus reducing travel and greenhouse gas emissions.

6.5

6.6

6.7

6.8

170 N. Redwood Dr., Ste. 135, San Rafael, CA 94903 | 415.485.6257 |
mcl@marinconservationleague.org

Marin Conservation League was founded in 1934 to preserve, protect and enhance the natural assets of Marin County.

Lastly, MCL wholeheartedly supports this affordable housing project. MCL recently updated its housing policy position statement which contains over 50 policies. The updated statement recognizes the current housing crisis and the need for sensibly designed housing in Marin County, particularly housing that is affordable to lower-income residents and West Marin's workforce. This project aligns with many of MCL's new housing policy positions and conservation goals.

6.9

Again, thank you for the opportunity to comment on the MND and on the merits of this important project.

Sincerely,

Nona Dennis
President

Kate Powers
Co-Chair – Land Use Transportation and Water Committee

175 N. Redwood Dr., Ste. 135, San Rafael, CA 94903 | 415.485.6257 |
mcl@marinconservationleague.org

Marin Conservation League was founded in 1934 to preserve, protect and enhance the natural assets of Marin County.

## Responses to Letter 6

**Response 6.1**
The comment provides an introduction to the letter. No response is required.

**Response 6.2**
The comment provides a summary of the project. No response is required.

**Response 6.3**
The comment expresses support for the biological resource mitigation measures in the IS/MND. No response is required.

**Response 6.4**
The comment asks for clarification on the monitoring of stormwater BMP effectiveness during construction.

The IS/MND discusses on Page 3-729 that the project would be implemented in compliance with the Construction Stormwater General Permit (Order No. 2022-057-DWQ) including preparation of a Stormwater Pollution Prevention Plan (SWPPP) with application and monitoring of BMPs during construction in compliance with the Construction Stormwater General Permit. Because the permit contains substantial requirements for monitoring and implementation of stormwater BMPs, additional project mitigation is not required.

**Response 6.5**
The comment requests wiring of the site so that no parking space is more than 100 feet from an EV cable.

The comment is noted. The project includes 24 new EV parking spaces and solar panels as discussed in the IS/MND.

**Response 6.6**
The comment requests for connected sidewalks and pathways along Commodore Webster Drive to prioritize walking and biking.

Sidewalk improvements are included as part of the project. Given the low volume of traffic on Commodore Webster Drive (i.e., not a through street) additional sidewalk improvements are not required.

**Response 6.7**
The comment requests that lighting be Dark Sky compliant.

The lighting proposed for the project is discussed in the IS/MND on Page 3-6. The lighting would generally replace existing lighting and would be downcast to not affect the dark sky consistent with the lighting standards in Marin County Development Code Section 22.16.030(G).

**Response 6.8**
The comment discusses that the project would result in a beneficial population and housing impact.

The comment is noted. No further response is required.

**Response 6.9**
The comment states that MCL supports the project.

The comment is noted. No further response is required.

**LETTER 7**

**COMMENTER: Petaluma Health Center**
**DATE: May 19, 2024**

**Robin Fies**

**From:** Pedro Toledo <pedrot@phealthcenter.org>
**Sent:** Sunday, May 19, 2024 5:58 PM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** re: Support Letter for Pt. Reyes Station USCG Site Affordable Housing Project
**Attachments:** CLAM-Support-Letter.pdf

You don't often get email from pedrot@phealthcenter.org. Learn why this is important

Dear Enviornmental Planning Representative:

Attached, please find Petaluma Health Center's Public Comments in support of CLAM's Pt. Reyes Station USCG Site Affordable Housing Project.

Best regards,
Pedro

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7.1

May 19, 2024

Ms. Rachel Reid
Environmental Planning Manager
3501 Civic Center Drive, Suite 308,
San Rafael, CA 94903.

Re: *Support* for Point Reyes Station USCG Affordable Housing Project MND

Dear Ms. Reid,

On behalf of the Petaluma Health Center, I am writing to express our strong support for the Pt. Reyes Coast Guard Housing project. Our organization has been dedicated to providing comprehensive and high-quality healthcare to underserved communities for many years. With a network of clinics serving rural communities in West Marin and Sonoma County, we are acutely aware of the health disparities and challenges faced by individuals living in these areas.

7.1

At the Petaluma Health Center, we are deeply committed to advancing health equity and addressing the social determinants of health. We recognize that access to safe and affordable housing is a crucial factor in promoting the overall well-being of individuals and families.

The need for affordable housing for essential workers is particularly pressing in West Marin, where access to such housing is limited, and the cost of living continues to rise. Many essential workers, including those within the healthcare and agricultural sectors, often struggle to find suitable and affordable housing close to their workplace. This housing project presents an opportunity to address this critical need and provide a sustainable solution for those who are vital to our community's well-being.

The Pt. Reyes Coast Guard Housing project aligns with our organization's mission and values, and we believe that it will significantly benefit the broader community. We appreciate the thorough review process undertaken for this project, and we are excited to see it move forward and contribute to the creation of affordable homes in an area where they are greatly needed.

We wholeheartedly support the approval of this project and urge the consideration of the significant positive impact it will have on the health and livelihoods of essential workers and their families in our community.

Sincerely,

Pedro Toledo, JD, MHSA
Interim CEO

Cc: Corey Ohama, Interim Executive Director, CLAM

**1179 N. McDowell Blvd. Petaluma, CA 94954-6559**
**Phone: (707) 559-7500 • Fax: (707) 559-7620**
**www.phealthcenter.org**

## Responses to Letter 7

**Response 7.1**

The comment states that additional affordable housing is needed in Marin County and the Project aligns with their organization's mission and values. The commenter expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 8**

**COMMENTER: Two Valleys Community Land Trust**
**DATE: May 20, 2024**

**Robin Fies**

**From:** Kit Krauss <kit@tvclt.org>
**Sent:** Monday, May 20, 2024 11:13 AM
**To:** EnvPlanning
**Subject:** Pt Reyes Coast Guard Affordable Housing Project
**Attachments:** Coast Guard Support Letter 5.20.24.docx

You don't often get email from kit@tvclt.org. Learn why this is important

Here is a letter from the Two Valleys Community Land Trust in support of the Coast Guard property Affordable Housing Project.

Kit Krauss, Chair

TWO VALLEYS
COMMUNITY LAND TRUST

SAN GERONIMO VALLEY
NICASIO VALLEY

May 20, 2024

envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions.

We, the Board of Directors of Two Valleys Community Land Trust (TVCLT) fully support the project and are excited to see it completed, creating affordable homes in sister community in West Marin.

8.1

The need for affordable housing in our rural communities is critical. Along with CLAM and the Bolinas Community Land Trust we are dedicated to creating, preserving, and sustaining long-term affordable housing in our unincorporated towns and villages. The development of the Coast Guard property is an important step in helping to provide homes for working people and their families.

Working through the arduous process of acquisition, funding, permitting to bring a project like this takes years and it is gratifying that it has finally reached the stage where things can move forward toward realization. We hope that with support from the County we, along with other CLTs, are able to create more affordable housing opportunities to serve the much needed current and future needs for affordable housing in our communities.

Sincerely,

Kit Krauss

Kit Krauss

Board of Directors, TVCLT

Board of Directors
Kit Krauss, Chair
Laura Sherman, Vice Chair
Howie Cort, Secretary
Louis Rosenbaum, Treasurer
Janet Hughes, Director
Tobias Green, Director
Joe Walsh, Director
Suzanne Sadowsky, Director
Tammy Newcomb, Director
Hal Russek, Executive Director

SGVAHA is a nonprofit 501©3 EIN 68-0004389

P.O. Box 152, Woodacre, CA 94973 | info@tvclt.org *email* | www.TwoValleysCLT.org *website*

## Responses to Letter 8

**Response 8.1**

The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 9**

**COMMENTER: EAH Housing**

**DATE: May 4, 2024**

**Robin Fies**

**From:** Clarice Veloso <Clarice.Veloso@eahhousing.org>
**Sent:** Tuesday, May 21, 2024 3:49 PM
**To:** EnvPlanning; Rachel Reid
**Cc:** Eric Vazquez; corey@clam-ptreyes.org; laura.g@clam-ptreyes.org
**Subject:** Support for the Environmental Document of the Point Reyes Coast Guard Housing Project
**Attachments:** Outlook-Logo, comp

**Importance:** High

You don't often get email from clarice.veloso@eahhousing.org. Learn why this is important

Re: Pt. Reyes Station USCG Site Affordable Housing Project
To: Marin County Staff, envplanning@marincounty.org, Attn: Rachel Reid, Environmental Planning Manager
From: Clarice Veloso-Lugo on Behalf of EAH Housing

Dear Marin County Staff,

On behalf of EAH Housing, I am writing to express my strong support for the Environmental Impact Report (EIR) of the Point Reyes Coast Guard Housing Project. After thoroughly reviewing the documentation, I am confident that the potential impacts on the environment have been comprehensively assessed and effectively mitigated.

9.1

EAH Housing is a Marin County-based nonprofit affordable housing developer. We are one of the largest developers in the Western United States and proudly own Point Reyes Family and Senior, affordable housing communities serving low-income residents.

The Point Reyes Coast Guard Housing Project represents a significant step forward in addressing the acute need for affordable housing in West Marin. The project promises to provide much-needed residences for our community, enhancing the quality of life for many families facing housing challenges.

The integration of sustainable practices and careful planning is evident throughout the environmental document, and I am pleased to see such a balanced approach. This project is a prime example of how development can be managed responsibly, benefiting the community and the environment.

I wholeheartedly support the Point Reyes Coast Guard Housing Project and look forward to its successful implementation. Thank you for your attention to this matter and ongoing efforts to improve our community.

Sincerely,

Clarice Veloso-Lugo

**Clarice Veloso-Lugo**
Vice President, Communications

Direct: (415) 991-2794 **CA**, (808) 762-0987 **HI** | clarice.veloso@eahhousing.org
www.eahhousing.org | Twitter | Facebook | Youtube
22 Pelican Way, San Rafael, CA 94901
EAH Housing | CA Lic. 853495 | HI Lic. RB-16985

EAH HOUSING

A roof is just the beginning

**"The mission of EAH Housing is to expand the range of opportunities for all by developing, managing and promoting quality affordable housing and diverse communities."**

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## Responses to Letter 9

**Response 9.1**

The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 10**

**COMMENTER: Save our Seashore**
**DATE: May 22, 2024**

**Robin Fies**

**From:** gbatmuirb@aol.com
**Sent:** Wednesday, May 22, 2024 12:53 PM
**To:** EnvPlanning
**Subject:** Pt Reyes Station USCG Mitigated Neg Dec Comments pasted and attached
**Attachments:** 24-05-22 SOStoCDAreCoastGuard Final.pdf

You don't often get email from gbatmuirb@aol.com. Learn why this is important

# Save Our Seashore

A 501(c)(3) Charitable Organization (EIN 94-3221625)
Founded in 1993 to Protect Marin County's Ocean, Coasts, Estuaries, Watersheds and Creeks
40 Sunnyside Dr, Inverness CA 94937 gbatmuirb@aol.com 415-663-1828

May 22, 2024

To: County of Marin Community Development Agency (CDA) envplanning@marincounty.org

Re: Point Reyes Station USCG Coastal Permit and Conditional Use Permit Draft Initial Study/Mitigated Negative Declaration (MND)

Dear CDA: I am personally a CLAM supporter and would like to support their Coast Guard Project, but I also run the above environmental advocacy organization and in that capacity find the MND's text and graphics concerning ESHA buffers incomplete, confusing, and incorrect....thus violating CEQA's intent to inform the public. I left messages at CDA this morning (for both Michelle Levenson and Rachael Reid) in an attempt to get clarity on this confusion, but did not receive any call back, thus this list of concerns. 10.1

**Section 2.2.4**

Section 2.2.4 states "*Activities within the 100-foot CCC seasonal wetland buffer include removal of nonconforming structures.*" But this 100-foot buffer is not shown on either Figure 2.2.-3 or Appendix B Figure 4...both of which show only the proposed reduced 50-foot wetland buffer. Appendix B Table 1 also shows data for only a 50-foot wetland buffer. Due to this incompletion, it is not possible to know via text or graphics what "structures" within the 100-foot wetland buffer are being removed. Hardscapes are not structures. 10.2

Section 2.2.4 also introduces the confusing term "aquatic ESHAs" that refer to both the LCP riparian SCA ESHA (with a 50-foot buffer) and the CCC seasonal wetland WCA ESHA (with a 100-foot buffer). Due to this confusion it is often impossible to know which ESHA the document is referencing when it refers to "aquatic buffers." 10.3

There are 4 seasonal wetlands in the project area. Estimating a 100-foot buffer around each, it appears that only Building 104 would conflict a 100-foot buffer around the wetland that is just south of the northern most wetland. I understand the desire to grandfather existing non-conforming structures, but raise the question of whether this one conflict at one wetland needs to trigger a 50% buffer reduction in all buffers for all wetlands. The concern here is that establishing a reduced buffer where in fact no reduction is needed could open a future door to development in the 50-100 foot area that would otherwise be protected with a 100-foot buffer. Similarly, it is not clear why a conflict at one edge of a 100-foot buffer should trigger a reduction on all edges of the buffer. 10.4

**Figure 2.2-3**

1

Figure 2.2-3 has a number of problems. First, it notes a "25-foot ESHA Terrestrial Buffer." That statement is inconsistent with the scale on Figure 2.2-3 as well as inconsistent with Appendix B Figure 4 where that same graphic is noted as ""Maximum Terrestrial ESHA Buffer (50'). It appears that the Figure2.2-3 reference is incorrect

10.5

1

**Table 2**

Table 2 also refers to a *"Minimum 50' Coastal Stream and ESHA Buffer."* But Section 2.2.4 refers to 50 feet as the standard (not minimum) riparian buffer, so Table 2's use of the term "minimum" is incorrect and misleading when the 100-ft wetland buffer (reduced to 50') is also described (by Table 1) as a *"Minimum 50' Wetland ESHA Buffer."* Table 2 also describes 8,823 sq ft of paving to be removed from the 50' Riparian Buffer, but neither Figure 2.2-3 nor Figure 4 indicates any paving, let alone paving within the 50' Riparian Buffer. I am guessing that there may be paving within 50-100 feet of the wetland buffer, but neither the paved area not the 100-foot buffer are shown.

10.6

**Figure 4**

10.7

Figure 4, under "Setbacks," states "*Reduced Coastal Stream and Riparian ESHA Buffer (50').*" That statement is incorrect. The 50' Coastal Stream and Riparian ESHA Buffer has not been "reduced."

10.8

Figure 4 also refers to "*Wetland ESHA Buffer (50').* That is also incorrect. It should read "Wetland ESHA Buffer Reduced to 50'."

10.9

Figure 4 does not number the structures shown, whereas Figure 2.2-3 numbers the structures for easy reference, Thus Figure 4 appears to show 2-3 un-numbered buildings south of Building 100C that do not appear on Figure 2.2-3. These building appear to conflict with the 50-foot riparian buffer...are they intended to be removed? But if so, then Table 2 shows no structures removed from the 50' Riparian ESHA Buffer.

Figure 4 is also missing the 3 light tan irregular areas titled "Water Reuse Facility and Leach Field" (on Figure 2.2-3). The leach filed is not a structure, but is the Water Reuse Facility a structure that would conflict with a 100 foot wetland buffer if the buffer were shown around this southernmost wetland area? At the northwest corner of this southernmost wetland area there is a dark graphic that may be an additional solar array (though the MND refers to a singular solar array). Is this a structure that would also conflict with a 100 foot wetland buffer if the buffer were shown around this southernmost wetland area?

10.10

**Pdf Page 121:**

Pdf Page 121 notes *"Buffers for terrestrial ESHA shall be 50 feet, a width that may be adjusted by the County as appropriate to protect the habitat value of the resource, but in no case shall be less than 25 feet."* Please explain how a 50% reduction in a terrestrial buffer would appropriately *protect the habitat value of the resource.*

10.11

**Summary**

Again, I would very much like to support this project, but the above incomplete, confusing, and incorrect information presented in the MND mandates that my organization withhold support until these issues are clarified such that the public can clearly understand the project and its trade-offs.

10.12

Thank you for considering our concerns about the Coast Guard Mitigated Neg Dec.

Gordon Bennett, Save Our Seashore President

2

2

## Responses to Letter 10

**Response 10.1**
The comment provided an introduction to the letter. No response is required.

**Response 10.2**
The comment states that the 100-foot buffer is not shown on either Figure 2.2.-3 or Appendix B Figure 4. The comment states that Appendix B Table 1 shows data for only a 50-foot wetland buffer. The comment states that it is not possible to know via text or graphics what structures within the 100-foot wetland buffer would be removed.

The Draft IS/MND includes Figure 2.2-3, which shows the ESHA buffer with proposed bioretention basin within the ESHA buffer where there are existing accessory structures. The structures that would be demolished within the ESHA buffer include a shed and covered patio. The demolition of existing accessory structures is discussed on Page 2-10 of the IS/MND.

**Response 10.3**
The comment states that analysis in the IS/MND uses the term aquatic ESHAs to refer to both the LCP riparian SCA ESHA (with a 50-foot buffer) and the CCC seasonal wetland WCA ESHA (with a 100-foot buffer) and it is not possible to know which ESHA is referred to when the document refers to aquatic buffers.

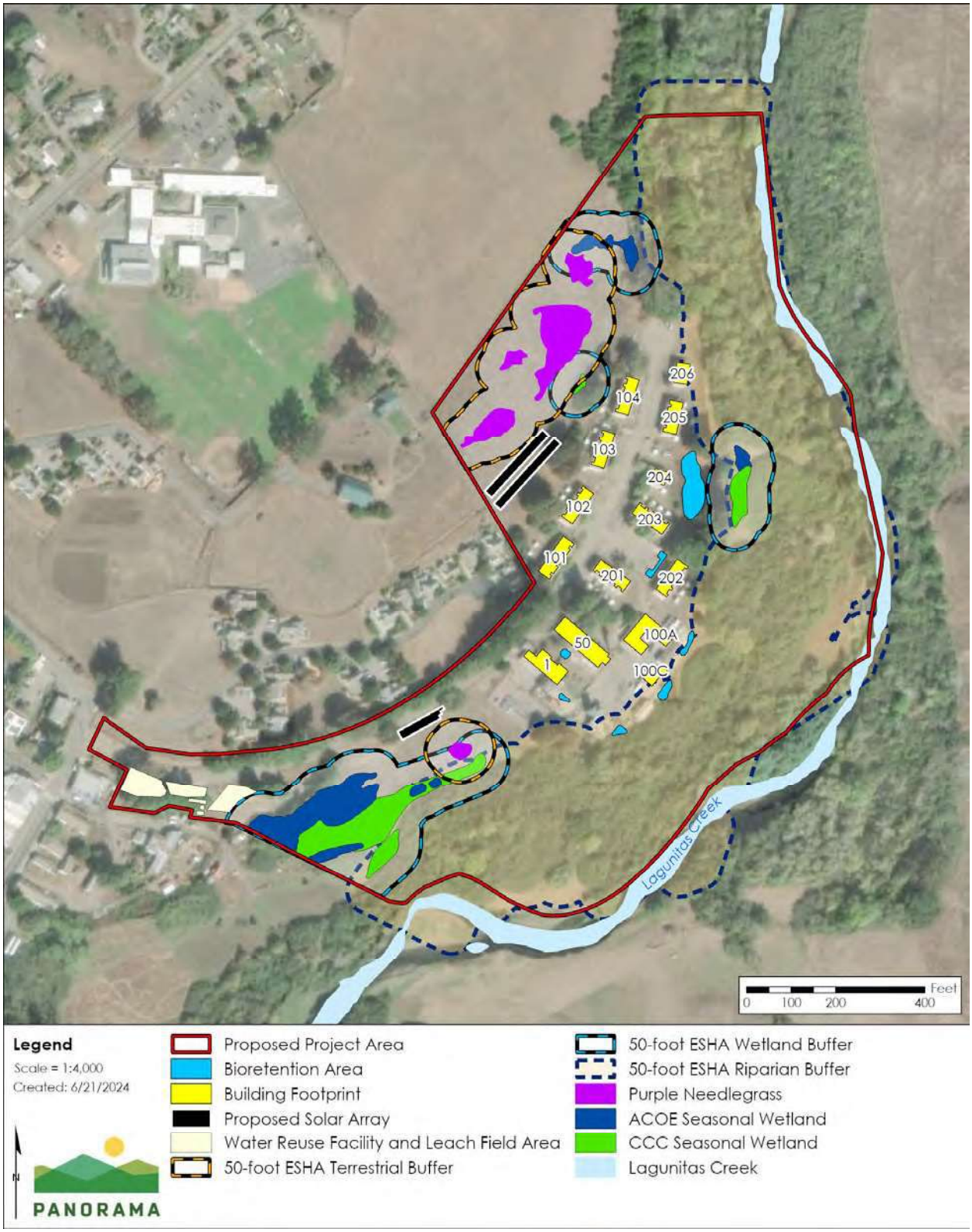
Table 3.2-12 of the IS/MND discusses the buffer areas individually as well as the specific activities that would be conducted within the 100-foot CCC wetland ESHA buffer.

**Response 10.4**
The comment states that there are 4 seasonal wetlands in the project area. The comment states that only Building 104 would conflict with a 100-foot buffer. The commenter asks if the ESHA buffer should be reduced to 50-foot for all the wetlands on-site when only one building would be in conflict.

The 100-foot EHSA buffer would conflict with existing structures that would be demolished where the bioretention area is shown near building 204. Regardless of the buffer size, the project would not increase the number or size of any structures within the ESHA buffer and would remove structures and increase bioretention facilities within the buffer zones, which would provide a net benefit to the ESHA.

**Response 10.5**
The comment states that Figure 2.2-3 is incorrect because the ESHA Terrestrial Buffer is shown as 25-foot instead of 50-foot.

The legend in Figure 2.2-3 is incorrect and the 25-foot ESHA Terrestrial Buffer in the legend should read 50-foot ESHA Terrestrial Buffer. A 50-foot buffer was applied around all terrestrial ESHA resources. The revised map is provide below.


206
104
205
103
204
102
203
101
201
202
100A
50
1
100C
Lagunitas Creek
Feet
0
100
200
400
Legend
Scale = 1:4,000
Created: 6/21/2024
Proposed Project Area
Bioretention Area
Building Footprint
Proposed Solar Array
Water Reuse Facility and Leach Field Area
50-foot ESHA Terrestrial Buffer
50-foot ESHA Wetland Buffer
50-foot ESHA Riparian Buffer
Purple Needlegrass
ACOE Seasonal Wetland
CCC Seasonal Wetland
Lagunitas Creek
PANORAMA

**Response 10.6**
The comment states that Table 2 in Appendix B refers to a Minimum 50-foot Coastal Stream and ESHA Buffer, but Section 2.2.4 of the IS/MND refers to the 50 feet as the standard (not minimum) riparian buffer.

This comment is semantics and does not alter the meaning of the feature or changes the analysis or findings. No revision to the IS/MND is required.

The comment states that Table 2 in Appendix B states 8,823 sq ft of paving would be removed from the 50-foot Riparian Buffer, but the removed paving is not shown in Figure 2.2-3 or Figure 4 of Appendix B. The removed paving is within the location of the bioretention areas shown on Figure 2.2-3. Those bioretention areas are currently paved and/or contain structures that would be demolished as part of the project.

**Response 10.7**
The comment states that a feature in Figure 4 is incorrectly labeled as Reduced 50-foot Coastal Stream and Riparian ESHA Buffer, but the buffer has not been "reduced."

There is no "Figure 4" in the IS/MND. It is unclear what the source of the reference is. No correction is required.

**Response 10.8**
The comment states that a feature in Figure 4 should be changed from "Wetland ESHA Buffer (50')" to "Wetland ESHA Buffer Reduced to 50." No revision is required.

There is no "Figure 4" in the IS/MND. It is unclear what the source of the reference is. No correction is required.

**Response 10.9**
The comment states that Figure 4 does not number the on-site structures. The comment asks about the unnumbered buildings south of Building 100C and whether those buildings would be removed.

Figure 2.2-3 should be used as the main reference for the analysis. The structures south of Building 100C are storage sheds primarily used for maintenance purposes. As stated in Section 2.1 Overview, the project would repurpose the existing mechanical shop and maintenance area (Building 100C) as a workshop and storage area.

**Response 10.10**
The comment states that Figure 4 in Appendix B is missing the areas titled Water Reuse Facility and Leach Field as shown in Figure 2.2-3. The comment asks if the water reuse would conflict with the 100-foot wetland buffer. The comment asks if the solar array conflicts with the 100-foot wetland buffer.

Figure 2.2-3 should be used as the main reference for the analysis. The leach field is sized to accommodate 100 percent of the design flow of the septic system. The leach field would be used

during periods of low irrigation demand, during rain events, and when the subsurface drip system needs maintenance. All subsurface drip dispersal areas and leach fields must comply with local regulations, which require a 110-foot setback from flowing streams, a 50-foot setback from ephemeral stream drainages, and a 75-foot setback from intermittent watercourses or seasonal wetlands. The only areas of new impervious surfaces would include the minimal infrastructure at the wastewater treatment facility. The majority of the area shown is for the leach field. The wastewater treatment facility would produce a high quality of effluent as discussed in the IS/MND.

**Response 10.11**
The comment provides a quote from the IS/MND regarding the reduction of the terrestrial ESHA from 50 feet to 25 feet. The comment asks how reducing the ESHA would protect habitat.

The cited text in this comment is from LCP policy C-BIO-3. As summarized in Table 3.2-12, the project would be consistent with all LCP policies relevant adopted for the purpose of avoiding or mitigating environmental effects.

**Response 10.12**
The comment states that the commenter would like to support the project after their comments in the letter have been addressed.

No revisions to the IS/MND are required. See responses above.

**LETTER 11**

**COMMENTER: California Community Land Trust Network**
**DATE: May 22, 2024**

**Robin Fies**

**From:** Lydia Lopez <lopez@cacltnetwork.org>
**Sent:** Wednesday, May 22, 2024 1:47 PM
**To:** EnvPlanning
**Cc:** Tom McCafferty; Corey Ohama; Leo Goldberg
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project
**Attachments:** 05 22 Comment Letter to Marin County.pdf

You don't often get email from lopez@cacltnetwork.org. Learn why this is important

Ms Reid,
Attached please find our Comment Letter in support of the Pt. Reyes Station USCG Site Affordable Housing Project by CLAM.

Lydia Lopez
CA Community Land Trust Network
Co-Director for Organizing & Partnerships
(415) 967-0497
Donate Now!

11.1

California Community land trust network

May 22nd, 2024

**Marin County**
**Attn: Rachel Reid**
**Environmental Planning Manager**

**Re: Pt. Reyes Station USCG Site Affordable Housing Project**

**Dear Marin County Staff,**

11.2

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. We are in support of the project and are excited to see it completed, creating much needed affordable homes in the community. As you're aware, California is facing an unprecedented shortage of affordable housing and our most vulnerable communities are facing the brunt of that ongoing crisis. This project would bring valuable benefits to the local community, including increased access to affordable housing.

The California Community Land Trust Network represents Community Land Trusts statewide, and as a Network we have been working with CLAM since our 2017 founding. CLAM has demonstrated leadership in the wider community land trust movement in California. Their project is on track to make available critically needed affordable housing by 2027, and after reviewing the details of the project, it is evident that the benefits far outweigh the potential negative impacts, which have been thoroughly addressed with appropriate mitigation measures.

We fully support the approval of this project and we plan to continue supporting CLAM with technical assistance, resources, and tools as they proceed with next steps.

Best regards,

**Lydia Lopez**

Co-Director for Organizing & Partnerships

## Responses to Letter 11

**Response 11.1**
The comment provided an introduction to the letter. No response is required.

**Response 11.2**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 12**

**COMMENTER: Nicole Lavelle**

**DATE: April 30, 2024**

**Robin Fies**

**From:** Nicole Lavelle <nicolelavelle@gmail.com>
**Sent:** Tuesday, April 30, 2024 2:09 PM
**To:** EnvPlanning
**Subject:** I support CLAM's Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from nicolelavelle@gmail.com. Learn why this is important

Attn: Rachel Reid

To whom it may concern,
I am writing in support of the Coast Guard Housing project.

I live in Lagunitas, I work in Olema, and my child attends daycare in Point Reyes Station. I am committed to envisioning and working toward a West Marin that can be sustainable for families and the working class.

Increasing affordable housing and the protection of the environment are two issues of great importance to me.

I am heartened to hear that the CEQA report indicates that the potential impacts to the environment can be mitigated via specific conditions / measures. I trust fully in CLAM and their partners to complete the project in accordance with the required measures to minimize impact.

12.1

Please consider this my heartfelt, enthusiastic support of CLAM's Coast Guard site affordable housing project. It's a bright spot in the difficult housing reality here in West Marin. I look forward to the day it is completed and re-energized with residents.

Thank you for the opportunity to provide comment.

Nicole Lavelle
Lagunitas

--
she/her
nicolelavelle.com

1

## Responses to Letter 12

**Response 12.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 13**

**COMMENTER: Martin Seiler**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Martin Seiler <memerseiler@gmail.com>
**Sent:** Tuesday, April 30, 2024 2:12 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from memerseiler@gmail.com. Learn why this is important

*Dear County Staff,*

*Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. We are in support of the project and are excited to see it completed, creating affordable homes in our community.*

13.1

I lived as a renter in West Marin until 2020, I still work in West Marin and have for 22 years. Please approve more housing for West Marin!

--
Martin Seiler
Cotati, CA
C-415-419-1507

## Responses to Letter 13

**Response 13.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 14**

**COMMENTER: Harriet Moss**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Harriet Moss <harriet@moss.net>
**Sent:** Tuesday, April 30, 2024 2:13 PM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from harriet@moss.net. Learn why this is important

Dear Ms. Reid,

I am writing to express my strong support for the Pt. Reyes Coast Guard Housing project. This is a project that is desperately needed in Point Reyes, where housing stock is limited and housing costs are way above average, making it almost impossible for local businesses to find workers. Those who do work in Pt. Reyes often live an hour+ drive away, which is terrible both for the worker and the environment. It seems that at this point the Coast Guard project has been thoroughly reviewed and any potential issues minimized, so I hope the County will do everything it can to assist CLAM and Eden Housing in completing its development.

Thank you for the opportunity to comment on this important project.

14.1

Best,

Harriet Moss

Harriet Moss
5 Laurel Avenue
Stinson Beach, CA 94970
415-254-3492

## Responses to Letter 14

**Response 14.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 15**

**COMMENTER: Ashley Hebert**

**DATE: May 4, 2024**

**Robin Fies**

**From:** Ashley Hebert <afhebert@gmail.com>
**Sent:** Tuesday, April 30, 2024 2:37 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project ATTN: Rachel Reid

You don't often get email from afhebert@gmail.com. Learn why this is important

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I am in support of the project and am excited to see it completed, creating affordable homes in our community. Affordable homes in our communities are absolutely essential, especially for young people (34) like me who live and work in West Marin. Young people who currently live here and want to stay and raise families...

15.1

With care,

Ashley Hebert

## Responses to Letter 15

**Response 15.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 16**

**COMMENTER: Stephen Marshall**
**DATE: April 30, 2024**

**Robin Fies**

**From:** STEPHEN MARSHALL <smarshall10@gmail.com>
**Sent:** Tuesday, April 30, 2024 3:02 PM
**To:** EnvPlanning
**Cc:** INFO@clam-ptreyes.org
**Subject:** POINT REYES COAST GUARD HOUSING PROJECT

You don't often get email from smarshall10@gmail.com. Learn why this is important

*Dear County Staff,*

*I support the Point Reyes Coast Guard Housing project and am confident that the administrative reviews performed ensure the responsible development of a much needed community resource. I applaud the work applied to this endeavor. Thank you.*

16.1

## Responses to Letter 16

**Response 16.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 17**

**COMMENTER: Bill Lee**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Bill Lee <billhlee@proton.me>
**Sent:** Tuesday, April 30, 2024 3:09 PM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from billhlee@proton.me. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

I appreciate the chance to provide feedback on the environmental assessment for the proposed Coast Guard housing development in Point Reyes. The document demonstrates a comprehensive analysis and the measures outlined should effectively mitigate potential impacts. This project has my full support, as it will help address our community's need for affordable housing options. We look forward to its timely completion. 17.1

Regards,
Bill Lee
Software Engineer
Olema, CA

## Responses to Letter 17

**Response 17.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 18**

**COMMENTER: Kevin and Ingrid Lawson**
**DATE: April 30, 2024**

**Robin Fies**

**From:** kevin lawson <kevin68@att.net>
**Sent:** Tuesday, April 30, 2024 3:17 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from kevin68@att.net. Learn why this is important

Dear County Staff,
Attn: Rachel Reid
Environmental Planning Manager

Thank you for the environmental review of the Pt. Reyes Coast Guard Housing project. We live in the area and walk our dog down by the adjacent creek. It is good to know that the project will not have a negative environmental impact. 18.1

There is a huge need for affordable housing in this community and we very much support the project and think this site is an excellent location for it.

Kevin and Ingrid Lawson
PO Box 1293
Point Reyes CA

## Responses to Letter 18

**Response 18.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 19**

**COMMENTER: Dana Pepp**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Dana Pepp <danapepp@gmail.com>
**Sent:** Tuesday, April 30, 2024 5:58 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from danapepp@gmail.com. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

Dear County staff,

The Pt. Reyes Coast Guard Housing project is absolutely fabulous!
Using abandoned Coast Guard housing and transforming it into a new neighborhood in West Marin is what all housing projects should aspire to be.

I have spent a lot of time West Marin and can attest to the fact that affordable housing is limited and much needed.

This community development in downtown Pt. Reyes is very much needed and will be appreciated by the community for generations to come.

Having this project in West Marin means that many folks who work and live in West Marin will have access to affordable housing.

What a gift!

The project has been thoughtfully designed by the West Marin community and should be an example to affordable housing developers of how to thoughtfully integrate a new housing project in Marin County.

Thank you,

Dana Pepp
San Rafael

19.1

## Responses to Letter 19

**Response 19.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 20**

**COMMENTER: Kathy Hunting**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Kathy Hunting <hunting@gwu.edu>
**Sent:** Tuesday, April 30, 2024 6:48 PM
**To:** EnvPlanning
**Subject:** Point Reyes Coast Guard Housing project

You don't often get email from hunting@gwu.edu. Learn why this is important

To: envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

Thank you for the opportunity to comment on the environmental review document for the Point Reyes Coast Guard Housing project. I understand that the project has been thoroughly reviewed and any potential negative impacts mitigated with conditions. I support the project and am so excited to see it completed, creating affordable homes in our community.

20.1

The 54 homes proposed for this site will be transformative for our community. So many people who grew up here, who work here, or who are from here and now retired cannot afford to live here because home prices and rents are out of reach. I urge your prompt action to facilitate progress toward the construction phase.

Thank you,
Kathy Hunting
Point Reyes Station

## Responses to Letter 20

**Response 20.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 21**

**COMMENTER: Katherine and Bridger Mitchell**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Katherine Mitchell <kmmhighland@gmail.com>
**Sent:** Tuesday, April 30, 2024 7:33 PM
**To:** EnvPlanning
**Cc:** CLAM - Community Land Trust Association of West Marin
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from kmmhighland@gmail.com. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

We are very excited to learn that there has been progress in the process of approving development of the Coast Guard property. Our community is greatly in need of affordable housing, and we support this project wholeheartedly. 21.1

Thank you for all you can do to continue to facilitate this project.

Katherine and Bridger Mitchell
CLAM Supporters
Inverness

## Responses to Letter 21

**Response 21.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 22**

**COMMENTER: Annie O'Connor**
**DATE: April 30, 2024**

**Robin Fies**

**From:** Annie O'Connor <annie.s.oconnor@gmail.com>
**Sent:** Tuesday, April 30, 2024 6:04 PM
**To:** EnvPlanning
**Cc:** Tom McCafferty
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from annie.s.oconnor@gmail.com. Learn why this is important

Dear Ms. Reid,

I am in full support of the Pt Reyes Coast Guard Housing Project. It has been a well-conceived project that is adhering to all requirements, and our West Marin community is in DESPERATE need of more units of affordable housing. Please approve without delay!

22.1

Thank you,
Annie

-
Annie O'Connor

m: +1 (415) 209-3263

## Responses to Letter 22

**Response 22.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 23**

**COMMENTER: Carol Friedman**
**DATE: May 1, 2024**

**Robin Fies**

**From:** Carol Friedman <cjay@horizoncable.com>
**Sent:** Wednesday, May 1, 2024 8:58 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project, Attn Rachel Reid

You don't often get email from cjay@horizoncable.com. Learn why this is important

Dear County Staff,

I want to hank you for this opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. We are in support of the project and are excited to see it completed, creating affordable homes in our community. This is an important initiative that will make it possible for ordinary folks (especially those who work in West Marin) to live in town and participate in our small town community. 23.1

*Best,*
*Carol Friedman*

Carol Friedman
35 Viento Way, Point Reyes Station
415-663-9512
cjay@horizoncable.com

## Responses to Letter 23

**Response 23.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 24**

**COMMENTER: Owen Clapp**
**DATE: May 1, 2024**

**Robin Fies**

**From:** Owen Clapp <owenclapp@gmail.com>
**Sent:** Wednesday, May 1, 2024 6:17 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG affordable housing

You don't often get email from owenclapp@gmail.com. Learn why this is important

Dear County Staff,

I am writing in strong support of this much needed affordable housing project.

Thank you for your work making this possible for the West Marin communities.

Owen

24.1

## Responses to Letter 24

**Response 24.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 25**

**COMMENTER: Suzanne and John Speh**
**DATE: May 2, 2024**

**Robin Fies**

**From:** Suzanne Speh <sharmon2@mindspring.com>
**Sent:** Thursday, May 2, 2024 7:03 AM
**To:** EnvPlanning
**Subject:** Point reyes station uscg site affordable housing project

You don't often get email from sharmon2@mindspring.com. Learn why this is important

Attn: Rachel Reid

*Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. My husband and I are in support of the project and are excited to see it completed, creating affordable homes in our community. Let's get this show on the road!!!*

*Suzanne and John Speh*

Sent from my iPhone

25.1

## Responses to Letter 25

**Response 25.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 26**

**COMMENTER: George Clyde**
**DATE: May 4, 2024**

**Robin Fies**

**From:** gclyde11@gmail.com
**Sent:** Saturday, May 4, 2024 8:35 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from gclyde11@gmail.com. Learn why this is important

To Marin County Environmental Planning Dept.
Attn: Rachel Reid, Environmental Planning Manager

I write to express my support for the Pt. Reyes Coast Guard Housing Project and the approval of the CEQA environmental document. As a community member, a leader of the East Shore Planning Group and a sometimes journalist, I have followed the progress of this project from the very beginning, before the property was conveyed to Marin County. I applaud CLAM and the County for reaching this stage, and support its approval and moving to the next stage for this important project, that will create more affordable housing which is critically needed for West Marin. 26.1

Thank you,

George Clyde
Marshall, CA

## Responses to Letter 26

**Response 26.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 27**

**COMMENTER: Wil Levine**
**DATE: May 5, 2024**

**Robin Fies**

**From:** Wil Levine <wlevinegm@gmail.com>
**Sent:** Sunday, May 5, 2024 5:43 PM
**To:** EnvPlanning
**Subject:** re: Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from wlevinegm@gmail.com. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

Dear Staff,

I support this project. We need more affordable homes in our community. This project seems like an ideal way to accomplish that goal. I feel that the review has been complete, and that the mitigations will minimize the potential environmental impacts. 27.1

Sincerely,

Wil Levine

## Responses to Letter 27

**Response 27.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 28**

**COMMENTER: Betty Pagett**
**DATE: May 5, 2024**

Dear County Staff, May 6, 2024

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I am fully in support of the project and am excited to see it completed, creating affordable homes for the Point Reyes

envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

community. I appreciate how much community participation has been part of this proposal from the beginning. Thanks to Rep. Huffman and all the county staff for the constancy through it all.

Rev. Betty Pagett

Now: 159 Wilson Street, Petaluma, CA 94952

28.1

## Responses to Letter 28

**Response 28.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 29**

**COMMENTER: Megan and Tom Pillsbury**
**DATE: May 6, 2024**

**Robin Fies**

**From:** megan pillsbury <mopillsbury@gmail.com>
**Sent:** Monday, May 6, 2024 8:00 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from mopillsbury@gmail.com. Learn why this is important

re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

Dear Ms. Reid and County Staff,

We appreciate your posting the environmental document for the Pt. Reyes Coast Guard Housing Project, which allows us an opportunity to voice our wholehearted support for it to move forward. A great deal of work has already been done to determine how to minimize its potential impacts to the environment.

29.1

The 15 buildings on the former Coast Guard site–which currently sit empty–would help mitigate the crucial need in our Pt. Reyes community for affordable housing. We are confident that CLAM and Eden Housing are committed to seeing this project through and have the expertise needed to care for the natural space while creating 45 quality living spaces for its residents.

We look forward to your approval of this phase in the permitting process for this project.

Many thanks for your work and time,
Megan & Tom Pillsbury
305 Vision Road
Inverness, CA 94937

## Responses to Letter 29

**Response 29.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 30**

**COMMENTER: Jen Levine**
**DATE: May 6, 2024**

**Robin Fies**

**From:** Jennifer Levine <jen@levine.net>
**Sent:** Monday, May 6, 2024 10:49 AM
**To:** EnvPlanning
**Subject:** Public Comment: Support for Coast Guard Housing

[You don't often get email from jen@levine.net. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Environmental Planning Division,

I am writing to you today in full support of the Coast Guard Housing project.

The 36 affordable townhomes and 15 affordable apartment units are going to provide much needed housing for West Marin. Additionally, this project creates a space for community education and will reconstruct a playground, two amenities that improve quality of life for residents and visitors. 30.1

This project will also improve and protect the natural environment it is located in. By implementing a new on-site wastewater treatment system and removing non-residential structures in order to protect the environmentally sensitive habitat areas, this project will not be causing detrimental harm to the environment.

We are in a housing crisis, and in order to combat this issue we must build more housing. This project is a great step to housing more individuals in West Marin. I encourage your approval and support of this project.

Sincerely,
Jen Levine
415.480.9535

## Responses to Letter 30

**Response 30.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 31**

**COMMENTER: Cathleen Dorinson**
**DATE: May 7, 2024**

**Robin Fies**

**From:** C Dorinson <cdorinson@hotmail.com>
**Sent:** Tuesday, May 7, 2024 10:43 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from cdorinson@hotmail.com. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

Thank you for all the hard work you and others did to create the document for our local housing project at the old Coast Guard site. I was impressed by how detailed the report is on so many aspects of each phase of the construction, etc. And I strongly support this project going forward as soon as possible to help those in our community who need secure and stable housing in this competitive market.

31.1

Cathleen Dorinson
Point Reyes Station, CA

## Responses to Letter 31

**Response 31.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 32**

**COMMENTER: David Moser**
**DATE: May 9, 2024**

**Robin Fies**

**From:** David Moser <dmoser@emsllp.com>
**Sent:** Tuesday, May 7, 2024 11:55 AM
**To:** EnvPlanning
**Subject:** Comments: US Coast Guard Affordable Housing in Point Reyes Station
**Attachments:** IMG_8175.jpeg

You don't often get email from dmoser@emsllp.com. Learn why this is important

Dear Environmental Planning:

I have reviewed the proposed Mitigated Negative Declaration (MND), and have one comment.

The MND is focused on construction-related impacts. The MND fails to analyze the impacts which the large number of new residents (post-construction) will have on biological resources and water quality associated with Lagunitas Creek. People already access the creek through the USCG property. There are already benches and tables in the streamside acacia tree forest on the USCG property. And within the last few weeks, someone has placed a metal and wood picnic table/bench set on a gravel bar in the middle of the river! A photo is attached, which was taken on May 5, 2024. This is on the USCG property.

32.1

Once construction is complete and scores of new residents move in, the impacts on Lagunitas Creek will be substantial and severe. These impacts need to be analyzed, and mitigation measures imposed to prevent these impacts.

Sincerely,

**David Moser**
415-816-6800
dmoser@emsllp.com



## Responses to Letter 32

**Response 32.1**
The comment states that the IS/MND did not analyze potential biological and water quality impacts on Lagunitas Creek from new residents moving into the project area. The commenter states that people already access Lagunitas Creek through the project site. The letter includes a photo of a picnic table that someone placed near the creek.

The existing development on the project site includes stormwater inlets, which convey stormwater from the site directly to outfalls into the riparian areas adjacent to Lagunitas Creek. There is currently no treatment of the site runoff prior to the stormwater outfall. Construction and operations would not be taking place in or immediately adjacent to Lagunitas Creek, and a 50-foot riparian ESHA buffer would be implemented to protect sensitive riparian habitat. The project design includes removal of existing structures and impervious surfaces in proximity to riparian areas and Lagunitas Creek and replacement of those structures with bioretention areas to improve water quality. Because the project would add new bioretention features, which could reduce discharge of sediment or other water quality pollutants to Lagunitas Creek, the potential impact to Lagunitas Creek from sediment loads generated at the project site would be potentially beneficial and less than significant.

The project would adhere to the 50-foot riparian ESHA buffer during operations and would not provide direct access to Lagunitas Creek. Although people may still access the creek through the project site, the project is not responsible for people who may trespass in the future. Furthermore, as noted by the commenter, people already access the creek so the development of the project would not provide a new access point. The comment also did not provide an example, nor a fair argument based on substantial evidence, of how the presence of additional people would result in "substantial and severe" impacts to Lagunitas Creek. The design of the project would be beneficial to water quality in Lagunitas Creek due to enhanced treatment of runoff.

**LETTER 33**

**COMMENTER: Wendy Friefeld**

**DATE: May 4, 2024**

**Robin Fies**

**From:** Wendy Friefeld <wkfrie@yahoo.com>
**Sent:** Thursday, May 9, 2024 12:31 PM
**To:** EnvPlanning
**Subject:** Point Reyes USCG Affordable Housing Project

You don't often get email from wkfrie@yahoo.com. Learn why this is important

The environmental review for this project adequately addresses any concerns regarding septic requirements, impacts to Lagunitas Creek, and any other concerns.

I am in full support of this project which will bring needed housing to West Marin.

Wendy Friefeld
Inverness Park

33.1

## Responses to Letter 33

**Response 33.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 34**

**COMMENTER: Bob Houghteling and Elizabeth Fishel**
**DATE: May 9, 2024**

**Robin Fies**

**From:** Bob Houghteling <bob.houghteling@gmail.com>
**Sent:** Thursday, May 9, 2024 3:23 PM
**To:** EnvPlanning
**Subject:** re: Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from bob.houghteling@gmail.com. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

Dear Ms. Reid and County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. I am very impressed by the multi hundred page document of review that I have looked at on the county website.

34.1

We are in support of the project! Our community needs affordable housing VERY MUCH.

While there were some environmental challenges with the planning, as it is so close to the creek and a new wastewater system had to be created, I am very pleased with the mitigation. Accomodations for runoff and biowaste appear to be robust and creative.

I especially like the all-electric aspect of the buildings and that 24 spaces for electric cars are planned. That the whole project may be energy-neutral is wonderful, with all the rooftop solar and the solar arrays. BRAVO!

Let's get this show on the road!!

Bob Houghteling and Elizabeth Fishel
1 Carlton Place Inverness

## Responses to Letter 34

**Response 34.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 35**

**COMMENTER: Carol Whitman**
**DATE: May 11, 2024**

**Robin Fies**

**From:** Carol Whitman <whitman.carol@gmail.com>
**Sent:** Saturday, May 11, 2024 5:57 PM
**To:** EnvPlanning
**Subject:** CLAM Coast Guard Project - ATTN: Rachel Reid

You don't often get email from whitman.carol@gmail.com. Learn why this is important

I'm happy to be commenting on the environmental document for the Pt Reyes Coast Guard project. It sounds like it's been reviewed very thoroughly. I support the project 100% and am thrilled to see it moving through the process. Can't wait for people to be living there.
Thank you.
Carol Whitman
Pt Reyes Station. CA 94956

35.1

## Responses to Letter 35

**Response 35.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 36**

**COMMENTER: Myn Adess**
**DATE: May 12, 2024**

**Robin Fies**

**From:** Myn Adess <mynedit@gmail.com>
**Sent:** Sunday, May 12, 2024 11:39 AM
**To:** EnvPlanning
**Cc:** Corey Ohama
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

[You don't often get email from mynedit@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Rachel Reid,

I'm writing in support of the continued development of the former Coast Guard Housing site in Point Reyes Station. I'm heartened by the Mitigated Negative Declaration document—it seems all is in readiness for the project to keep moving forward. We've been waiting a long time for this desperately needed affordable housing in West Marin.

Thanks for doing all you can to keep it coming to life.

Best wishes,
Myn Adess
Point Reyes Station

36.1

## Responses to Letter 36

**Response 36.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 37**

**COMMENTER: Lee and Frank Seidner**
**DATE: May 12, 2024**

**Robin Fies**

**From:** Lee Seidner <leliaseidner@gmail.com>
**Sent:** Sunday, May 12, 2024 12:50 PM
**To:** EnvPlanning
**Subject:** environmental document for the Point Reyes Coast Guard Housing Project

[You don't often get email from leliaseidner@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

This email is to comment on the environmental document for the Point Reyes Coast Guard Housing project.
This project has been thoroughly reviewed many times.
We are in support of this project and trust it will be completed soon, so that we will have affordable housing in our community.
Lee and Frank Seidner

37.1

## Responses to Letter 37

**Response 37.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 38**

**COMMENTER: Carla Ruff**
**DATE: May 12, 2024**

**Robin Fies**

**From:** CARLA RUFF <carlainsf@aol.com>
**Sent:** Sunday, May 12, 2024 3:57 PM
**To:** EnvPlanning
**Subject:** Coast guard property

[You don't often get email from carlainsf@aol.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Rachel Reid,
>
>
> I'm writing in support of the continued development of the former Coast Guard Housing site in Point Reyes Station.
> I'm heartened by the Mitigated Negative Declaration document—it seems all is in readiness for the project to keep moving forward. We've been waiting a long time for this desperately needed affordable housing in West Marin.
>
> Thanks for doing all you can to keep it coming to life.
Carla Ruff
415-218-1281/ mobile

38.1

## Responses to Letter 38

**Response 38.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 39**

**COMMENTER: Maureen Cornelia**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Maureen C <macornelia92@gmail.com>
**Sent:** Monday, May 13, 2024 9:59 AM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

[You don't often get email from macornelia92@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

To Rachel Reid,

The completion of the CEQA review for the Coast Guard Housing Project in Point Reyes Station and release of the Initial Study/Mitigated Negative Declaration represents a major milestone in moving this project forward. It appears that any potential impact can be minimized and allow for the continued development of this urgently needed housing. This project is a once in a lifetime opportunity for our small, rural community and it has taken years to reach this point. 39.1

I am in full support of this project and urge County staff to do all that it can to accelerate the process going forward and thus enable the completion of these affordable homes for our community.

Sincerely,
Maureen Cornelia
CLAM member
Inverness, CA

## Responses to Letter 39

**Response 39.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 40**

**COMMENTER: Frank Leahy**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Frank Leahy <frank@backtalk.com>
**Sent:** Monday, May 13, 2024 12:12 PM
**To:** EnvPlanning
**Subject:** Fwd: Pt Reyes Station USCG Site Affordable Housing Project

You don't often get email from frank@backtalk.com. Learn why this is important

Dear Planning Staff,
It is imperative that the County remove any remaining roadblocks to getting this project started, and then completed. And not only remove roadblocks, but be an active partner in helping CLAM to get this project finished as quickly and smoothly as possible.
Sincerely,
– Frank Leahy, Inverness, CA

40.1

## Responses to Letter 40

**Response 40.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 41**

**COMMENTER: Francine Allen**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Francine Allen <francinejacobsallen@gmail.com>
**Sent:** Monday, May 13, 2024 3:23 PM
**To:** EnvPlanning
**Subject:** PRS USCG Site - Attn. Rachel Reid

[You don't often get email from francinejacobsallen@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Re: the submitted CEQA for this affordable housing project

Our community is excited about this project being executed and completed to provide much needed local affordable housing. After initial review of this environmental document, I believe the potential environmental impacts of the project have been sufficiently addressed for the County to issue approval for the project's go-ahead.

Francine Allen
Inverness

41.1

## Responses to Letter 41

**Response 41.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 42**

**COMMENTER: Martha Proctor**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Martha Proctor <mproctor@horizoncable.com>
**Sent:** Monday, May 13, 2024 5:20 PM
**To:** EnvPlanning
**Subject:** Pt Reyes Station USGC Site Affordable Housing Project

You don't often get email from mproctor@horizoncable.com. Learn why this is important

Dear Rachel Reid,
I'm pleased that the County has concluded that the Coast Guard Housing project's design meets its environmental standards – a critical milestone - & hope that no substantial issues are discovered during public comment phase so that the already-delayed project can move to the next phase.
I am writing in support of this housing project & urge the County to push for an expedited schedule as every day more working people move away or leave their jobs because of lack of affordable housing in West Marin.

Thank you.
Martha Proctor
Inverness, CA

42.1

## Responses to Letter 42

**Response 42.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 43**

**COMMENTER: Mamie Yee**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Mamie Yee <mbyee@sbcglobal.net>
**Sent:** Monday, May 13, 2024 5:43 PM
**To:** EnvPlanning
**Cc:** Corey Ohama
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from mbyee@sbcglobal.net. Learn why this is important

Dear Rachel Reid,

I am writing in support of the PRS USCG Site Affordable Housing Project and urge the County to push for an expedited schedule. 43.1

There are so many people in need of this housing, and this housing project has already been delayed too long.

Completion of this housing project if of critical importance to the communities of West Marin.

Thank you,
Mamie Yee
Point Reyes Station

## Responses to Letter 43

**Response 43.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 44**

**COMMENTER: Patti Breitman**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Patti Breitman <eatplants@gmail.com>
**Sent:** Monday, May 13, 2024 5:50 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

[You don't often get email from eatplants@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Attention: Rachel Reid

Dear Ms. Reid,

I am writing in support of the Point Reyes Coast Guard housing project. The affordable housing that it would provide is very much needed in West Marin. As I understand it, any potential impacts have been minimized with conditions.

Thank you for moving this project forward.

Sincerely,
Patti Breitman
12 RALLY Court
Fairfax, California, 94930

44.1

## Responses to Letter 44

**Response 44.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 45**

**COMMENTER: Scoby Zook**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Scoby Zook <scoby@scobyzook.com>
**Sent:** Monday, May 13, 2024 6:01 PM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

[You don't often get email from scoby@scobyzook.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear County,

I would like to comment on the environmental document regarding the Coast Guard Project in Point Reyes Station. 45.1

I believe that the project has been thoroughly reviewed and should go forward. In fact, it should be sped up, as it has taken far too long to reach this point.

I am 100% in favor of this project and can't wait to see this desperately needed affordable housing in my community.

Sincerely,

Scoby Zook

(c) 415-261-7792
(h) 415-669-7313

## Responses to Letter 45

**Response 45.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 46**

**COMMENTER: Kathy Maxwell**
**DATE: May 13, 2024**

**Robin Fies**

**From:** Katherine Maxwell <katmax5@gmail.com>
**Sent:** Monday, May 13, 2024 7:57 PM
**To:** EnvPlanning
**Subject:** Re:Pt. Reyes Station USCG Site Affordable Housing Project

[You don't often get email from katmax5@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Attn: Rachel Reid

Dear County Staff...

I am a 20 year member of this community and a strong supporter of the efforts and energy put out by CLAM to create affordable housing in our community.

The CLAM team has made sure that the work they are doing is thorough.

I look forward to seeing this project completed.

Thank you so much ...

Kathy Maxwell

46.1

## Responses to Letter 46

**Response 46.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 47**

**COMMENTER: John Lopez**
**DATE: May 14, 2024**

**Robin Fies**

**From:** John Lopez <johnlopez8801@gmail.com>
**Sent:** Tuesday, May 14, 2024 8:31 AM
**To:** EnvPlanning
**Subject:** Please approve the Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from johnlopez8801@gmail.com. Learn why this is important

To Rachel Reid
Environmental Planning Manager

As a resident and homeowner in Point Reyes since 1988 I urge our county leaders to approve this project without further delay or studies. The greatest of efforts have been made to cover all the concerns of this project. The compromises have been made on all sides. 47.1

We remember what town was like with the USCG families enriching our town. We know that this project will allow more families and seniors to enrich our town.

Please approve this vital project in our community.

Regards,
John Lopez
Point Reyes Station

## Responses to Letter 47

**Response 47.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 48**

**COMMENTER: Michael Neuman**
**DATE: May 14, 2024**

**Robin Fies**

**From:** michael neuman <bamasailor@gmail.com>
**Sent:** Tuesday, May 14, 2024 8:52 AM
**To:** EnvPlanning
**Subject:** Attention to Rachel Reid

You don't often get email from bamasailor@gmail.com. Learn why this is important

Hello Rachel

I'm writing to support the approval of the Coast Guard housing project in Point Reyes Station. As is well known, affordable housing is urgently needed in West Marin, and in fact all of Marin. I've been participating in and following this project closely as a resident over the last years. It's been a long slow process, but needs to be speeded up! It's been so carefully planned and designed with wonderful community input. 48.1

If you have any questions, please let me know. Happy to discuss. I've been involved in projects like this for 40 years, including two stints as a development review planner at the county level.

Best regards,
Michael

Michael Neuman

PROFILE https://www.linkedin.com/in/michael-neuman-b2b4b033/

BOOKS amazon.com/author/michaelneuman

ARTICLES https://scholar.google.co.uk/citations?user=waCUbhgAAAAJ&hl=en

## Responses to Letter 48

**Response 48.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 49**

**COMMENTER: Kris Brown**
**DATE: May 14, 2024**

**Robin Fies**

**From:** Kris Brown <krisbrown681@gmail.com>
**Sent:** Tuesday, May 14, 2024 8:53 AM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** Pt Reyes Station USCG SITE AFFORDABLE HOUSING

You don't often get email from krisbrown681@gmail.com. Learn why this is important

Dear Rachel and Reid,

I am writing in support of this project and urge the County to push for an expedited schedule.

I am pleased that the County concluded that the Coast Guard Housing meets the environmental standards. 49.1

Completion of this project is critical to the communities of West Marin. This project has already been delayed and needs to move on to the next phase.

Thank you,
Kris Brown
Inverness

## Responses to Letter 49

**Response 49.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 50**

**COMMENTER: Barbara Gaman**
**DATE: May 14, 2024**

**Robin Fies**

**From:** Barbara <bgaman@hotmail.com>
**Sent:** Tuesday, May 14, 2024 10:43 AM
**To:** EnvPlanning
**Cc:** corey@clam ptreyes.org
**Subject:** Coastguard housing

[You don't often get email from bgaman@hotmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Rachel Reid,
I am delighted to read that the Coast Guard housing project is finally moving ahead! The news that the project design meets environmental standards is a welcome relief. We in the community who have had unwavering support for CLAM and all its projects are more than ready to see this housing being put in place. Our community is very much in need of affordable housing.
Thank you for all your work and hopefully the project can be moved forward on an expedited schedule.
Sincerely,
Barbara Gaman
Inverness, CA
Sent from my iPhone

50.1

## Responses to Letter 50

**Response 50.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 51**

**COMMENTER: Jane Stringer and James Grant**
**DATE: May 14, 2024**

**Robin Fies**

**From:** jane stringer <jstringer2164@gmail.com>
**Sent:** Tuesday, May 14, 2024 1:26 PM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from jstringer2164@gmail.com. Learn why this is important

Attn: Rachel Reid, Environmental Planning Manager

Dear County Staff,
We are writing in support of the Coast Guard housing project in Pt. Reyes going forward as quickly as possible. CLAM has worked hard on this CEQA process and has done all due diligence to make sure any environmental issues will be mitigated. Our community is in dire need of affordable workforce housing and this project will be a huge step in that direction.

Jane Stringer and James Grant

51.1

## Responses to Letter 51

**Response 51.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 52**

**COMMENTER: Gigi Gruenke**
**DATE: May 14, 2024**

**Robin Fies**

**From:** Gigi Gruenke <gigigruen@gmail.com>
**Sent:** Tuesday, May 14, 2024 3:44 PM
**To:** EnvPlanning
**Cc:** corey@clam ptreyes.org
**Subject:** Pt. Reyes Station USCFG Affordable Housing Project

[You don't often get email from gigigruen@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Members of Committee,

I'm happy the Coast Guard Housing Project's design meets environmental standards. I favor forward movement on this long delayed project. It's critically important to the working people of West Marin and their families. The lack of affordable housing is a gigantic stumbling block for these hard workers. 52.1

I support this project and urge the county to push forward, following en expedited schedule.

Thank you!

Gigi Gruenke
San Anselmo resident, active with West Marin people and issues.

## Responses to Letter 52

**Response 52.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 53**

**COMMENTER: Katherine Mitchell**
**DATE: May 14, 2024**

**Robin Fies**

**From:** Katherine Mitchell <kmmhighland@gmail.com>
**Sent:** Tuesday, May 14, 2024 3:45 PM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** PRS USCG Site Affordable Housing Project

You don't often get email from kmmhighland@gmail.com. Learn why this is important

*Thank you for allowing the community to comment on the CEQA process. I have been following this project for many years, and know that it has been designed with care to minimize any possible environmental impact. This has long been the most exciting project in our community to create a significant number of much needed affordable housing units, and receives well deserved support of the good people who live here.*

*Katherine Mitchell*
*Enthusiastic CLAM Supporter*

53.1

## Responses to Letter 53

**Response 53.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 54**

**COMMENTER: James P. O'Hara**
**DATE: May 14, 2024**

**Robin Fies**

**From:** JamesP O'Hara, MD. <jpoharamd67@gmail.com>
**Sent:** Tuesday, May 14, 2024 5:06 PM
**To:** EnvPlanning; corey@clam-ptreyes.org; Myn Adess
**Subject:** Pt. Reyes Coast Guard Housing Project

You don't often get email from jpoharamd67@gmail.com. Learn why this is important

Dear Rachel Reid,
I am delighted that the Initial Study/Mitigated Negative Declaration is available for review. It appears that the Coast Guard Housing project will have minimal effect on the environment. It is time to move forward with this project so that more affordable housing will be available in West Marin.
Thank you for your efforts and let us forge ahead.

54.1

James P. O'Hara, M.D.
Point Reyes Station

## Responses to Letter 54

**Response 54.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 55**

**COMMENTER: Doris Ober**
**DATE: May 15, 2024**

**Robin Fies**

**From:** Doris Ober <dorisober1@gmail.com>
**Sent:** Wednesday, May 15, 2024 12:20 PM
**To:** EnvPlanning
**Subject:** Coast Guard property

[You don't often get email from dorisober1@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Rachel Reid,
I hope you'll go ahead with the Point Reyes Coast Guard Housing project. Our community is in great need of additional and affordable housing.

Thanks for your support,
Doris Ober

55.1

## Responses to Letter 55

**Response 55.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 56**

**COMMENTER: Mary Winegarden**
**DATE: May 15, 2024**

**Robin Fies**

**From:** Mary D Winegarden <mwinegar@sfsu.edu>
**Sent:** Wednesday, May 15, 2024 12:56 PM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** Pt. Reyes USCG Site Affordable Housing

You don't often get email from mwinegar@sfsu.edu. Learn why this is important

Dear Rachel Reid,

As a resident of Inverness Park, I'd like to say how glad I am that the Coast Guard Housing project's design in Pt. Reyes has met its environmental standards—good news indeed.

56.1

Now I hope that the long-awaited project can move forward quickly to the next phase. As you know, this housing project is extremely important to the well-being of our community in West Marin—where the lack of affordable housing has been a serious problem for years. We know a number of people who work in the community but can't live here due to the high cost of housing, and so they've had to move elsewhere (and can no longer work here either).

I urge the County to move quickly on this project on an expedited schedule.

Many thanks,
Mary Winegarden
Inverness Park, CA

## Responses to Letter 56

**Response 56.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 57**

**COMMENTER: Michael Malloy**
**DATE: May 15, 2024**

**Robin Fies**

**From:** Michael Malloy <mgmalloy888@yahoo.com>
**Sent:** Wednesday, May 15, 2024 1:14 PM
**To:** EnvPlanning
**Subject:** Pt Reyes Station USCG Site Affordable Housing Project

You don't often get email from mgmalloy888@yahoo.com. Learn why this is important

Attn Rachel Reid, Environmental Planning Mgr.

Dear Ms Reid,
I am writing to support the development of the USCG site in Pt. Reyes to become affordable housing. So many of these sites around the country have become offices, expensive home sites, or, worse, have just sat there, when the military have finished their use. Working families around the country are just crying out for the opportunity to buy or rent these homes and turn them into their best use again. As a Marin citizen, I fully support converting this site to affordable housing and having CLAM supervise this conversion.
Thanks.
Michael Malloy
Novato, CA

57.1

## Responses to Letter 57

**Response 57.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 58**

**COMMENTER: Julie and Randy Merk**
**DATE: May 15, 2024**

**Robin Fies**

**From:** Randy Merk <merkrandy@gmail.com>
**Sent:** Wednesday, May 15, 2024 1:33 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from merkrandy@gmail.com. Learn why this is important

Attn.: Rachel Reid
Environmental Planning Manager

To: Marin County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. My wife, Julie and I have been supporters of this project since the beginning. It looks as if the County has done an excellent job of reviewing all the aspects of the project and developing solutions to, or minimizing the impact of potential problems. Thank you. We are wholehearted supporters of the proposed plan for affordable housing in Pt. Reyes. 58.1

We also want to express our appreciation to the Community Land Trust of West Marin (CLAM) for their unwavering commitment to affordable housing. They have found a way to bring the Point Reyes/West Marin community together on this much-needed project. Seeing CLAM and the community working in lock-step with the County is a model for how these types of projects can be accomplished.

Sincerely,
Julie and Randy Merk
80 Douglas Dr.
Inverness, CA 94937

## Responses to Letter 58

**Response 58.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 59**

**COMMENTER: Ruth Lopez**
**DATE: May 15, 2024**

**Robin Fies**

**From:** Ruth Kantor Lopez <kangaruth17@gmail.com>
**Sent:** Wednesday, May 15, 2024 4:01 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from kangaruth17@gmail.com. Learn why this is important

Attn Rachel Reid, Environmental Planning Manager
and County staff,

I reviewed the environmental document for the Pt Reyes Coast Guard Housing project and am happy to discover that any potential impacts have been reduced to a level where they will not have a significant impact on the environment. I'm in support of this project and encourage its expedited completion. 59.1

The addition of 51 units of affordable housing in Point Reyes Station will be enormously successful in creating more equity in the community.

Thank you for the public comment period.

Ruth Lopez
Point Reyes Station resident of 36 years

## Responses to Letter 59

**Response 59.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 60**

**COMMENTER: Geoff Hoyle**
**DATE: May 16, 2024**

**Robin Fies**

**From:** Geoff Hoyle <geohoyle@gmail.com>
**Sent:** Thursday, May 16, 2024 8:36 AM
**To:** EnvPlanning; corey@clam-ptreyes.org
**Subject:** Pt. Reyes USCG Site Affordable Housing

You don't often get email from geohoyle@gmail.com. Learn why this is important

Dear Rachel Reid,
I was pleased to hear that the County has concluded the Coast Guard Housing project's design meets its environmental standards.

I and my neighbors here in Inverness Park are anxious for this project to be fast-tracked, before we hear of more working people in our community being forced to leave their jobs because they can't find an affordable place to live.

I and my neighbors support the project and hope the County can swiftly help move it forward.

Thank you for your work so far,

Geoff Hoyle.

60.1

## Responses to Letter 60

**Response 60.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 61**

**COMMENTER: Cheryl Higgins**
**DATE: May 16, 2024**

**Robin Fies**

**From:** cheryl higgins gmail <cherylhiggins8@gmail.com>
**Sent:** Thursday, May 16, 2024 4:10 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid

[You don't often get email from cherylhiggins8@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear County Staff,

I would like to weigh in on the environmental document for the Point Reyes Coast Guard Housing Project. I am in agreement with the environmental review and am in support of the Project.

I am a homeowner in Inverness Park and customers of the North Marin Water District. I am satisfied that conditions are being met to protect the environment, including our drinking water.

I am a strong supporter of affordable housing and am very enthusiastic about the Coast Guard Project!

Thank you very much.

Cheryl Higgins

61.1

## Responses to Letter 61

**Response 61.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 62**

**COMMENTER: Angela Giacomini**
**DATE: May 16, 2024**

**Robin Fies**

**From:** Angela Giacomini <agiacomini7@gmail.com>
**Sent:** Thursday, May 16, 2024 4:53 PM
**To:** EnvPlanning
**Subject:** re: Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid Environmental Planning Manager

You don't often get email from agiacomini7@gmail.com. Learn why this is important

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I am in full support of the project and am excited to see it completed, creating affordable homes in our community. Having affordable housing available is critical to a thriving community, to allow community members to both work and live in the same community! 62.1

Sincerely,
Angela

Angela Giacomini
(650) 796-3979

## Responses to Letter 62

**Response 62.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 63**

**COMMENTER: Susan Stingle**
**DATE: May 16, 2024**

**Robin Fies**

**From:** Susan Stingle <susan_stingle@yahoo.com>
**Sent:** Thursday, May 16, 2024 5:08 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid

[You don't often get email from susan_stingle@yahoo.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I'm very much in support of housing in our community.
Susan Stingle

Sent from my iPhone

63.1

## Responses to Letter 63

**Response 63.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 64**

**COMMENTER: Jasmina Etemovic**
**DATE: May 16, 2024**

**Robin Fies**

**From:** Jasmina Etemovic <jasminaetemovic@gmail.com>
**Sent:** Thursday, May 16, 2024 5:18 PM
**To:** EnvPlanning
**Subject:** re: Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid Environmental Planning Manager

You don't often get email from jasminaetemovic@gmail.com. Learn why this is important

*Dear County Staff,*

*Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. We are in support of the project and are excited to see it completed, creating affordable homes in our community.*

64.1

Jasmina Etemovic
415 342-8976
40 Roberts Rd
Inverness, CA 94937

## Responses to Letter 64

**Response 64.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 65**

**COMMENTER: Diane Gale O'Reilly**
**DATE: May 16, 2024**

**Robin Fies**

**From:** Diane O'Reilly <dianegoreilly@gmail.com>
**Sent:** Thursday, May 16, 2024 5:27 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid

You don't often get email from dianegoreilly@gmail.com. Learn why this is important

Dear County Staff,

I am excited to see pt Reyes/ coast guard project continue to progress!

I have been on a wait list for affordable housing in west marin since 2012.
My son attended Inverness elementary and west marin school.
We are proud community members,
looking forward to returning home as soon as the Pt Reyes/ coast guard affordable housing is completed.

65.1

I am glad to hear that the environmental impact report has been reviewed and is ready to be approved!
I understand that the environmental concerns have been addressed and the environmental impact minimized with conditions.

I believe this housing will bring great value west Marin and I'm hopeful we can move forward, so that our beautiful new neighborhood is realized.

Thank you for the opportunity to participate in the process.

Sincerely,
Diane Gale Oreillly
(530) 412-2380

## Responses to Letter 65

**Response 65.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 66**

**COMMENTER: Frances Hinckley**
**DATE: May 16, 2024**

**Robin Fies**

**From:** Frances <francesbiz@yahoo.com>
**Sent:** Thursday, May 16, 2024 6:35 PM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCG Coastal Permit and Conditional Use Permit Draft Initial Study/Mitigated Negative Declaration

You don't often get email from francesbiz@yahoo.com. Learn why this is important

Hi!

These are my comments on the Point Reyes Station USCG project.

I am delighted that this project is moving forward!
The conversion of the site for new housing is much needed and exciting.
I hope that the whole project provides below market housing for LOCALS, which this area has a dire need of.
(Yes, I am aware that is rather unlikely because of HUD/Federal Funding restrictions.
But housing someone in PRS to work in SF, just does not make sense when others are driving from Santa Rosa to work in PRS!)

66.1

Overall, this report seems very thoughtfully done.

I am not entirely convinced about these aspects of the report:

**New Water Treatment Facility.**

66.2

The proposed Facility apparently can handle 10,000 gallons per day.

What happens when the power goes out?

This is a common occurrence in the area, sometimes for days. (For example, January 2023, or an earthquake)
What is the contingency plan for power outages and sewer treatment?

On Page 2-11, the estimated waste water per day is 9,500 gallons. That seems uncomfortably close to the 10,000 gpd maximum capacity. A one bedroom unity, inhabited by a couple, might have an adult child, spouse and 2-3 small children come visit from, maybe Thanksgiving week and the water usage could balloon from 2 people to 7. With a fold out couch and the kids on the floor this is easy for me to imagine for a few days. Additionally, this could easily be occurring in more than one unit on a holiday weekend.

66.3

On Page 3-118, the estimated usage is stated as 8800 gpd. Which is it? How is this estimate made? Is there reason to think that the Historical Water Usage would actually be similar to the new usage?

**Hazardous Materials**

I find it very disappointing that there was no hazardous materials soil testing near building 100C. According to the report, 100C has a history of being a mechanical shop and maintenance area. I should expect hazardous materials to be likely in such an area and feel that area should have the soil tested, in multiple spots around this building. The sole sample done is across the road and, I believe, slightly uphill. I feel this is inadequate testing. 66.4

I would also propose that the area that is to have the new playground would also have at least one soil test done.

**Community Area**

I hope that the community area will remain available for disaster staging, and hope that the plan takes this need into consideration when designing this space. After all, the land and existing infrastructure was paid for with tax dollars, as will be much of the improvements. West Marin has a need for more spaces that can be used in emergencies like wildfires and earthquakes. A mutually beneficial functionality, that takes the larger community needs into account, would be appropriate and wonderful. 66.5

Thank you for your time and consideration.

Sincerely,
Frances Hinckley
Inverness, CA 94937

2

## Responses to Letter 66

**Response 66.1**
The comment provides an introduction to the letter and requests housing of locals.

See response to comment 98.5.

**Response 66.2**
The commenter asks how the wastewater treatment facility would be powered if there is a power outage.

During project operation and occupancy, the project would be all electric. The project includes solar panels and BESS capable of supplying the entire energy use of the project in addition to interconnection to PG&E electrical grid. The project would include an emergency generator that would only be used during emergencies when both electrical power from PG&E and solar and BESS power are not available.

**Response 66.3**
The comment questions the estimated wastewater gallons per day (9,500 gpd) and whether the proposed facility could properly service the project. The commenter asks how the historical water usage was calculated.

SDE prepared a flow analysis memorandum that outlined the historical water usage at the site, the proposed program, and the projected wastewater flow for the maximum occupancy day. The proposed program was based on wastewater unit flow rates for each type of occupancy (residential, staff, visitors, meals). Approximately 8,600 gpd and 8,800 gpd of wastewater would be generated at the site under normal and full occupancy conditions, respectively (Sherwood Design Engineers 2022).

As a precautionary measure, the treatment and disposal systems would be sized for a 10,000 gpd daily flow, which represents a factor of safety of 1.1. A wastewater treatment capacity of 10,000 gpd would provide enough capacity for all residents and staff as well as up to 180 visitors. The project would likely have lower then estimated wastewater flows once the project is constructed based on several factors, such as retrofitting the residential units with low flow or water-efficient fixtures, removing the pool and hot tub, and the galley historically served more meals than what is being proposed. During large special events, when the number of visitors is anticipated to exceed 180, portable toilets are proposed to be brought on site to manage additional sanitary waste and maintain wastewater flow at or below 10,000 gpd.

In addition, the equalization tank, which stores wastewater, is sized for 5,000 gpd, or approximately half a day of flow. The recycled water storage tank would store treated effluents and is sized to provide slightly more than 1 day of recycled water storage, or 10,000 gallons. Recycled water could be used for toilet flushing in community area restrooms, which would need to be dual-plumbed. This would represent a demand of approximately 300 to 400 gpd. The reuse opportunity that is part of the current design is irrigation via a subsurface drip system,

which is sized for 100 percent of wastewater flows and also provides another method of disposal during dry weather. The leach field has capacity to dispose of 200 percent of effluent, and the design does not assume a portion is used for irrigation.

Wastewater flows are calculated based on the full-time residents, employees, daily visitors, and the corresponding unit flows provided by Marin County Regulations. Table 2 of Appendix J provides the basis for determining wastewater flows based on a full occupancy day. A wastewater unit flow rate of 65 gpd/bedroom for all residential units was used based on the historical flows identified above and based on discussions with staff from the County Environmental Health Department. This value is above the estimated historical wastewater flow for the site and above the mean and median of US EPA guidance on residential wastewater flows. Unit wastewater flows for employees, visitors, and the kitchen were obtained from Section 601 of Marin County Regulations for Design, Construction, and Repair of Individual Sewage Disposal Systems; therefore, the estimate of wastewater flows included in the IS/MND are accurate and conform to current standards and guidance.

**Response 66.4**
The commenter questions why hazardous materials soil testing near building 100C was not completed. The comment states that soil testing should have also been completed at the location of the proposed playground.

An Environmental Compliance Due Diligence Activities Report was prepared for the site in November 2016 (Tetra Tech 2016). This report consisted of a Phase I Environmental Site Assessment (ESA), Subsurface Investigation, Asbestos-Containing Survey and Condition/Risk Assessment, Lead-Based Paint Inspection and Risk Assessment, Lead in Soil Sampling Assessment, and NEPA Report for the Site. In 2021, Essel Environmental Engineering & Consulting (Essel) prepared a new Phase I ESA for the project site (Essel Environmental Engineering & Consulting 2021). The 2021 Phase I ESA included review of previous reports for the site (listed above), historical aerial photographs, hazardous records search, and available online materials.

Soil and groundwater sampling was conducted within the area identified as a potential recognized environmental concern (REC) in the Phase I ESA and elevated metals were discovered in the groundwater during the first assessment, which triggered a follow-up investigation. The follow-up investigation determined that the original sample was from a perched water source due to groundwater likely being 40 to 60 feet below ground surface and no groundwater being encountered during the follow-up investigation. Tetra Tech determined that the elevated metals in the original sampling event was not a major concern and therefore no longer considered a REC.

**Response 66.5**
The commenter asks if the project would still be available for disaster staging.

The project site would not be available for disaster staging once the project has been implemented and the site is used for residential housing. However, Building 1 could serve as a

neighborhood-level resilience center to provide shelter and resources during extreme weather events and other emergencies. Limited staging may still be available during emergencies, but the site use would change to occupied residential units.

**LETTER 67**

**COMMENTER: Owen Clapp**

**DATE: May 16, 2024**

**Robin Fies**

**From:** Owen Clapp <owenclapp@gmail.com>
**Sent:** Thursday, May 16, 2024 9:53 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from owenclapp@gmail.com. Learn why this is important

Hello County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I am in support of the project and am excited to see it completed, creating affordable homes in our community.

Owen

67.1

## Responses to Letter 67

**Response 67.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 68**

**COMMENTER: Arron Wilder**
**DATE: May 17, 2024**

**Robin Fies**

**From:** Arron S. Wilder <aswilder@gmail.com>
**Sent:** Friday, May 17, 2024 1:24 AM
**To:** CLAM - Community Land Trust Association of West Marin; EnvPlanning
**Subject:** Support Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from aswilder@gmail.com. Learn why this is important

Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. I am a neighbor of the project site and the land my family owns and actively farms directly abuts the project location. I am encouraged to see that after many months of planning, design and preparation, the project has now been thoroughly reviewed with minimal impacts. We are in support of the project and are excited to see it completed, creating extremely critical long term affordable homes for families and individuals in our community.

68.1

Sincerely

Arron Wilder
Owner/Operator
Table Top Farm
Point Reyes Station, CA
415-209-4705
tabletopfarm.net

## Responses to Letter 68

**Response 68.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 69**

**COMMENTER: Bobbi Loeb**
**DATE: May 17, 2024**

**Robin Fies**

**From:** bobbil@sonic.net
**Sent:** Friday, May 17, 2024 10:16 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from bobbil@sonic.net. Learn why this is important

Dear Rachel Reid and County Staff ,

Thank you for being open to my comment on the environmental

document for the Pt Reyes coast Guard Housing Project .

All of the impacts seem to have been reviewed and any conditions

have been addressed.

I support this project and hope to see it completed ,and create much

needed affordable housing in Pt. Reyes Station.

Thank you ,

affordable hosing in this co

--
Bobbi Loeb

69.1

## Responses to Letter 69

**Response 69.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 70**

**COMMENTER: Nancy Vayhinger**
**DATE: May 17, 2024**

**Robin Fies**

**From:** Nancy Vayhinger <nancy.vayhinger@gmail.com>
**Sent:** Friday, May 17, 2024 11:48 AM
**To:** EnvPlanning
**Subject:** Pt Reyes Station USCG Site Affordable Housing Project

You don't often get email from nancy.vayhinger@gmail.com. Learn why this is important

Dear County Staff,

Thanks for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. I wholeheartedly support this very thorough review of potential environmental impacts. It appears that any potential impacts have been minimized with conditions. 70.1

I am in support of this project! We have been waiting a long time to transform the Coast Guard Housing into much needed affordable homes for our community.

Nancy Vayhinger, Point Reyes Resident

--
Inner Peace Medical and Sports Massage
Point Reyes Station, CA 94956
707-762-7891
www.MedicalSport.healthcare
Nancy@MedicalSport.heathcare

## Responses to Letter 70

**Response 70.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 71**

**COMMENTER: Ann-Sheree Greenbaum**
**DATE: May 17, 2024**

**Robin Fies**

**From:** Ann Sheree Greenbaum <annshereeg@gmail.com>
**Sent:** Friday, May 17, 2024 11:52 AM
**To:** EnvPlanning
**Subject:** Point Reyes Station Coast Guard Neighborhood Project

[You don't often get email from annshereeg@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear County Staff,

Thank you for your good work in these efforts to create greatly needed affordable housing in West Marin. I am appreciative of the thorough analysis of the site thus far to prepare for its rehabilitation. I ask please that you proceed to the next steps for approving final permitting of this project. Our village patiently awaits celebrating the completion of this significant and worthy achievement in our town. What a grand legacy for the county this will be. I offer a resounding "YES" in support of this project!

71.1

With deep gratitude,
Ann-Sheree Greenbaum
CLAM founding member

## Responses to Letter 71

**Response 71.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 72**

**COMMENTER: Murray Suid**
**DATE: May 17, 2024**

**Robin Fies**

**From:** Murray Suid <murraysuid@gmail.com>
**Sent:** Friday, May 17, 2024 4:48 PM
**To:** EnvPlanning
**Subject:** Environmental Impact report regarding the Point Reyes USCG site affordable housing project (mitigated negative declaration)

You don't often get email from murraysuid@gmail.com. Learn why this is important

Dear Ms. Reid,

I have read (well, mostly skimmed) the 171-page report. Although my knowledge of environmental issues is thin, I could understand the report, which I found clear and illuminating.The report's conclusions—that the project will not harm the environment—are persuasive. It seems to me that the project adequately addresses all the key environmental concerns, and hence should move forward. 72.1

I was particularly interested in the septic system—something I know about from having to deal with my own system system. Again, the project planners have adequately addressed this major challenge.

Based on the report, I hope that the project will move forward, providing needed housing while making sure that the environment is cared for.

Best wishes,

Murray Suid
150 Bay View Way
Inverness, CA 94937
415-663-9285 (cell/text)

On May 14, 2024, at 2:41 PM, CLAM Info <info@clam-ptreyes.org> wrote:

Hi Murray,

Here is the link to the county website and here is a link to find more information on sending a letter of support.

Please send letters of support to
envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

## Responses to Letter 72

**Response 72.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 73**

**COMMENTER: Susan Brayton**
**DATE: May 17, 2024**

**Robin Fies**

**From:** Susan Brayton <susanbrayton@horizoncable.com>
**Sent:** Friday, May 17, 2024 6:58 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid

You don't often get email from susanbrayton@horizoncable.com. Learn why this is important

Dear County Staff,

As one of CLAM's founders, I have been working for over 20 years in an attempt to create affordable homes in West Marin. Thank you for the opportunity to comment on the environmental document for the Point Reyes former Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I am in support of the review and am relieved to see it completed.

73.1

**Please note: I am very concerned about how long this project is taking to "get off the ground." Now that the environmental review is completed, I hope that the rehab for this decaying site will be accelerated so that it can be occupied by so many who need it (*now*) at an earlier date than is predicted at this time.**

Thank you for your work.

Yours sincerely,
Susan Brayton
105 Vision Road
Inverness, CA 94937

## Responses to Letter 73

**Response 73.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the project. The commenter also states that the County should expedite approval and construction of the project. This comment is noted for the record. No further response is required.

**LETTER 74**

**COMMENTER: Stephanie Roth**
**DATE: May 18, 2024**

**Robin Fies**

**From:** Stephanie Roth <stephanie@kleinandroth.com>
**Sent:** Saturday, May 18, 2024 8:17 AM
**To:** EnvPlanning
**Subject:** Point Reyes Spa Coast Guard Housing Project

You don't often get email from stephanie@kleinandroth.com. Learn why this is important

Dear Rachel Reid,
I'm writing to urge you to move forward as quickly as possible with the entitlements needed to start construction on the former Coast Guard housing site in Point Reyes Station. As you are well aware, there has been a housing crisis in West Marin for many years now, particularly for those who cannot afford the astronomical housing prices but who are critical members of the community. 74.1

I'm heartened by the Mitigated Negative Declaration document—it seems all is in readiness for the project to keep moving forward. We've been waiting a long time for this desperately needed affordable housing in West Marin.

Thanks for doing all you can to hasten the pace of this project so that people can begin moving in as soon as possible!

Sincerely,

Stephanie Roth
Klein & Roth Consulting
Point Reyes Station, CA

k&r KLEIN & ROTH CONSULTING
**Stephanie Roth**
Principal
www.kleinandroth.com
(510) 821-1514
she/her/they

## Responses to Letter 74

**Response 74.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 75**

**COMMENTER: Heather Furmidge**
**DATE: May 18, 2024**

**Robin Fies**

**From:** Heather Furmidge <heatherfurmidge1@gmail.com>
**Sent:** Saturday, May 18, 2024 10:42 AM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from heatherfurmidge1@gmail.com. Learn why this is important

Dear Rachel Reid,
I am a long-time resident of Point Reyes Station and have been a huge supporter of the Coast Guard Housing Project revitalization and of CLAM's pivotal role in driving this project to completion. As you can imagine, I am very pleased that at long last the County has concluded that the Coast Guard Housing project's design meets the County's environmental standards and hope that no substantive issues are discovered during public comment.

75.1

As you must be well-aware, there is a critical need for affordable housing in West Marin so that this community can retain its vital service workers who want to live here AND work here.

I am writing in support of this project and urge the County to push for an expedited schedule. Every day more of our community members are forced to leave to find housing outside our area.

Thank you,
Heather Furmidge
Point Reyes Station

## Responses to Letter 75

**Response 75.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 76**

**COMMENTER: Norene Jelliffe**
**DATE: May 18, 2024**

**Robin Fies**

**From:** Norene Jelliffe <nkjelliffe@gmail.com>
**Sent:** Saturday, May 18, 2024 10:54 AM
**To:** EnvPlanning
**Cc:** corey@clam ptreyes.org
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from nkjelliffe@gmail.com. Learn why this is important

Dear Rachel Reid,

I am writing in support of the Coast Guard Housing Project. I am pleased that the County has concluded that the project's design meets its environmental standards and hope that no substantial issues are discovered during the public comment phase. That way this project that has already. been delayed will be able to move to the next phase expeditiously. 76.1

Every day more of the work force has to move away or leave their jobs because the lack of critical, affordable housing nearby. The matter is of critical importance!

Thank you for your attention to this matter,
Norene Jelliffe
Point Reyes Station

## Responses to Letter 76

**Response 76.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 77**

**COMMENTER: Julia Liss**
**DATE: May 18, 2024**

**Robin Fies**

**From:** Julia Liss <lissjuliae@gmail.com>
**Sent:** Saturday, May 18, 2024 2:56 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

[You don't often get email from lissjuliae@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Ms. Rachel Reid, Environmental Planning Manager,

I am writing regarding the planned development of the Coast Guard property in Point Reyes Station. Thank you for this opportunity to comment. I urge you to support this project which will be of enormous benefit to our community. We are in dire need of additional and affordable housing to support workers and small businesses in the area. I am excited to see this project completed and hope for your support in seeing it through in a timely way.

77.1

Thank you very much,
Julia Liss
75 Sunnyside Dr.
Inverness, CA 94937

## Responses to Letter 77

**Response 77.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 78**

**COMMENTER: Pamela Ross**
**DATE: May 18, 2024**

**Robin Fies**

**From:** Charles Gay <rossgay108@gmail.com>
**Sent:** Saturday, May 18, 2024 6:55 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

[You don't often get email from rossgay108@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Attention: Rachel Reid, Environmental Planning Manager

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. We believe the project has been thoroughly reviewed and any potential impacts minimized with conditions. We are in support of the project and are excited to see it completed, creating affordable homes in our community. 78.1

Please do everything you can to accelerate the implementation process. So many of our local residents and workers are hoping to move into the refurbished housing as soon as possible. As you know, the affordable housing situation in West Marin is dire, and this is one of the few places in the county where the residents are united behind the project. Let's get it done!

Sincerely yours,

Pamela Ross
Charles Gay
Point Reyes Station

## Responses to Letter 78

**Response 78.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 79**

**COMMENTER: Jerry Hudgins**
**DATE: May 19, 2024**

**Robin Fies**

**From:** Jerry Hudgins <jerry@hudgins.us>
**Sent:** Sunday, May 19, 2024 9:26 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

[You don't often get email from jerry@hudgins.us. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Attn: Rachel Reid
Environmental Planning Manager

Marin County Staff:

As a home owner and full-time resident in Point Reyes Station, I appreciate the opportunity to comment on the CEQA document for the Pt. Reyes Coast Guard Housing project. I've reviewed said document and I'm satisfied that the plan will effectively minimize any potential negative environmental impacts. I fully support this project and encourage the County to move forward with its approval to help ease the lack of affordable housing in our village.

79.1

Jerry Hudgins
Point Reyes Station

## Responses to Letter 79

**Response 79.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 80**

**COMMENTER: Cassandra Benjamin**
**DATE: May 19, 2024**

**Robin Fies**

**From:** Cassandra Benjamin <cassandra@csbconsulting.org>
**Sent:** Sunday, May 19, 2024 9:50 AM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid

You don't often get email from cassandra@csbconsulting.org. Learn why this is important

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. As an Inverness resident with a consulting business with offices in Point Reyes Station, I'm so excited to have the housing closer to opening and to be able to welcome more neighbors. 80.1

Our local businesses, schools, and community all depend on having safe, affordable housing for the many residents who are currently living in substandard/unaffordable housing here, as well as providing housing for our workers who have to commute from afar. West Marin also greatly needs the racial and economic diversity that housing like this will hopefully provide – creating a more equitable community and improving quality of life for all of us.

In terms of the EIR, it appears the project has been thoroughly reviewed and any potential impacts minimized with conditions.

Personally and professionally, I'm in great support of the project and are excited to see it completed, as soon as possible.

Thanks!

*Cassandra*

csb
philanthropic solutions

Cassandra Benjamin (she/her/hers)
510.593.4656
www.csbconsulting.org

## Responses to Letter 80

**Response 80.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 81**

**COMMENTER: Bruce Mitchell and Nancy Hemmingway**
**DATE: May 19, 2024**

**Robin Fies**

**From:** Bruce Mitchell <brucemitchell@horizoncable.com>
**Sent:** Sunday, May 19, 2024 10:45 AM
**To:** EnvPlanning
**Subject:** CLAM Affordable Housing Project Attn: Rachel Reid

[You don't often get email from brucemitchell@horizoncable.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Rachel,

My wife Nancy and I have lived in West Marin for over 50 years and have watched the exodus of singles, couples and families who have not been able to afford housing in our community. It is for that reason that we fully support the Point Reyes Station USCG Site Affordable Housing Project. And now that the environmental documentation has been reviewed and the potential impacts will be minimal, we fully support the County's intention to move forward with the next phase of the project to bring significant affordable housing to our coastal community.

81.1

Sincerely,

Bruce Mitchell and Nancy Hemmingway
Inverness

## Responses to Letter 81

**Response 81.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 82**

**COMMENTER: Jane Curtis**
**DATE: May 20, 2024**

**Robin Fies**

**From:** Jane Curtis <jcurtis.jane@gmail.com>
**Sent:** Monday, May 20, 2024 11:22 AM
**To:** EnvPlanning
**Subject:** re: Pt. Reyes Station USCG Site Affordable Housing Project
**Attachments:** Coast Guard proj spprt ltr.odt

[You don't often get email from jcurtis.jane@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Rachel Reid
Please find attached letter of support for the Point Reyes Station USCG housing project.
Jane Curtis
jcurtis.jane@gmail.com

82.1

envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

Thank you for the opportunity to comment on the completed Mitigated Negative Declaration, as part of CEQA, for the Point Reyes Coast Guard Housing project. It seems that the project has been thoroughly reviewed and that potential impacts can be reduced or lessened through specific mitigation measures. I have great faith in the diligence of CLAM and their partner Eden Housing to comply with and implement all mitigation measures required. As a West Marin resident of Inverness Park for over 45 years, I am in full support of the Point Reyes Coast Guard Housing project, creating affordable homes in our community. It has been a long time coming!

82.2

Sincerely,
Jane Curtis
jcurtis.jane@gmail.com

## Responses to Letter 82

**Response 82.1**
The comment provides an introduction to the letter. No response is required.

**Response 82.2**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 83**

**COMMENTER: Gail Bateson**
**DATE: May 20, 2024**

**Robin Fies**

**From:** Gail Bateson <batesong@gmail.com>
**Sent:** Monday, May 20, 2024 1:43 PM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCS Site Affordable Housing Project

You don't often get email from batesong@gmail.com. Learn why this is important

Dear County Staff/Racehl Reid - Env Planning Mgr

As a West Marin resident I'm writing to express my full support for the development of the Coast Guard property into affordable housing for our community. I understand that the project has been thoroughly reviewed, with conditions made to minimize potential impacts. This project has the full support of the community; I have never heard anyone argue it should not be built. 83.1

As the parent of a restaurant worker in West Marin, I frequently hear about her having to work extra shifts or days to fill in for others because it is so difficult to hore and keep employees, given their typical long commute from where housing is more affordable. Restaurant and shop owners are really struggling to stay open regular hours. I urge you to quickly move along this badly needed project.

Thank you,

Gail Bateson
P.O. Box 896
PRS CA 94956

## Responses to Letter 83

**Response 83.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 84**

**COMMENTER: Mary Morgan**

**DATE: May 20, 2024**

**Robin Fies**

**From:** Mary Morgan <bmsanfran@gmail.com>
**Sent:** Monday, May 20, 2024 3:11 PM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org; Susan Brayton
**Subject:** Point Reyes Station USCG Affordable Housing Project

You don't often get email from bmsanfran@gmail.com. Learn why this is important

Dear Rachel Reid,

I have lived in Point Reyes Station since 2011. Ever since I moved here I have been a big supporter of CLAM and the Coast Guard housing project. I am sorry that all these years later, the housing remains empty. However, I am greatly heartened that the county has determined that the project meets the required environmental standards. I am very hopeful that there will be no delays going forward. 84.1

The additional affordable housing that will be provided by the Coast Guard Project is sorely needed in West Marin. Every single day, community residents have to move away and workers have to quit their jobs because they cannot find affordable housing here. This project should be approached with the utmost urgency.

Thank you,
Mary Morgan
PO Box 484
Point Reyes Station, CA 94945

## Responses to Letter 84

**Response 84.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 85**

**COMMENTER: David Rempel**
**DATE: May 20, 2024**

**Robin Fies**

**From:** David Rempel <dm.rempel@gmail.com>
**Sent:** Monday, May 20, 2024 5:41 PM
**To:** EnvPlanning
**Cc:** corey@clam-ptreyes.org
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from dm.rempel@gmail.com. Learn why this is important

Dear Rachel Reid:
I hope that the county can carry out an expedited schedule for this housing project. We need more affordable housing, as soon as possible. This project will provide this needed housing. The project is already delayed too long. I urge the county to move this project forward at a rapid pace.
Sincerely,
David Rempel
Point Reyes Station

85.1

## Responses to Letter 85

**Response 85.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 86**

**COMMENTER: Sonja Anderson**
**DATE: May 20, 2024**

**Robin Fies**

**From:** Sonja Anderson <sonjajeananderson@gmail.com>
**Sent:** Monday, May 20, 2024 7:07 PM
**To:** EnvPlanning
**Subject:** PtReyes Station USCG Affordable Housing Project

You don't often get email from sonjajeananderson@gmail.com. Learn why this is important

Attn: Rachel Reid, Environmental Planning Manager

Dear Rachel Reid and County Staff,
I'm writing this in order to support the Pt. Reyes Coast Guard Housing Project. The project has fulfilled the requirements of CEQUA. Potential impacts are minimized with conditions. Tis community needs this project to be completed in order to provide homes in this area.

86.1

Sincerely,
Sonja Anderson

P.O. Box 602
Inverness CA 94937
415 497-7896

## Responses to Letter 86

**Response 86.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 87**

**COMMENTER: Catie Clune**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Catie Clune <catieclune@gmail.com>
**Sent:** Tuesday, May 21, 2024 7:44 AM
**To:** EnvPlanning
**Subject:** Point Reyes Coast Guard Housing Project

You don't often get email from catieclune@gmail.com. Learn why this is important

Dear County Staff,

Thank you for the opportunity to comment on the environmental document for the point reyes coast guard housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. I am in support of the project and am excited to see it create more affordable homes in our community. 87.1

According to the Marin County Equity Action Plan at which affordable housing is a pillar, I would strongly recommend we proceed with this project.

Thanks,

-Catie Clune

--
Catie Clune

Catieclune@gmail.com
https://www.catieclune.com/

## Responses to Letter 87

**Response 87.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 88**

**COMMENTER: Suzanne Sadowsky**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Suzanne Sadowsky <suzannesadowsky@comcast.net>
**Sent:** Tuesday, May 21, 2024 8:47 AM
**To:** EnvPlanning
**Cc:** Dennis Rodoni; corey@clam-ptreyes.org
**Subject:** Letter of Support

You don't often get email from suzannesadowsky@comcast.net. Learn why this is important

envplanning@marincounty.org
re: Pt. Reyes Station USCG Site Affordable Housing Project
Attn: Rachel Reid
Environmental Planning Manager

Dear County Staff,

88.1

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions.

I fully support the project and are excited to see it completed, creating affordable homes in West Marin. I am a Board Member of Two Valleys Community Land Trust (TVCLT) and I also serve on the Marin County Commission on Aging representing District 4.

The need for affordable housing in our rural communities is critical. Along with CLAM and the Bolinas Community Land Trust, TVCLT is dedicated to creating, preserving, and sustaining long-term affordable housing in our unincorporated towns and villages. The development of the Coast Guard property is an important step in helping to provide homes for working people and their families.

Working through the arduous process of acquisition, funding, permitting to bring a project like this takes years and it is gratifying that it has finally reached the stage where things can move forward toward realization. We hope that with support from the County we are able to create more

affordable housing opportunities to serve the much needed current and future needs for affordable housing in our communities.

88.1

Sincerely,

Suzanne Sadowsky

**Suzanne Sadowsky**
**415-488-4861**
**415-497-6425**

2

## Responses to Letter 88

**Response 88.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 89**

**COMMENTER: Maalis**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Mr Maalis <maalis@bolinaslandtrust.org>
**Sent:** Tuesday, May 21, 2024 10:01 AM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid Environmental Planning Manager

You don't often get email from maalis@bolinaslandtrust.org. Learn why this is important

Dear Rachel Reid & County Staff,

Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed, and any potential impacts have been minimized with conditions.

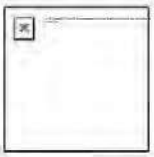
89.1

I support the project and am excited to see it completed, creating affordable homes in the West Marin.

Thank you for your time and consideration.

**Maalis** (he/him)

Project Manager
**Bolinas Community Land Trust**
PO Box 805
Bolinas CA 94924
cell 530-570-9108
office 415-868-9468



## Responses to Letter 89

**Response 89.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 90**

**COMMENTER: Pamalah MacNeily**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Pamalah MacNeily <pamalah23@gmail.com>
**Sent:** Tuesday, May 21, 2024 10:41 AM
**To:** EnvPlanning
**Subject:** Approval of Coast Guard Housing

You don't often get email from pamalah23@gmail.com. Learn why this is important

Supervisors and all staff,

This project is needed to provide housing for seniors, workforce and others. It is needed yesterday.

Marin County is the only place in the Bay Area where the cows live better than the people. The people are expected to live in an active gas station. **This is the only project on the books to give people a place to live that is safe.**

Please approve this project now.

Best,

Pamalah MacNeily

90.1

## Responses to Letter 90

**Response 90.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 91**

**COMMENTER: Gary Ireland and Elizabeth Zarlengo**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Gary Ireland <garyireland9@yahoo.com>
**Sent:** Tuesday, May 21, 2024 12:42 PM
**To:** EnvPlanning
**Subject:** Point Reyes Station Affordable Housing Project on former USCG Site. Attn: Rachel Reid Environmental Planning Manager

[You don't often get email from garyireland9@yahoo.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

To the County Staff,
We appreciate the opportunity to comment on the environmental document for the Point Reyes Station Housing project on the former USCG Site.
It seems the project has been throughly reviewed and it is time to expeditiously move forward on this long awaited desperately needed affordable housing project. We have been in favor of this project since the beginning over 8 years ago.
Please prioritize this project as the process has taken way to long.
Thank you,
Gary Ireland and Elizabeth Zarlengo
Point Reyes Station home owner

91.1

## Responses to Letter 91

**Response 91.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 92**

**COMMENTER: Kerry Livingston**
**DATE: May 21, 2024**

**Robin Fies**

**From:** County of Marin <noreply@formresponse.com>
**Sent:** Tuesday, May 21, 2024 1:36 PM
**To:** EnvPlanning
**Subject:** Re: CLAM and Eden's USCG housing project

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| | |
|---|---|
| Email To: | envplanning@marincounty.org |
| Get Page URL | https://www.marincounty.gov/ |
| To: | Environmental Planning General Contact |
| From: | Kerry Livingston |
| Sender's Email Address: | kmlivings@hotmail.com |
| Subject: | CLAM and Eden's USCG housing project |
| Message: | Dear County Staff,<br><br>Thank you for the opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions. We are in support of the project and are excited to see it completed, creating affordable homes in our community.<br>I appreciate your swift action on this project. As you well know there is pressure to create housing in California and these units will be affordable unlike the other two proposed projects in Pt Reyes. We must get this happening now! |

92.1

## Responses to Letter 92

**Response 92.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 93**

**COMMENTER: Jim Jensen**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Jim Jensen <jimmyjjensen@gmail.com>
**Sent:** Tuesday, May 21, 2024 2:25 PM
**To:** EnvPlanning
**Subject:** Marin Affordable housing comment period open until May 22

You don't often get email from jimmyjjensen@gmail.com. Learn why this is important

Dear County Staff,

Thank you for the opportunity to submit support for the Point Reyes coast guard housing project. It appears the project has been thoroughly reviewed and any potential impacts minimized with conditions as this has been in the works for along time thanks to many of you. I am in support of the project and am excited to see it create more affordable homes in West Marin. 93.1

According to the Marin County Equity Action Plan at which affordable housing is a pillar, I would strongly recommend we proceed thoughtfully and in the spirit of community with this project.

Thank you for your leadership,

-Jim Jensen

## Responses to Letter 93

**Response 93.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 94**

**COMMENTER: Robert Steinberg**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Robert Steinberg <robsteinberg@icloud.com>
**Sent:** Tuesday, May 21, 2024 3:34 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Affordable Housing Project - CEQA Report Public Comment - Ms. Rachel Reid

You don't often get email from robsteinberg@icloud.com. Learn why this is important

Dear County Staff,

As a 20 year resident of West Marin County, I am writing in support of the application of the Community Land Trust of West Marin ( CLAM ) and Eden housing, Inc. (Eden).
I support the expeditious completion of the project to reuse and repurpose the former USCG site located in Point Reyes Station.

94.1

The need for affordable housing units is paramount to the continued social health of Pt. Reyes Station and West Marin. It will help to foster community, at a time when rampant tourism and development is changing the historic character of Pt. Reyes Station and West Marin.

I have reviewed the 689 page CEQA report and I find no impediments that are noted in the report that would prevent the continuation and completion of the affordable housing project in Pt. Reyes Station.

Indeed, on page 5 of report, it states that any effects of the project are mitigated by modifications so that the potential effects of the project are reduced. And, no significant environmental effects are anticipated. This CEQA report notes that any issues that were considered are now mitigated. Indeed, on page 25 and page 56, it notes that there will be substantial environmental improvements occurring because of this project by CLAM and Eden.

94.2

The report itself has many internal contradictions and unsubstantiated concerns (page 32). It uses the word "potential" as an analytical tool. Yet, the word is not substantiated or used with precision.

Nontheless, the fact that the report is favorable to the project moots these report errors and banalities.

In conclusion, I support the application by CLAM and Eden to develop the Coast Guard Neighborhood Project in Pt. Reyes Station.

Sincerely,

Robert Steinberg

2

## Responses to Letter 94

**Response 94.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**Response 94.1**
The comment states that the IS/MND includes internal contradictions and unsubstantiated concerns as the word "potential" is used throughout the document, but not substantiated.

The use of the word "potential" is standard practice in the analysis of environmental impacts under CEQA as the word indicates the presence of possible impacts that could occur in the absence of mitigation or application of regulatory requirements that reduce impacts. For example, there is the potential for accidents to occur, but it is not a certainty. The level of significance for each resource topic is determined by considering the predicted magnitude of the impact including potential impacts. The four levels of impact significance are provided in Section 3.1.2, Approach to Environmental Analysis, of the IS/MND.

**LETTER 95**

**COMMENTER: Dan Morse**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Daniel Morse <dbrockmorse@icloud.com>
**Sent:** Tuesday, May 21, 2024 3:44 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project

You don't often get email from dbrockmorse@icloud.com. Learn why this is important

Attn: Rachel Reid
I am happy to see that the Initial Study/Mitigated Negative Declaration has been completed. I am in complete support of the project and hope the process of construction can continue in an expeditious manner. Sincerely, Dan Morse

Dan Morse
PO Box 395
Inverness, Ca., 94937
home 415-669-1672
cell 415-713-5059
dbrockmorse@mac.com

95.1

## Responses to Letter 95

**Response 95.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 96**

**COMMENTER: Claire Peaslee**
**DATE: May 21, 2024**

**Robin Fies**

**From:** Claire Peaslee <coastliveoak@gmail.com>
**Sent:** Tuesday, May 21, 2024 4:14 PM
**To:** EnvPlanning
**Subject:** Pt. Reyes Station USCG Site Affordable Housing Project Attn: Rachel Reid

You don't often get email from coastliveoak@gmail.com. Learn why this is important

Dear County Staff,

I am one of the many local residents in Point Reyes Station and environs who support the Pt. Reyes Coast Guard Housing project with great enthusiasm. West Marin, as Marin County, is in serious need of affordable housing to maintain the integrity of our community. The so-called Coast Guard project is an unparalleled chance to begin addressing the shortfall here. With appreciation for the review process carried out by the County and others, and the way forward charted, let's advance this project forward.

96.1

Thank you.

CLAIRE PEASLEE
Point Reyes Station

## Responses to Letter 96

**Response 96.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 97**

**COMMENTER: Ed Nute**
**DATE: May 22, 2024**

**From:** County of Marin <noreply@formresponse.com>
**Sent:** Tuesday, May 21, 2024 9:37 PM
**To:** Michelle Levenson <Michelle.Levenson@MarinCounty.gov>
**Subject:** Re: Point Reyes Station USCG Housing Project

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| | |
|---|---|
| Email To: | michelle.levenson@marincounty.gov |
| Get Page URL | https://www.marincounty.gov/ |
| To: | Michelle Levenson |
| From: | Ed Nute |
| Sender's Email Address: | e.nute@nute-engr.com |
| Subject: | Point Reyes Station USCG Housing Project |
| Message: | Michelle – Last year I was asked by Morgan Patton of EAC to look over the written materials for the wastewater treatment and disposal system proposed for the Pt. Reyes Coast Guard Housing Site Redevelopment. Affordable housing in West Marin is certainly needed. Adequate treatment and disposal of the wastewater is very important, and it is important that the |

1

97.1

system works well so it does not put a financial strain on the project and also protects the adjacent community and the environment.

My comments below mostly address the treatment system, which is proposed in the Sherwood Design Engineers, Onsite Wastewater Basis of Design Report, June 9, 2022. I have only a few comments on the disposal system since it has been the subject of considerable study by Questa engineers.

97.2

Existing Gravity Sewer System

My main concern with the wastewater system proposed for the Coast Guard housing is that it relies on the use of the existing gravity sewer system, possibly with some improvements. Conventional municipal sewer systems using gravity sewers can experience peak flows of 300% or more during wet weather due to infiltration and inflow of rainwater and groundwater through leaky joints in the sewer mains and laterals to the buildings. In the East Marin sewer system considerable money is being spent on reducing peak sewage flows with diminishing returns.

2.0 Design Flows - Basing the design of a daily wastewater estimate of 8,800 gpd with a peak flow of 10,000 gpd represents only a 10% peak flow. Such a peak flow in a gravity sewer system may not be achievable and could cause a washout of the active biologic solids in the treatment process it is proposed to make use of the existing gravity sewer system but achieving a 10% peak flow is almost impossible unless the sewers were pressure pipes. With pressure pipes where leaks will come to the surface where they will be noticed, however a small leak in a gravity sewer is difficult to pinpoint and can be costly to successfully eliminate even with current technology. In future years the ground can move or someone can dig down and puncture a gravity sewer and no one will know. Tree roots can also find their way into gravity sewers seeking moisture, which causes leaks and allow high peak flows to

97.3

2

occur during rain storms.
It would be important to find out how much sewage was actually trucked to Two Rock when the housing was occupied by the Coast Guard. In 2009 there was apparently a project in 2009 to fix some sewers which seem to indicate that excess groundwater was entering the sewers was a problem that needed fixing. It would also be important to find out about this 2009 project, which repaired some sewers and manholes. Apparently, some of the sewers are below the groundwater table. Appendix A of the Sherwood report references a 1998 report by ESA on wastewater flows under partial occupancy. This report should be reviewed particularly in reference to peak wet weather flows.

97.4

A solution to this could be to convey sewage to the treatment plant through pressure pipes slip lined through the gravity sewer and laterals. A septic tank effluent pumping (STEP) system would involve installation of an appropriately sized septic tank with a pump at each building cluster which would pump the sewage to the treatment plant. A STEP system would also have the advantage of capturing the solids and rags in the septic tank before they enter the treatment facility. These would have to be periodically pumped out and disposed of at an appropriate disposal location.

97.5

4.1, Table 2 – The influent and effluent BOD and TSS concentrations do not match the concentrations shown on Figure WW2.0.

97.6

4.2 Collection System – This seems to leave the actual wastewater flow to be evaluated later. Flowmeters should be installed on the inlet and outlet of the treatment facility. The influent flowmeter would determine if there is excess wastewater flow entering the plant. The advanced treatment process being considered can be easily overloaded.

97.7

4.3 – The main treatment system is the Membrane Aerated Biofilm Reactor (MABR), followed by media filters. This appears to be a suitable treatment system providing the

97.8

3

throughput flows are relatively constant and rags and sludge are removed ahead of the unit. Appropriate flow equalization is good but will probably not handle peak flows in excess of the 10% design rate. Peak flows caused by infiltration and inflow (I/I) in excess of the 10% could easily upset the system with reduction of treatment efficiency.

The Anaerobic biologic reactor (ABR) is apparently a large septic tank. If there are high flows entering the plant the anerobic sludge may wash and adversely affect the MBAR. The ABR may take a long time to start back up if the solids are washed out.

97.9

4.3 Media Filter - Figure WW1.0 does not show the location of the media filters.

4.4.b Irrigation Demand – Using a CIMIS ET station in Black Point (Novato) is not at all representative of the ET conditions in Point Reyes Station. Black Point can be as much as 20 to 30 degrees hotter than point Reyes Station during the irrigation season. The irrigation demand calculation and should be investigated further.

97.10

4.4 Leach Field – Will there be a replacement leach field as is the current policy for residential septic systems? Half of the leach field is within the "Water Protection Zone" as shown on WW1.0 – does that matter? Is this project being coordinated with the County's project to expand the community restroom facility and install more leach fields?

97.11

4.5 Solids Management – Once a year removal of solids from the ABR seems like a long time. The information on ABR's says that the detention time can be up to as much as 48 to 72 hours (20,000 – 30,000 gallons) and solids and rags should be removed regularly. Gases are also produced and a provision for proper ventilation and odor control.

97.12

4.6 Operations – What is the certification requirement for an operator of a plant of this size? Does the certification requirement change depending on when recycled water is being beneficially reused? Will personnel

97.13

4

from the NMWD be used for the plant operation and maintenance?

4.6 Operations and Monitoring, Table 6, Coliform Bacteria – A daily sample for coliform could represent a considerable operating cost to the project. Such samples cannot be stored very long and need to be analyzed by an approved lab. The nearest lab will be over the hill (NMWD has a lab) and a courier will need to drive a refrigerated sample to the lab each day. Will the daily coliform sampling requirement only apply when recycled water is being used? If that is the case, it may suggest intermittent operation of the recycled water irrigation system and more use of the leach field. In the winter, the recycled water irrigation could be curtailed entirely so that no coliform sampling or testing would be required. Also, if the recycled water is discharged via a subsurface drip system is the coliform test required? This needs to be sorted out with the Water Board.

97.14

Cost Estimate – There is no cost estimate for upgrading the gravity sewer system to reduce I/I or even further investigating the system. Is there an estimate of the O&M costs?

97.15

Questa Engineers, Groundwater and Soils Investigations, July 15, 2022

It should be noted that these investigations were done during a drought year and when the Coast Guard housing was unoccupied.

A possible route for the groundwater from the proposed leach field site to the NMWD wells might be underground flow into Lagunitas Creek then the creek water would flow upstream to the wells. Has the time of travel for this route been calculated?

Any leakage from the gravity sewer system would enter the groundwater that might flow toward the wells. It is important that the gravity sewers including mains and laterals be absolutely tight - see above. The water quality data summarized in Table 5 were from 2021. No bacteriological tests were done and would not be relevant since the Coast Guard Housing was not occupied so it

97.16

5

would not reflect any sewer leakage.
Drainage
Will there be trash capture on drain inlets so plastics and other things don't get into the bay and ocean?

97.17

You can edit this submission and view all your submissions easily.

6

## Responses to Letter 97

**Response 97.1**
The comment provides an introduction to the letter. No further response is required.

**Response 97.2**
The commenter expresses concern about the wastewater system as it relies on the use of the existing gravity sewer system. The comment states that conventional municipal sewer systems that use gravity sewers can experience peak flows of 300% or more during wet weather due to infiltration and inflow of rainwater and groundwater through leaky joints in the sewer mains and laterals to the buildings.

The comment is incorrect as the wastewater infrastructure would be new to the site and are not connected to a municipal sewer system.

**Response 97.3**
The comment states that the daily wastewater estimate of 8,800 gpd with a peak flow of 10,000 gpd represents only a 10% peak flow. The comment states that the peak flow is inadequate and may result in the washout of biologic solids in the treatment facility. The comment states that a small leak in a gravity sewer is difficult to pinpoint and costly to fix.

SDE prepared a flow analysis memorandum that outlined the historical water usage at the site, the proposed program, and the projected wastewater flow for the maximum occupancy day. The proposed program was based on wastewater unit flow rates for each type of occupancy (residential, staff, visitors, meals). Approximately 8,600 gpd and 8,800 gpd of wastewater would be generated at the site under normal and full occupancy conditions, respectively (Sherwood Design Engineers 2022).

As a precautionary measure, the treatment and disposal systems would be sized for a 10,000 gpd daily flow, which represents a factor of safety of 1.1. A wastewater treatment capacity of 10,000 gpd would provide enough capacity for all residents and staff as well as up to 180 visitors. The project would likely have lower then estimated wastewater flows once the project is constructed based on several factors, such as retrofitting the residential units with low flow or water-efficient fixtures, removing the pool and hot tub, and the galley historically served more meals than what is being proposed. During large special events, when the number of visitors is anticipated to exceed 180, portable toilets are proposed to be brought on site to manage additional sanitary waste and maintain wastewater flow at or below 10,000 gpd.

In addition, the equalization tank, which stores wastewater, is sized for 5,000 gpd, or approximately half a day of flow. The recycled water storage tank would store treated effluents and is sized to provide slightly more than 1 day of recycled water storage, or 10,000 gallons. Recycled water could be used for toilet flushing in community area restrooms, which would need to be dual-plumbed. This would represent a demand of approximately 300 to 400 gpd. The reuse opportunity that is part of the current design is irrigation via a subsurface drip system, which is sized for 100 percent of wastewater flows and also provides another method of

disposal during dry weather. The leach field has capacity to dispose of 200 percent of effluent, and the design does not assume a portion is used for irrigation.

Wastewater flows are calculated based on the full-time residents, employees, daily visitors, and the corresponding unit flows provided by Marin County Regulations. Table 2 of Appendix J provides the basis for determining wastewater flows on based on a full occupancy day. A wastewater unit flow rate of 65 gpd/bedroom for all residential units was used based on the historical flows identified above and based on discussions with staff from the County Environmental Health Department. This value is above the estimated historical wastewater flow for the site and above the mean and median of US EPA guidance on residential wastewater flows. Unit wastewater flows for employees, visitors, and the kitchen were obtained from Section 601 of Marin County Regulations for Design, Construction, and Repair of Individual Sewage Disposal Systems.

**Response 97.4**
The comment asks if the IS/MND could provide the amount of sewage trucked from the Two Rock housing facility that was previously occupied by the Coast Guard. The commenter speculates that the site had a sewer problem in 2009. The comment states that some of the on-site sewers are below the groundwater table. The comment references a 1998 report that is provided in Appendix A of the Sherwood report.

No sewer system was included in the previous housing design. The proposed wastewater treatment system uses technology that was not available at the time that the U.S. Coast Guard housing was constructed. The number of trucks used for the prior housing is not relevant to the project.

**Response 97.5**
The commenter suggests that the project should convey sewage to the treatment plant through pressure pipes slip lined through the gravity sewer and laterals. The comment states that a septic tank effluent pumping (STEP) system should be installed to pump the sewage to the treatment plant.

The wastewater treatment system design is subject to design review of Marin County Environmental Health Services as well as permitting by RWQCB. The design will follow the County and RWQCB design requirements.

**Response 97.6**
The comment states that influent and effluent BOD and TSS concentrations in Table 2 do not match the concentrations shown on Figure WW2.0.

The influent and effluent BOD and TSS concentrations are consistent with the applicant's proposal.

**Response 97.7**
The comment states that flowmeters should be installed on the inlet and outlet of the treatment facility so the influent flowmeter could determine if there is excess wastewater flow entering the plant.

Flow monitoring is required as part of Mitigation Measure HYDRO-1.

**Response 97.8**
The comment states that the proposed membrane-aerated bioreactor (MABR) appears to be a suitable treatment system providing the throughput flows are relatively constant and rags and sludge are removed ahead of the unit. The comment states that the system is unlikely to handle peak flows in excess of the 10% design rate. The comment states that anerobic sludge may wash and adversely affect the MBAR if high flows enter the plant.

The wastewater treatment system design is subject to design review of Marin County Environmental Health Services as well as permitting by RWQCB. The design will follow the County and RWQCB design requirements.

**Response 97.9**
The comment states that Figure WW1.0 does not show the location of the media filters.

The media filter is included in the MABR skid.

**Response 97.10**
The comment states that Black Point (Novato) is not representative of the conditions in Point Reyes Station as Black Point can be as much as 20 to 30 degrees hotter than Point Reyes Station during the irrigation season. The comment states that the irrigation demand calculation should be investigated further.

Irrigation demand is estimated using historical precipitation reference evapotranspiration ($ET_0$) data. The closest climate station with daily $ET_0$ is in Black Point, CA, near Novato, and is run by the California Department of Water Resources through their California Irrigation Management Information System (CIMIS). $ET_0$ is determined using the Modified Penman Equation which uses climate information such as temperature, vapor pressure, and wind speed. During the months of June to September, the average daily temperatures in Novato are approximately 8 degrees warmer than Point Reyes Station. However, the daily night average in Point Reyes Station during that time period is approximately 2 degrees cooler than Novato (Weather Spark, 2024). Therefore, Black Point (Novato) provides a reasonable representation of the conditions in Point Reyes Station. Mitigation Measure HYDRO-1 defines additional site-specific monitoring requirements to define the irrigation rate for the site.

**Response 97.11**
The commenter asks if there would be a replacement leach field. The comment states that half of the leach field is within the "Water Protection Zone" as shown on WW1.0. The commenter asks

if the project is being coordinated with an unrelated County project to expand community restroom facilities and install more leach fields.

Refer to Mitigation Measure HYDRO-1 regarding requirements for avoidance of the Protection Zone A. The project is unrelated to any separate project for expansion of community restroom facilities.

**Response 97.12**
The comment states that the proposed annual removal of solids from the ABR seems too long. The commenter states that the detention time in an ABR is 48 to 72 hours (20,000 – 30,000 gallons) and solids and rags should be removed regularly. The comment states that removal of solids would also help provide proper ventilation and odor control.

The detailed operation of the wastewater treatment facility will be conducted per the specifications of the equipment and as required to comply with all permit requirements and mitigation measures. MM HYDRO-1 specifies requirements for water quality that must be achieved. The RWQCB permit will also include standards for operation and maintenance of the facility.

**Response 97.13**

The commenter asks about the certification requirement for the proposed wastewater treatment facility. The commenter asks if the certification requirement changes depending on whether the recycled water is being beneficially reused. The commenter asks if NMWD staff would operate and maintain the facility.

Eden Housing and CLAM would employ a certified wastewater operator to operate, monitor, and maintain the facility. The wastewater treatment system would be designed to meet the State's Recycled Water Standards established in California Code of Regulations, Title 22 for disinfected tertiary treatment to protect groundwater at the site and create a reliable supply of non-potable water for irrigation needs. With tertiary treatment proposed for beneficial reuse, the SFBRWQCB is the lead regulatory agency that would oversee and permit this project. The proposed wastewater system would require a Report of Waste Discharge and Form 200 and a Title 22 Engineering Report as part of the application process to meet the Waste Discharge Requirements of the State. Additionally, the recycled water must meet effluent limits set by the State Water Resources Control Board Order WQ 2014-0153-DWQ "General Waste Discharge Requirements for Small Domestic Wastewater Treatment Systems" (2014 WDR General Order).

**Response 97.14**
The comment states that a daily sample for coliform could represent a considerable operating cost to the project. The commenter asks if the daily coliform sampling requirement only applies when recycled water is reused. The commenter asks if the recycled water that is discharged via a subsurface drip system is also coliform tested.

The water quality monitoring program must comply with monitoring and reporting requirements included in Mitigation Measure HYDRO-1 and the permit from the RWQCB. The mitigation measure specifies which requirements must be met to allow for reuse of the water as irrigation.

**Response 97.15**
The commenter states that there is no cost estimate for upgrading the gravity sewer system. The comment asks for the expected costs for operations and maintenance.

CEQA does not require an economic analysis or cost-benefit analysis. The purpose of CEQA is to identify and analyze potential environmental impacts. As such, operational costs are not included in the CEQA document as they are not relevant to an environmental effect.

**Response 97.16**
The comment states that the drought analysis in the IS/MND is based on investigations that were completed during a drought year when the Coast Guard housing was unoccupied. The commenter states that groundwater from the proposed leach field site to the NMWD wells may flow underground into Lagunitas Creek then creek water would flow upstream to the wells. The comment states that the water quality data summarized in Table 5 was from 2021 when the Coast Guard housing was unoccupied.

Mitigation Measure HYDRO-1 requires regularly monitoring of monitoring wells between the wastewater treatment system and leach field and the NMWD groundwater wells. The monitoring wells will serve as an early detections system. Lagunitas Creek drains toward the bay and flows downhill; groundwater flow in the region also is downhill/downgradient due to gravity.

**Response 97.17**
The commenter asks if the project includes a trash capture device on the drain inlets to capture and prevent plastics from reaching the bay and ocean.

No drain inlets are proposed as part of the project. The project proposes four new bioretention basins that would help to capture stormwater runoff and reduce pollution to Lagunitas Creek and the bay/ocean.

**LETTER 98**

**COMMENTER: MaryAnn Flett**
**DATE: May 22, 2024**

**Robin Fies**

**From:** Mary Anne Flett <coastbirds@gmail.com>
**Sent:** Wednesday, May 22, 2024 11:48 AM
**To:** EnvPlanning
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

[You don't often get email from coastbirds@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear Ms. Reid,

I have multiple concerns regarding the proposed Coast Guard property development. Following are some of my questions and concerns:

- What about disposal of sewage and waste water from this development and its impacts and on our drinking water and on water quality in Lagunitas Creek? The location of this high density development is too close to one of the main sources of Point Reyes Station residents' drinking water. The quality and flavor of our water is already compromised by saltwater intrusion. Even more, I do not believe that the issues of groundwater contamination and water pollution in Lagunitas Creek have been satisfactorily addressed or solved. This project is not worth risking impacts to our community's drinking water or to probable impacts to the already struggling salmon population in Lagunitas Creek. 98.1

- How will the creek and riparian habitat along it be protected from increased recreational demands resulting from a high-density population living next to it? 98.2

-I read that the consultant says that people working on the project will keep an "eye out" for wildlife and strive to protect it during construction. This is complete consultant "speak" and it makes no sense. What are the wildlife qualifications of workers on the site? Why would they stop work to avoid impacts to wildlife if it would mean losing pay? I don't believe that the environmental assessment is sensitive to what is actually proposed and it's dismissive of, or glosses over, some potential impacts from this project. I do hope that if this project goes forth (and I hope it won't as is currently proposed) that appropriate, careful provisions will be made to avoid impacts to nesting birds and other wildlife, according to federal and state laws. 98.3

- This development, in conjunction with others currently proposed in Point Reyes Station (by my estimate that could be about 80-85 new housing units including this project, the one proposed at the intersection of Highway One and Point Reyes-Petaluma Road, and the one at the gas station), will significantly increase the population in our area. The cumulative impacts of that must be considered with regard to how it might change the nature of the existing community, how traffic might increase, how parking demands might be met, how much water really is available for all the development, how sewage and wastewater can be accommodated without adverse impacts, and how the natural environment will be protected. 98.4

-The proponents of this project are looking at the possible benefits of this project through rose-colored glasses. Many people who are longtime residents of California have seen rural areas develop into sprawling suburbia - and this project is not going to be all that different than that in the end. While I applaud the vision of providing affordable housing for local people, I do not believe that it's going to fulfill that need. I doubt that it's even possible to limit availability to just local people. There's already a (supposedly) affordable housing subdivision on the neighboring property that has not turned out to be so (some are second houses for people from Larkspur and elsewhere). What I do believe is that this project will end up providing housing to people from out of the area and changing the character of our community in ways that have unacceptable impacts without achieving the goals that the proponents originally envisioned. 98.5

Please consider these points of view.

Thank you,
MaryAnne Flett
Point Reyes Station, CA

## Responses to Letter 98

**Response 98.1**
The commenter expresses concern about the quality of the drinking water due to the presence of sewage and wastewater on the project site. The commenter states that the IS/MND did not properly analyze potential groundwater contamination and water pollution in Lagunitas Creek. The comment also states that the project would affect salmon populations.

Potential groundwater contamination and water pollution to Lagunitas Creek is provided in Section 3.2.10, Hydrology and Water Quality, impact A). Potential impacts to salmon population are provided in Section 3.2.4, Biological Resources. The County also consulted with the National Marine Fisheries Service (NMFS) regarding the effects of the project including the proposed wastewater treatment system on federally listed salmon populations in Lagunitas Creek. The conclusion of that consultation is "Due to the implementation of avoidance and minimization measures detailed above and included in the Project Description, it is expected that effects to CCC coho salmon, CCC steelhead, and their designated critical habitat will be insignificant or discountable. Based on this analysis, NMFS concurs with the County that the proposed action is not likely to adversely affect the subject listed species and designated critical habitats."

The existing development on the project site includes stormwater inlets, which convey stormwater from the site directly to outfalls into the riparian areas adjacent to Lagunitas Creek. There is currently no treatment of the site runoff prior to the outfall. Construction and operations would not be taking place in or immediately adjacent Lagunitas Creek, and a 50-foot riparian ESHA buffer would be implemented to protect sensitive riparian habitat. The project design includes removal of existing structures and impervious surfaces in proximity to riparian areas and Lagunitas Creek and replacement of those structures with bioretention areas to improve water quality. Because the project would add new bioretention features, which could reduce discharge of sediment or other water quality pollutants to Lagunitas Creek, the potential impact to Lagunitas Creek from sediment loads generated at the project site would be potentially beneficial and less than significant.

**Response 98.2**
The commenter asks how the creek will be protected from the addition of a high-density population.

The project would adhere to the 50-foot riparian ESHA buffer during operations and would not provide direct access to Lagunitas Creek. The project also includes installation of bioretention basins as discussed in Response 99.1.

**Response 98.3**
The commenter questions whether construction workers would properly implement the proposed mitigation measures. The commenter states that analysis in the IS/MND dismiss or

glosses over potential impact. The comment states that the project should avoid impacts to nesting birds and other wildlife in accordance with federal and state laws.

The mitigation measures included in the IS/MND are legally binding and Marin County has the authority to enforce those measures during project implementation. The comment does not provide evidence that the analysis in the IS/MND is inadequate. The IS/MND includes substantial evidence and rationale for the conclusions.

In addition to compliance with state and federal regulatory standards under the MBTA and Fish and Game Code, the IS/MND discusses that Marin Development Code section 22.20.040.G provides protections for nesting birds and Mitigation Measure BIO-14 provides increased protections for special-status nesting birds. Impacts on nesting birds are addressed through compliance with state and federal laws, Marin Development Code, and the mitigation measures in the IS/MND.

**Response 98.4**
The comment states that the project combined with other proposed cumulative projects would increase the population which would result in impacts to traffic, parking, water availability, sewage, wastewater, and the natural environment.

Potential cumulative impacts are addressed in Section 3.2.21 of the IS/MND. Impacts on traffic congestion and parking are no longer considered environmental impacts within the context of CEQA pursuant to Senate Bill 743. Impacts on water availability are addressed in the IS/MND and Response 3.10, above. The wastewater treatment system for the project will operate independently and is not part of a collective wastewater treatment system. The project's wastewater treatment would not create any cumulative impacts on wastewater treatment supply.

**Response 98.5**
The comment states that the affordable housing provided by the project should be limited to local people. The comment states that the project would change the character of the community.

The purpose of the IS/MND is to analyze potential environmental impacts. Changes in "community character" are not subject to review under CEQA. Administrative policies, such as who is eligible for affordable housing are not within the purview of CEQA. However, to the extent that environmental justice is considered within the context of CEQA, the project would have a beneficial impact on environmental justice by serving low-income populations. More information about the County's Affirmative Marketing policies for housing can be found on Marin County's website: https://www.marincounty.gov/departments/cda/housing-and-grants/funding-projects/affirmative-marketing.

**LETTER 99**

**COMMENTER: Art and Judy Levit**
**DATE: May 22, 2024**

**Robin Fies**

**From:** Art Levit <alevit@pacbell.net>
**Sent:** Wednesday, May 22, 2024 12:15 PM
**To:** EnvPlanning
**Subject:** Comment on Point Reyes Station Coast Guard Site Project

[You don't often get email from alevit@pacbell.net. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification ]

Dear County Staff,
I am writing to comment on the "Point Reyes Station USCG Coastal Permit and Conditional Use Permit Draft Initial Study/Mitigated Negative Declaration" which I have just read.

This has been an extensive review of the project. Potential impacts were considered and minimized with conditions.

We strongly support the project, which creates a number of affordable homes in our West Marin community, which is in dire need of exactly that. People working in the community find housing to be out of reach financially, and this project will help to mitigate that.

Thank you for reading our comment.

99.1

Art and Judy Levit
PO Box 553
22 Cypress Rd
Point Reyes Station, CA 94956
alevit@pacbell.net
cell: 510.915.4638

## Responses to Letter 99

**Response 99.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 100**

**COMMENTER: John Finger and Terry Sawyer**
**DATE: May 22, 2024**

**Robin Fies**

**From:** cat@hogislandoysters.com on behalf of John Finger <john@hogislandoysters.com>
**Sent:** Wednesday, May 22, 2024 12:54 PM
**To:** EnvPlanning
**Cc:** Terry Sawyer; Jodi Stevens
**Subject:** Point Reyes Station USCG Site Affordable Housing Project

You don't often get email from john@hogislandoysters.com. Learn why this is important

Attention: Rachel Reid, Environmental Planning Manager

Dear Rachel Reid and County Staff,

Hog Island Oyster Co., Inc. would like to take this opportunity to comment on the environmental document for the Pt. Reyes Coast Guard Housing project.

100.1

We understand that this project has been thoroughly reviewed and any potential impacts minimized with conditions.

As a 40 plus year employer here in West Marin currently employing approximately 70 individuals at our Oyster Farm and Tony's Seafood, both located in Marshall, we are in full support of this project and are excited to see it completed, creating affordable homes in our community. This is especially true when we consider that the majority of our employees are unable to afford to live locally so a project such as the Pt. Reyes Coast Guard Housing is of great interest to not just us as a company, but to our many employees who would love to live closer to their place of work.

Thank you for your consideration,

John Finger and Terry Sawyer, Co-Founders
Hog Island Oyster Co., Inc.

## Responses to Letter 100

**Response 100.1**

The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 101**

**COMMENTER: Henry Inman**
**DATE: May 22, 2024**

**Robin Fies**

**From:** Henry Inman <henry.c.inman@gmail.com>
**Sent:** Wednesday, May 22, 2024 1:23 PM
**To:** EnvPlanning
**Subject:** Pt Reyes Coast Guard Housing Project

You don't often get email from henry.c.inman@gmail.com. Learn why this is important

Dear County Staff,

Appreciate the opportunity to comment on the housing project. I fully support the project and believe the environmental review is sufficient. We need affordable housing to build the long-term ties needed for thriving communities. Nobody should be priced out of their home. 101.1

Thanks,
Henry Inman

## Responses to Letter 101

**Response 101.1**
The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 102**

**COMMENTER: Anneke van der Veen**

**DATE: May 22, 2024**

**Robin Fies**

**From:** Anneke van der Veen <avanderveen38@gmail.com>
**Sent:** Wednesday, May 22, 2024 4:39 PM
**To:** EnvPlanning
**Cc:** corey@clam-pt.reyes.org

You don't often get email from avanderveen38@gmail.com. Learn why this is important

Dear Rachel Reid,

I am writing in support of the continued development pf the former Coast Guard Housing site in Point Reyes Station.

I am pleased by the mitigated Negative Declaration document-

It seems all in readiness for the project to keep moving forward.

We have been waiting for a long time for this much needed housing in West Marin.

Thank you for doing all you can to keep it coming to life.

Best wishes,

Anneke van der Veen

Anneke van der Veen
P.O.Box 607
Point Reyes Station, CA 94956

avanderveen38@gmail.com
415-717-1429

102.1

## Responses to Letter 102

**Response 102.1**

The comment states that additional affordable housing is needed in Marin County and expresses support for the Project. This comment is noted for the record. No further response is required.

**LETTER 103**

**COMMENTER: Save Our Seashore**

**DATE: July 8, 2024**

Save Our Seashore
A 501(c)(3) Charitable Organization (EIN 94-3221625)
Founded in 1993 to Protect Marin County's Ocean, Coasts, Estuaries, Watersheds and Creeks
40 Sunnyside Dr, Inverness CA 94937 gbatmuirb@aol.com 415-663-1828

July 8, 2024

To: County of Marin Community Development Agency (CDA) envplanning@marincounty.org

Re: Point Reyes Station USCG Coastal Permit and Conditional Use Permit Draft Initial Study/Mitigated Negative Declaration (dIS/MND)

The Save Our Seashore May 22, 2024 letter noted that the Coast Guard Project's dIS/MND text and graphics concerning Environmentally Sensitive Habitat Area (ESHA) buffers were incomplete, confusing, and incorrect. Our current letter attempts to untangle these problems. 103.1

In brief, we believe that each ESHA (and its buffer) in the Coast Guard Project must be considered individually. We can find no provision in the Countywide Plan (CWP) or the Local Coastal Plan (LCP) that allows the dIS/MND to use a buffer exemption at one ESHA to justify a buffer exemption at other ESHAs on the same parcel. Further, we can find no provision in the CWP or LCP that allows the dIS/MND to use a buffer exemption at one spot in the ESHA to justify a buffer exemption around the entirety of that ESHA. Lastly, we are concerned about the location of the leach field and its potential impact on California Red-legged Frogs (CRLFs) . Referencing the dIS/NMD Figure 2.2-3's wetlands from south (near the entrance) to north... 103.2

**Wetland #1** (near the entrance) does not appear to have any existing uses or structures within 100-feet of the wetland. But two new construction projects are proposed within 100-feet. First is a new stormwater bioretention area which improves the quality of water flowing to the wetland and thus likely qualifies as an exception to the 100-foot buffer rule. The second new project is shown in dIS/MND Figure 2.2-3 as a "Water Reuse Facility and Leach Field Area" a portion of which is only 50 feet from Wetland #1. It is not clear what this portion is...the Sherwood graphics show the leach field 100 feet from the wetland If this portion 50-feet from the wetland as shown in Figure 2.2-3 is the leach field, it would conflict with County codes that require a 75 foot setback from wetlands and could pose a threat to CRLF's. This threat is outlined in the Sherwood Report, which states that the proposed UV system will have a second unit backup, but the ozone system will not, so if the ozone system is down, then *"trace contaminants, including pharmaceuticals and other emerging contaminants of concern"* could be discharged adjacent to the wetland that may harbor CRLFs. Such contaminants are known threats to amphibians. The Water Reuse Facility should have the same second unit backup for ozone as it does for UV. 103.3

Presumably to accommodate the "Water Reuse Facility and Leach Field Area," the dIS/MND proposes to reduce this wetland's 100-foot wetland buffer to only 50 feet, which would then locate that facility just outside that reduced buffer. The dIS/MND then applies the reduced 50-foot wetland buffer to the other three wetlands on the parcel, which we believe is unjustified. Please clarify the location of each component of the "Water Reuse Facility and Leach Field Area." If the leach field itself is indeed 100 feet from the wetland, then we suggest an un-reduced 100-foot buffer be retained for Wetland #1 with the new storm water retention area and the non-leach field portion of the Water Use Faculty noted as minimal incursion exceptions. 103.4

Page 1

**Wetland #2** does not appear to contain any existing uses or structures within 100-feet except for a new stormwater bioretention area, thus we suggest an un-reduced 100-foot buffer should be retained for Wetland #2 with the new storm water retention area noted as a minimal incursion exception.

103.5

**Wetland #3** has a structure (Building #104) within the 100-foot buffer. Although dIS/MND's Table 2 paving figures for the Riparian buffer do not add up (5,343 sq ft existing less 8,823 sq ft removed does not equal 5,343 new total), Table 2 appears to show 1,866 sq ft of buildings (Building #104?) to be grandfathered in without reducing the width of the remaining 50-foot Riparian buffer...the same logic should apply to wetland buffers, where we suggest existing conflicting uses should be grandfathered in and the remaining wetland buffer (outside the grandfathered area) retained at 100-feet.

103.6

**Wetland #4** does not appear to have any existing uses or structures within an un-reduced 100-foot buffer, which we suggest should be retained.

103.7

**Summary:** We have met with CLAM representatives on these matters but were unable to clarify the location of each component of the "Water Reuse Facility and Leach Field Area." Draft Initial Studies often need to be clarified when they move to final. We hope this letter outlines areas that we believe need clarification/revision so that the dIS/MND can be finalized without subsequent CEQA debate. We would be happy to meet with CDA if requested to clarify these matters further.

103.8

Gordon Bennett

Gordon Bennett, Save Our Seashore President

## Responses to Letter 103

**Response 103.1**
The comment states that the ESHA (and buffer) are confusing, incomplete, and incorrect.

The ESHA and buffers are fully and accurately described in the Project Description and shown on figures in the IS/MND. Consistency with the Coastal Plan is analyzed in the Land Use section of the Draft IS/MND.

**Response 103.2**
The comment discusses the buffer exemptions for ESHA and concerns about how buffer reductions were applied to the ESHAs. The comment also raises concerns with the location of the leach field and its potential impact on California Red-legged Frogs (CRLFs).

The buffer reduction for ESHA was required at the project site due to existing structures within the ESHA buffers. As stated in Section 3.2.4, Biological Resources, the project would remove 2,152 square feet of existing facilities from upland areas within ESHA and adjacent riparian corridor and would replace those structures with bioretention facilities, which would provide a long-term benefit to water quality and habitat. The County obtained a biological opinion from USFWS for impacts on California red-legged frog and the USFWS concurred with the proposed measures. The mitigation measures included in the MND were included in the Biological Opinion and are sufficient to address the impact on California red-legged frog from the project, including the leach field.

**Response 103.3**
This comment discusses wetlands on Figure 2.2-3. The comment states that wetland #1 (near the entrance) does not appear to have any existing uses or structures within 100-feet of the wetland, but two components are proposed within 100-feet: a new stormwater bioretention area and a portion of the "Water Reuse Facility and Leach Field Area" which is approximately 50 feet from wetland #1. The comment states that this portion of the leach field conflicts with the County code which requires a 75-foot setback from wetlands. The comment states that this encroachment could pose a threat to CRLF. The comment states that the Water Reuse Facility should have the same second unit backup for ozone as it does for UV.

Figures that depict the detailed location of the components of the water reuse facility and leach field in proximity to the wetland are provided in Appendix J - Wastewater Basis of Design Report. As shown in the Figure labeled "Water Resue Facility and Leach Field Area" in Appendix J, the leach field is located outside of the 100-foot ESHA buffer. Thus, the leach field will not encroach into the 100-foot ESHA buffer for Wetland 1. Furthermore, final design of the water reuse facility and leach field area will be reviewed by the County and applicable agencies to ensure all components comply with County and state regulations per the requirements of Mitigation Measure HYDRO-1.

Refer also to Response 103.2, the project would result in less than significant impacts on CRLF with mitigation.

**Response 103.4**
The comment states that the Water Reuse Facility and Leach Field Area propose to reduce the 100-foot wetland buffer to 50 feet then place the facility and leach area outside that reduced buffer. The commenter requests the locations of each component of the Water Reuse Facility and Leach Field Area. The commenter recommends keeping the existing 100-foot buffer around wetland #1.

The leach field is located approximately 400 feet from Lagunitas Creek at the nearest point. As noted in response to comment #103.3 and shown in detail in Appendix J, the leach field is more than 100 feet from the wetland. The project is proposing to reduce the ESHA buffer in order to demolish structures that currently conflict with the ESHA and construct additional bioretention areas that would provide a net benefit to the ESHA.

**Response 103.5**
The comment states that wetland #2 does not appear to contain any existing uses or structures within 100-feet except for a new stormwater bioretention area. The commenter states that the 100-foot buffer should be retained for wetland #2 with the new storm water retention area noted as a minimal incursion exception.

A reduction of the ESHA buffer is required to construct the bioretention area. The project does not propose further development within the 100-foot buffer around wetland #2. The project is expected to provide a net benefit to the ESHA as the project would demolish structures that currently conflict with the ESHA and construct additional bioretention areas.

**Response 103.6**
The comment states that wetland #3 has a structure (Building #104) within the 100-foot buffer. The comment references Table 2 in the IS/MND and challenges the acreages in the riparian buffer.

It is unclear which table and acreages the commenter is referencing. The IS/MND does not include a table with the numbers referenced. As stated in Section 3.2.4, Biological Resources, the project would remove 2,152 square feet of existing facilities from upland areas within ESHA and adjacent the riparian corridor and would replace those structures with bioretention facilities, which would provide a long-term benefit to water quality and habitat. As provided in Table 2.3-1, Building 104 is currently 4,756 sq. ft and would increase to 4,836 sq. ft. The building that would be demolished is the existing storage building (Building 100B), which would be replaced with landscaping and a patio area. Additional non-residential structures and impervious surfaces would be removed within the ESHA and replaced with beneficial bioretention areas.

**Response 103.7**
The comment states that wetland #4 does not appear to have any existing uses or structures so the 100-foot buffer should be retained.

The project does not propose further development within the 100-foot buffer around wetland #4 so it is a moot point to apply the 100-foot buffer. The reduced ESHA buffer is only applied for the purpose of the project and would not allow for future development.

**Response 103.8**
The commenter requests information on the location of each component of the "Water Reuse Facility and Leach Field Area."

Figures that depicting the location of the components of the water reuse facility and leach field are provided in Appendix J - Wastewater Basis of Design Report.

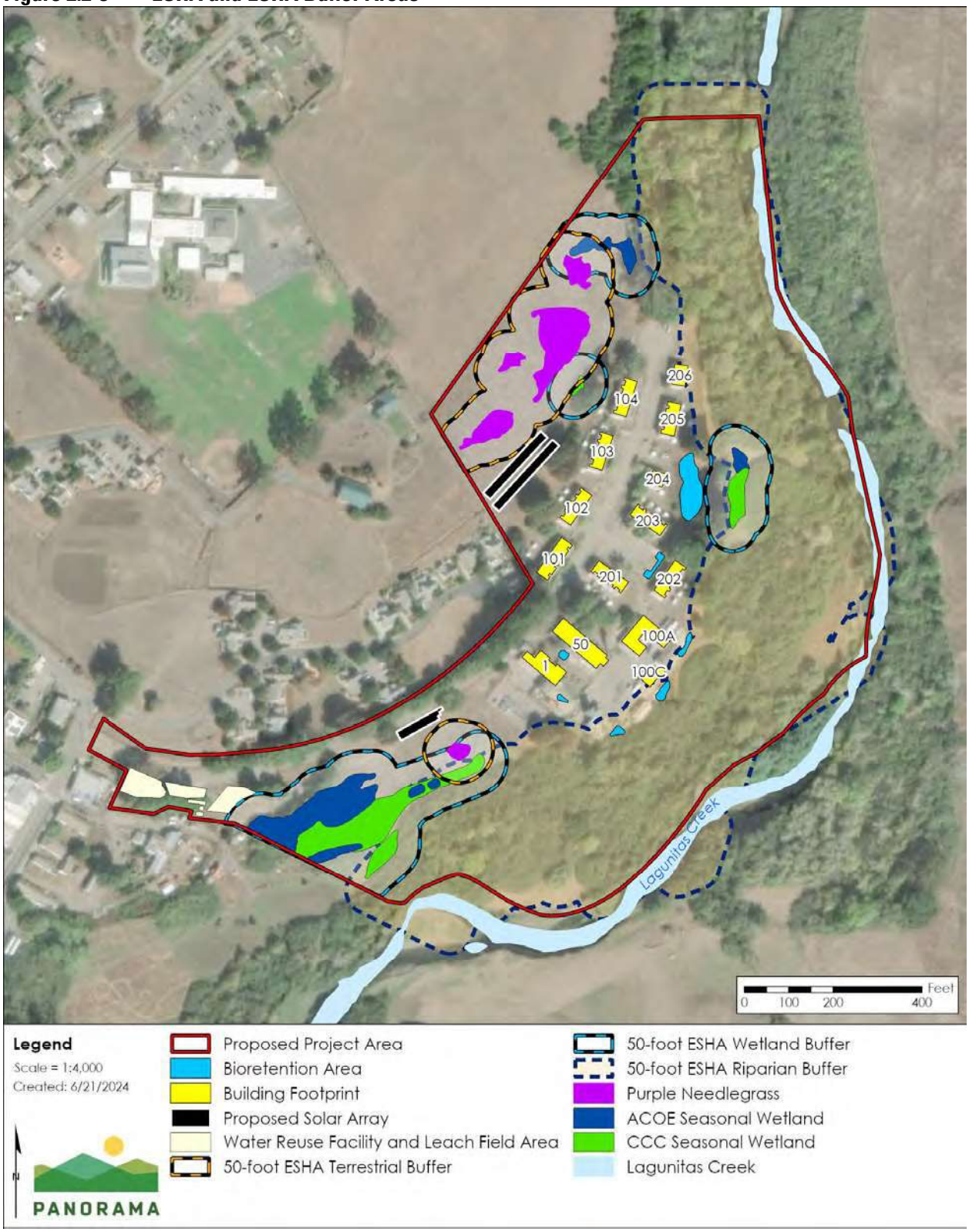
# 4 Errata

The footnote is revised on Page 2-11 of the IS/MND as follows:

> [1] The estimated average daily wastewater flow is 9,500 gallons per day (gpd). The equalization tank, which stores wastewater, is sized for 5,000 gpd, or approximately half a day of flow. The recycled water storage tank would store treated effluents and is sized to provide slightly more than 1 day of recycled water storage, or 10,000 gallons. ~~Recycled water could be used for toilet flushing in community area restrooms, which would need to be dual-plumbed. This would represent a demand of approximately 300 to 400 gpd.~~ The reuse opportunity that is part of the current design is irrigation via a subsurface drip system, which is sized for 100 percent of wastewater flows and also provides another method of disposal during dry weather. The leach field has capacity to dispose of 200 percent of effluent, and the design does not assume a portion is used for irrigation.

The legend in Figure 2.2-3 was corrected as shown in the revised figure below:

**Figure 2.2-3 ESHA and ESHA Buffer Areas**



Mitigation Measure HYDRO-1 in Appendix I and Page 3-87 of the IS/MND is revised as follows:

> Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days to RWQCB, the County, and NMWD documenting the violation and corrective actions taken to address the violation.

Mitigation Measure HYDRO-1 on Page 22 of Appendix I and Page 3-87 of the IS/MND is revised as follows:

- Corrective actions: If the intervening ~~groundwater~~ monitoring well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected. Additional corrective actions including but not limited to, repairs or replacement of equipment, additional monitoring, or other actions, will be defined as appropriate depending on the exceedance detected and potential causes of the exceedance.

The discussion of water supplies is revised on Pages 3-120 and 3-121 of the IS/MND as follows:

> The project has an anticipated water demand of 9,500 gpd. NMWD obtains its water supply for the West Marin service area from two wells located on the nearby Gallagher Ranch and from two wells located on the project site. ~~According to the NWMD 2020 Urban Water Management Plan, the NWMD has adequate water supplies to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years (North Marin Water District 2021).~~ The project area previously provided housing for the U.S. Coast Guard and the wells on the project site, which are now operated by NMWD, supplied water to the housing for over 20 years including periods of drought. The wells on the project site are thus assumed to provide sufficient water supply for the project during normal, dry, and multiple dry years. If NMWD relocates the wells on the project site at some point in the future, it is presumed that the relocated well location would have similar or greater productivity to the wells on the project site and would be capable of serving the demand for the project. Therefore, the NWMD has adequate capacity to serve the project. Impacts would be less than significant.

The Mitigation Monitoring and Reporting Plan has been revised to incorporate the edits to the mitigation measures reflected above and is attached.

# Mitigation Monitoring and Reporting Plan

## MMRP Requirements and Use

The Marin County (County) Planning Division of the Community Development Agency has prepared an Initial Study/Mitigated Negative Declaration (ISMND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Coastal Permit and Conditional Use Permit to adaptively reuse and repurpose the former United States Coast Guard (USCG) site to provide affordable housing units in Point Reyes Station. Mitigation measures are defined in the IS/MND to reduce potentially significant impacts of project construction and operation. The mitigation measures included in the IS/MND reduce all potential project impacts to less than significant levels.

Implementation of the project will require execution and monitoring of all the mitigation measures identified in the IS. The California Environmental Quality Act (CEQA) Section 15097(a) requires that:

> "… In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

CEQA Section 15097(c) defines monitoring and reporting responsibilities of the lead agency.

> "(c) The public agency may choose whether its program will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is presented to the decision making body or authorized staff person. A report may be required at various stages during project implementation or upon completion of the mitigation measure. "Monitoring" is generally an ongoing or periodic process of project oversight. There is often no clear distinction between monitoring and reporting and the program best suited to ensuring compliance in any given instance will usually involve elements of both. The choice of program may be guided by the following:
>
> > (1) Reporting is suited to projects which have readily measurable or quantitative mitigation measures or which already involve regular review. For example, a report may be required upon issuance of final occupancy to a project whose mitigation measures were confirmed by building inspection.

> (2) Monitoring is suited to projects with complex mitigation measures, such as wetlands restoration or archeological protection, which may exceed the expertise of the local agency to oversee, are expected to be implemented over a period of time, or require careful implementation to assure compliance.
>
> (3) Reporting and monitoring are suited to all but the most simple projects. Monitoring ensures that project compliance is checked on a regular basis during and, if necessary after, implementation. Reporting ensures that the approving agency is informed of compliance with mitigation requirements."

This Mitigation Monitoring and Reporting Program (MMRP) is meant to facilitate implementation and monitoring of the mitigation measures to ensure that measures are executed. This process protects against the risk of non-compliance.

The purpose of the MMRP is to:

- Summarize the mitigation required for the project.
- Comply with requirements of CEQA and the CEQA Guidelines.
- Clearly define parties responsible for implementing and monitoring the mitigation measures.
- Provide a plan for how to organize the measures into a format that can be readily implemented and monitored.

## MMRP Components

The MMRP provides a summary of all mitigation measures that will be implemented for the project. Each mitigation measure is accompanied with identification of:

- Timing – measures may be required to be implemented prior to construction, during construction, or post construction
- Application Locations – locations where the mitigation measures will be implemented.
- Monitoring/Reporting Action – the monitoring and/or reporting actions to be undertaken to ensure the measure is implemented.
- Responsible and Involved Parties – the party or parties that will undertake the measure and will monitor the measure to ensure it is implemented in accordance with this MMRP

The responsible and involved parties will utilize the MMRP to identify actions that must take place to implement each mitigation measures, the time of those actions and the parties responsible for implementing and monitoring the actions.

# APPENDIX I - MITIGATION MONITORING AND REPORTING PROGRAM

## Mitigation Monitoring and Reporting Program

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| **Biological Resources** | | | | |
| 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 | **Mitigation Measure BIO-1: Tree Removal Outside of Monarch Butterfly Roosting Season**<br>Any removal of 3ucalyptus trees shall occur outside of the winter roosting season for monarch butterfly in Marin County (October through February). If the roosting season for monarch butterfly cannot be fully avoided, a pre-construction survey for active monarch butterfly roosts shall be conducted by a qualified biologist within three days prior to removal of eucalyptus trees. If no active roosts are identified within the eucalyptus trees, the trees may be removed. If active roosts are identified within the eucalyptus trees, the trees cannot be removed until the roost has left the area as documented by a qualified biologist. | • Eucalyptus trees to be removed October through February when feasible.<br>• A pre-construction survey for monarch butterfly must be completed if tree removal occurs during monarch roosting season.<br>• Report identified active roosts if found. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency prior to eucalyptus removal. |
| 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 | **Mitigation Measure BIO-2: Worker Environmental Awareness Training**<br>Prior to construction, all contractor construction personnel shall attend an environmental training program provided by a qualified biologist. The training shall discuss sensitive species and nesting bird habitat that may occur within the project area as well as identification of California red-legged frog and their burrows.<br>The training shall include the responsibilities of contractor's construction personnel, applicable mitigation measures, and notification requirements. The training shall also address other measures that protect biological resources. | • Attendance of an environmental training program.<br>• Fact Sheets and educational brochure to be prepared prior to environmental training program. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency verifies contractor training.<br>• USFWS has authority to verify training upon request. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | The following information shall also be provided during the training:<br>• Specific information regarding the special-status species potentially present and their habitat needs<br>• Any reports of occurrences in the project area<br>• An explanation of the status of each listed species and their protection under state and federal laws<br>• A list of measures being taken to reduce effects to the species during construction and implementation<br>Fact sheets conveying this information and an educational brochure containing color photographs of all special-status species potentially present shall be prepared for distribution to the above-mentioned people and anyone else who may enter the project area. Construction personnel shall be instructed to halt construction activities and contact the designated biologist if a wildlife species is observed in an area where it could be harmed by construction activities. A list of employees who attend the training sessions shall be maintained on the site during construction and made available to USFWS upon request. | | | |
| 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 | **Mitigation Measure BIO-3: Install Exclusion Fencing**<br>Temporary exclusion fencing shall be installed around the limits of work areas to ensure special status animals (i.e., CRLF and western pond turtle) cannot enter the work area. Installation of exclusion fencing shall occur under the supervision of the designated biologist and immediately following a clearance survey of the area. The exclusion fencing shall have a minimum aboveground height of 30 inches, and the bottom of the fence shall be keyed in at least 4 inches deep and backfilled with soil to prevent wildlife from passing | • Installation of temporary exclusion fencing.<br>• Inspection of fencing for sensitive species, trapped wildlife, and damage before each workday. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency prior to work in undeveloped areas. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | under the fencing. Exclusion fencing shall be installed to prevent species entry into active work areas and to mark the limits of construction disturbance.<br>The exclusion fencing shall be installed in a manner that reduces the potential for trapping migrating wildlife and for wildlife climbing over the fence, such as having the top of the fencing curved over on the outside of the fence. Cover boards shall be installed along the perimeter of the fencing to provide protection from the sun and predators, where necessary and appropriate. Gates shall be installed in the exclusion fencing that allow project access and adequately exclude wildlife. Gates will be secured at the end of each workday using sandbags or other means to prevent wildlife from entering the exclusion zone. The exclusion fencing shall remain in place and be maintained for the duration of construction activities and shall be removed within 15 days of completion of construction activities.<br>Prior to construction personnel entering and beginning work in fenced areas each day, the fenced areas shall be inspected by a biological monitor for special status species or any trapped wildlife and to identify damage to the exclusion fencing. The biological monitor must be trained by the designated biologist (BIO-4) on California red-legged frog identification, the laws protecting the species, and procedures to implement if the species is observed. If California red-legged frogs or trapped wildlife are observed, the designated biologist shall be notified immediately to determine the appropriate procedures to implement. Any damage to the fencing shall be immediately reported and repaired until the last day that construction equipment is at the project site. | | | |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 | **Mitigation Measure BIO-4: Designated Biologist**<br>The applicant shall obtain USFWS approval for a designated biologist(s) for the project. The designated biologist(s) shall be on site during all activities that may result in take of California red-legged frog. The qualifications of the designated biologist(s) shall be submitted to USFWS for review and written approval at least 30 calendar days prior to the date earthmoving is initiated at the project site. The designated biologist(s) shall keep a copy of any Biological Opinion issued for the project in their possession when on site. | • Obtain USFWS approval for a designated biologist.<br>• Submit qualifications of designated biologist at least 30 calendar days prior to the initiation of earthmoving activities. | • Pre-Construction<br>• Construction | • USFWS and Marin County Community Development Agency. |
| 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 | **Mitigation Measure BIO-5: Designated Biologist Authority**<br>The designated biologist(s) shall be given the authority to freely communicate verbally, by telephone, by electronic mail, or in writing at any time with construction personnel, any other person(s) at the project site or otherwise associated with the project, the USFWS, or their designated agents. The designated biologist shall have oversight over implementation of the avoidance and minimization measures and all permit conditions and shall have the authority and responsibility to stop project activities if they determine any of the associated permit requirements are not being fulfilled. If the designated biologist(s) exercises this authority, the USFWS shall be notified by telephone and electronic mail within 24 hours. | • Designated biologist shall notify USFWS within 24 hours if permit requirements are not being fulfilled. | • Construction | • USFWS in coordination with Marin County Community Development Agency. |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or | **Mitigation Measure BIO-6: On-site Construction Monitoring**<br>The designated biologist shall be present at the project site until all initial habitat disturbances have been | • Biological monitor to contact designated biologist should any CRLF be observed on site. | • Pre-Construction<br>• Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 | completed. After habitat disturbance has been completed and all exclusion fencing has been installed, a biological monitor, who will be trained by the designated biologist, shall monitor daily on-site compliance with all avoidance and minimization measures (AMMs) in the U.S. Fish and Wildlife Service Biological Opinion. The biological monitor shall contact the designated biologist for instructions should any CRLF be observed on the site. The biological monitor and the designated biologist shall have the authority to halt any action that could adversely affect sensitive biological resources. The designated biologist shall continue to conduct compliance checks at least once per week until construction is completed to ensure that the fencing is intact and that all AMMs are being implemented. | • Biological monitor and designated biologist shall have the authority to halt any action that could adversely affect sensitive biological resources.<br>• Designated biologist shall conduct compliance checks least once per week until construction is completed to ensure that the fencing is intact and that all AMMs are being implemented. | | |
| 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 | **Mitigation Measure BIO-7: California Red-legged Frog Pre-construction Survey**<br>No more than 24 hours prior to the date of initial ground disturbance, a pre-construction survey for California red-legged frog shall be conducted by a designated biologist at the project site.<br>The survey shall consist of walking the project limits and within the project site to ascertain the possible presence of California red-legged frog. The designated biologist shall investigate all potential areas that could be used by the species for feeding, breeding, sheltering, movement, and other essential behaviors. This includes an adequate examination of mammal burrows, such as for California ground squirrels or gophers.<br>If any California red-legged frogs are found, the designated biologist shall follow the procedures specified in Mitigation Measure BIO-13. | • A pre-construction survey for California red-legged frog shall be conducted by a designated biologist at the project site no more than 24 hours prior to the date of the initial ground disturbance.<br>• Follow the procedures specified in Mitigation Measure BIO-13 if any California red-legged frogs are found. | • Pre-Construction | • Marin County Community Development Agency and USFWS. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 | **Mitigation Measure BIO-8: Timing Construction Commencement to Avoid California Red-legged Frog**<br>Initial ground-disturbing activities shall be avoided between November 1 and March 31 to avoid the time period when California red-legged frogs are most likely to be moving through the project area. | • Initial ground disturbing activities shall be avoided between November 1 through March 31. | • Construction | • Marin County Community Development Agency. |
| 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 | **Mitigation Measure BIO-9: Avoid Construction During Rain Events**<br>No ground-disturbing construction activities shall occur during rain events or within 24 hours following a rain event. Prior to ground-disturbing construction activities resuming, a designated biologist shall inspect the project area and all equipment/materials for the presence of California red-legged frogs. | • Cease ground-disturbing construction activities during rain event or within 24 hours following a rain event.<br>• Designated biologist shall inspect the project area and all equipment/materials for the presence of California red-legged frogs prior to ground-disturbing construction activities resuming following a rain event. | • Construction | • Marin County Department of Public Works. |
| 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 | **Mitigation Measure BIO-10: Cover Trenches**<br>Trenches or pits 1 foot or deeper that are going to be left unfilled overnight shall be securely covered with boards or other material to prevent California red-legged frog or other special-status species from falling into them. If covering of trenches or pits is not feasible, wooden | • Trenches shall be securely covered or wooden ramps or other structures.<br>• Biological monitor shall inspect the trenches, pits, | • Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service | ramps or other structures of suitable surface that provide adequate footing for the California red-legged frog are to be placed in the trench or pit to allow for their unaided escape. Auger holes or fence post holes that are greater than 0.10 inch in diameter shall be immediately filled or securely covered so they do not become pitfall traps for the California red-legged frog or other special-status species. The biological monitor shall inspect the trenches, pits, or holes prior to their being filled to ensure there are no trapped wildlife in them. The trench, pit, or hole shall also be examined by the biological monitor each workday morning prior to initiation of work and in the late afternoon no more than 1 hour after work has ceased to ascertain whether any individuals have become trapped. If the escape ramps fail to allow the animal to escape, the biological monitor shall contact the designated biologist, who shall remove and transport the animal to a safe location or contact the USFWS for guidance | or holes prior to their being filled.<br>• The trench, pit, or hole shall also be examined by the biological monitor each workday morning and afternoon.<br>• If the escape ramps fail to allow the animal to escape, the biological monitor shall contact the designated biologist, who shall remove and transport the animal to a safe location or contact the USFWS for guidance. | | |
| 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 | **Mitigation Measure BIO-11: Erosion Control Material**<br>Plastic monofilament netting (i.e., erosion control matting), loosely woven netting, or similar material in any form shall not be used at the project site because California red-legged frogs can become entangled and trapped in them. Any such material found on site shall be immediately removed by the designated biologist or construction personnel. Materials utilizing fixed weaves (i.e., strands cannot move), polypropylene, polymer, or other synthetic materials shall not be used. | • Verify no plastic monofilament netting, erosion control matting, woven netting or similar material are used. | • Construction | • Marin County Department of Public Works |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 | **Mitigation Measure BIO-12: Waste Management**<br>Uneaten human food and trash attracts crows, ravens, coyotes, and other predators of the California red-legged frog and other wildlife. A litter control program shall be instituted at the project site. All workers shall ensure their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. The trash containers shall be removed from the project site at the end of each working day. | • Implement a litter control program at the project site.<br>• Trash containers shall be removed from the project site at the end of each working day. | • Construction | • Marin County Community Development Agency. |
| 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 | **Mitigation Measure BIO-13: Procedures for Encounters with California Red-legged Frog**<br>Each encounter with the California red-legged frog will be treated on a case-by-case basis in coordination with the USFWS, but the general procedure is as follows: (1) the animal will not be disturbed if it is not in danger; or (2) the animal will be moved to a secure location if it is in any danger. These procedures are further described below.<br>When a California red-legged frog is encountered in the project area, all activities that have the potential to result in the harassment, injury, or death of the individual shall be immediately halted. The designated biologist will then assess the situation in order to select a course of action that shall avoid or minimize adverse effects to the animal. Contact with the animal shall be avoided and the applicant shall allow it to move out of the potentially hazardous situation to a secure location on its own volition. This procedure applies to situations where a California red-legged frog is encountered while it is moving to another location and is actively dispersing. It | • All activities that the potential to result in the harassment, injury, or death of the individual shall be immediately halted when a California red-legged frog is encountered in the project area.<br>• California red-legged frogs that are in danger shall be relocated and related by the Designated Biologist within the same habitat outside of the construction area.<br>• Designated Biologist shall obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is | • Construction | • USFWS has authority for approval of relocation. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | does not apply to animals that are uncovered or otherwise exposed or in areas where the individual is not expected to move on its own and may be in danger (e.g., within the fenced construction perimeter).<br>California red-legged frogs that are in danger (e.g., animals that are uncovered or otherwise exposed or in areas within the fences construction perimeter where the individual is not expected to move on its own) shall be relocated and released by the designated biologist outside the construction area within the same habitat. Prior to the initial ground disturbance, the designated biologist shall obtain approval of the relocation protocol from the USFWS in the event that a California red-legged frog is encountered and needs to be moved away from the project site. California red-legged frog shall be released in appropriate habitat nearby on the watershed. The designated biologist shall limit the duration of the handling and captivity of the California red-legged frog to the minimum amount of time necessary to complete the task. The applicant shall immediately notify the USFWS once the California red-legged frog is relocated and the site is secure. | encountered and needs to be moved away from the project site.<br>• The Designated Biologist shall limit the duration of the handling and captivity of the California red-legged frog.<br>• Immediately notify USFWS once relocation of California red-legged frog is complete. | | |
| 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 | **Mitigation Measure BIO-14: Avoidance of Nesting Birds**<br>All tree removal activities shall be avoided between February 1 and August 15 to avoid the time period when birds are most likely to be nesting, to the extent feasible. Prior to any construction activities during the bird nesting season (February 1 to August 15), a pre-activity nesting bird survey shall be conducted no more than 7 days prior to tree removal and start of construction activities. The survey shall include all areas within 500 feet of active construction. If active nests of special status or migratory bird species (listed in the MBTA) are | • Pre-construction survey by Qualified Biologist 7 days prior to tree removal and start of construction activities.<br>• Monitoring of active nests if any work occurs within the buffer zones defined in the measure. | • February 1 to August 15 | • Marin County Community Development Agency |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | found within the project site, or in areas subject to disturbance from construction activities, an avoidance buffer to avoid nest disturbance shall be constructed. The buffer size shall be determined by a qualified biologist and is based on the nest location, topography, cover, and species' tolerance to disturbance. A standard buffer of 500 feet shall be used for raptors and special-status birds and 200 feet for migratory birds. If the standard avoidance buffer is not achievable, a reduced buffer may be allowed under the direction of a qualified biologist and the qualified biologist will monitor the nest(s) to document that no take of the nest (nest failure) has occurred. Active nests shall not be taken or destroyed under the MBTA and, for raptors, under the CDFW Code. If it is determined that construction activity is resulting in any nest disturbance, work should cease immediately in the vicinity of the nest and will not be allowed to recommence in the area until the young have fledged the nest.<br>If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further action is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by special status birds or that are located outside the avoidance buffer for active nests may be removed. Nests initiated during construction (while significant disturbance from construction activities persist) may be presumed to be unaffected, and only a minimal buffer, determined by the qualified biologist, would be necessary. | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, | **Mitigation Measure BIO-15: American Badger Protection** | • Qualified biologist shall conduct pre-construction surveys to determine if | • Prior to Construction | • Marin County Community |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| 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 | Prior to ground-disturbing activities, a qualified biologist shall conduct a pre-construction survey of the project area to determine if new badger burrows have been constructed and/or if older (remnant) burrows appear to be re-occupied. These surveys will be conducted no less than 14 days and no more than 30 days prior to the start of ground disturbing activities. If burrows are occupied, the biologist will establish a 100-foot avoidance buffer around occupied maternity dens throughout the pup-rearing season (February 15 through July 1) and a 50-foot avoidance buffer around occupied dens during other times of the year. | new badger burrows are present and/or if older remnant burrows appear to be re-occupied.<br>• If burrows are found to be occupied, the biologist will establish an avoidance buffer around the occupied maternity dens | | Development Agency. |
| **Cultural Resources** | | | | |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5 | **Mitigation Measure CUL-1: Archaeological Monitoring Plan (AMP) and Archaeological Monitoring:**<br>A Secretary of Interior-qualified archaeologist shall prepare an Archaeological Monitoring Plan (AMP) that includes a provision for worker Cultural Resources Awareness Training (CRAT) as well as details regarding the archaeological sensitivity of the project area, the types of archaeological resources that could be encountered, the methodology and protocols to be employed during monitoring, and specific procedures to identify, evaluate, and treat new archaeological discoveries and for addressing specific contingencies, such as the discovery of human remains, project personnel qualifications, data collection protocols, site safety considerations, and post-field actions. The archaeologist preparing the AMP shall contact the Federated Indians of Graton Rancheria (FIGR) and provide them an opportunity to review and comment on the AMP prior to its finalization. | • Qualified archaeologist shall prepare an Archeological Monitoring Plan that includes a provision for worker Cultural Resources Awareness Training in consultation with the Federated Indians of Graton Rancheria.<br>• A professional archeologist shall provide sensitivity training to supervisory staff prior to initiation of site preparation and/or construction to alert construction workers to the possibility of exposing | • Prior to Construction<br>• Construction | • Marin County Community Development Agency. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | A professional archeologist shall provide sensitivity training to supervisory staff prior to initiation of site preparation and/or construction to alert construction workers to the possibility of exposing significant historic and/or prehistoric archaeological resources within the project area. The training shall include a discussion of the types of precontact or historic-era objects that could be exposed and how to recognize them, the need to stop excavation at a discovery, and procedures for protection and notification. An "alert sheet" shall be posted in staging areas, such as in construction trailers, to alert personnel to the procedures and protocols to follow for the discovery of a potentially significant historic-era and/or precontact archaeological resources.<br>A qualified archaeologist shall monitor all ground-disturbing activities that take place within native (i.e., non-fill) soils. If an archaeological deposit is encountered during ground-disturbing activities, all work within 50 feet of the discovery shall be halted until a Secretary of Interior qualified archaeologist and FIGR (in the case of precontact-period resources) inspects the material, assesses its historical significance, and provides recommendations for the treatment of the discovery in accordance with the Secretary of Interior's Standards for the Treatment of Historic Properties (36 CFR Part 86). Potentially significant historic-era resources may include all by-products of human land use greater than 50 years of age, including subsurface deposits of domestic type material (e.g., glass, ceramic, metal, wood, faunal remains, brick), buried alignments of stone, brick, or foundation elements, and possible features associated with the former railroad, open workspaces, or yard spaces. Potentially significant | significant historic and/or prehistoric archaeological resources within the project area.<br>• An alert sheet shall be posted in staging areas to alert personnel to the procedures and protocols for the discovery of a potentially significant historic-era and/or precontact archaeological resources.<br>• Qualified archaeologist shall monitor all ground-disturbing activities that take place within native soils.<br>• If an archaeological deposit is encountered, all work within 50 feet of the discovery shall be halted until Secretary of Interior qualified archaeologist and FIGR (in the case of precontact-period resources) inspects the material, assesses its historical significance, and provides recommendations for the treatment of the discovery. | | |

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| | precontact period resources include midden soils, artifacts such as faunal bone, groundstone, fire-affected rock, baked clay, modified bone and/or shell, flake stone debitage, flake stone tools, etc., and features such as house floors, cooking pits, deliberately interred burials.<br>If work must commence in the sensitive area, it can only be performed using hand tools or powered hand tools, cannot include ground disturbance below the topsoil layer, and can only be accessed on foot. Alternatively, the cultural resource specialist/archaeologist shall evaluate the resource and determine whether it is:<br>• Eligible for the CRHR (and a historical resource for purposes of CEQA); or<br>• A unique archaeological resource as defined by CEQA.<br>If the resource meets the criteria for eligibility on the CHRH or is a unique archaeological resource, work shall remain halted, and the cultural resources specialist/archaeologist shall consult with County staff regarding methods to ensure that no substantial adverse change would occur to the significance of the resource pursuant to CEQA Guidelines section 15064.5(b).<br>Avoidance of the area, or avoidance of impacts to the resource, is the preferred method of mitigation for impacts to cultural resources and shall be required unless there are other equally effective methods. Other methods to be considered shall include evaluation, collection, recordation, and analysis of any significant cultural materials in accordance with the AMP. The methods and results of evaluation or data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. | • Qualified archaeologist shall analyze evaluation, collection, recordation and approve the start of work in the project area. | | |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | Work may commence within the vicinity of the discovery upon completion of evaluation, collection, recordation, and analysis as approved by the qualified archeologist. | | | |
| **Geology and Soils** | | | | |
| a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:<br>ii) Strong seismic ground shaking | **Mitigation Measure GEO-1: Implement Geotechnical Recommendations in Final Design**<br>The applicant shall incorporate the following recommendations of the geotechnical investigation into the final design:<br>• Site preparation and grading: In areas that will receive fill or improvements (i.e., pavement, foundations, or concrete flatwork), the soil subgrade would be scarified to a depth of at least 8 inches, moisture-conditioned to above optimum moisture content, and compacted to at least 90 percent relative compaction. The upper eight inches of soil subgrade for vehicular pavements should be compacted to at least 95 percent relative compaction and be non-yielding.<br>• Utility trench backfill: All trenches would conform to the current CAL-OSHA requirements. Pipes and/or conduits would be bedded on a minimum of 4 inches of clean sand or fine gravel. After the pipes and/or conduits are tested, inspected (if required) and approved, all trenches would be covered to a depth of 6 inches with clean sand or fine gravel, which should be mechanically tamped. Backfill for utility trenches and other excavations is also considered fill and should be placed and compacted according to the recommendations previously presented.<br>• Exterior concrete flatwork: Exterior concrete flatwork that would not receive vehicular traffic (i.e. sidewalk) would be underlain by at least 4 inches of Class 2 | Incorporate stated recommendations of geotechnical investigation into the final design of the Project. | • Prior to Construction | • Marin County Department of Public Works. |

| Impact | Mitigation Measures | Mitigation Monitoring and Reporting Measures | When Implemented | Verified By |
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| | aggregate base compacted to at least 90 percent relative compaction. Prior to placement of the aggregate base, the upper eight inches of the subgrade soil should be scarified, moisture-conditioned to near optimum moisture content, and compacted to at least 90 percent relative compaction.<br>• Spread footing: The existing buildings are assumed to be supported on spread footings bottomed in the existing fill; however, some footings may extend into the native soil. If new loads are imposed on the existing footings, test pits would be excavated to determine the depth and width of the footings.<br>• Proposed improvements may be supported on conventional spread footings bearing on the existing fill or on new fill if placement of new fill is required to raise grades. Continuous footings should be at least 16 inches wide, and isolated footings should be at least 18 inches wide.<br>• Concrete slab-on-grade floors: The subgrade for new slab-on-grade floors would be prepared in accordance with recommendations in Section 8.1 of the geotechnical investigation (Rockridge Geotechnical 2022). Where water vapor transmission through the new floor slab is not desirable, the project would install a capillary moisture break and water vapor retarder beneath the floor slab. A capillary moisture break consists of at least 4 inches of clean, freed raining gravel or crushed rock.<br>• Permanent retaining walls: Retaining walls would be designed to resist static lateral earth pressures, lateral pressures caused by earthquakes, and traffic loads (if vehicular traffic is expected within a horizontal distance equal to 1.5 times the wall height). All on-site | | | |

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| | walls, including low retaining walls in landscaped areas, would be designed in accordance with the recommendations presented in the geotechnical investigation; however, checking the walls for seismic loading is not required for walls less than 6 feet high. | | | |
| **Hazards and 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 | **Mitigation Measure HAZ-1: Asbestos and Lead-Based Paint**<br>Demolition activities shall comply with the OSHA Standard 1926.6 related to lead abatement, and all other applicable State and federal requirements for the safe handling and disposal of lead-based paint, ACM, and universal wastes. The project contractor shall implement the following measures.<br>*Lead-based Paint*<br>As lead was identified in the paints and a detailed inventory of paints was not performed for the entire project, for the purpose of complying with the Cal/OSHA lead in construction regulation (8 CCR 1532.1), all coated surfaces shall be considered to contain some lead and require demolition dust control procedures and presumed respiratory protection usage for compliance with Cal/OSHA's Construction Lead Standard under 8 CCR 1532.1. The aforementioned regulation contains requirements for lead air monitoring, work practices, respiratory protection, etc., that are triggered by the presence of any detected levels of lead.<br>None of the applicable regulations require removal of lead paint prior to demolition if the paints are securely adhered to the substrates (i.e., non-flaking or non-peeling). Disposal of the demolition debris in this case can be handled as non-hazardous and non-RCRA waste | Contractor shall comply with the OSHA Standard 1926.6 and applicable measures and conduct required testing and abatement prior to demolition activities of any potential lead or asbestos containing materials. | • Demolition | • Marin County Community Development Agency. |

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| | after the loose and flaking paint have been removed as long as demolition practices do not compromise worker safety and waste stream characterization testing has been performed by the Contractor on the entire waste stream for verification.<br>Conventional demolition techniques shall be employed for all painted surfaces, with the Contractor complying with applicable OSHA and Cal/OSHA statutes regarding the following:<br>• Worker awareness training<br>• Exposure monitoring, as needed<br>• Medical examinations, which may include blood lead level testing<br>• Establishing a written respiratory protection program<br>***Asbestos-containing Materials (ACM)***<br>Any suspect material not sampled or not visually identified as negative by the Environmental Compliance Due Diligence Activities Report prepared by Tetra Tech in 2016 shall be assumed to contain asbestos and require destructive testing prior to demolition. Inspections in California are required to be conducted by a Certified Asbestos Consultant (CAC) or by a Certified Site Surveillance Technician (CSST) working under a CAC. In the absence of testing, the materials shall be assumed to contain asbestos and disposed of in accordance with OSHA Standard 1926.6. | | | |
| **Hydrology and Water Quality** | | | | |
| b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such | **Mitigation Measure HYDRO-1: Protection of NMWD Water Supply Wells**<br>***Modify Leach Field to Avoid Protection Zone*** | • Applicant shall ensure leach field avoids Zone A Protection Zone of NMWD groundwater supply wells. | • Prior to Construction<br>• Construction | • RWQCB in coordination with Marin County |

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| that the project may impede sustainable groundwater management of the basin | The Applicant shall modify the leach field design to avoid application of treated wastewater within the Zone A Protection Zone of NMWD groundwater supply wells.<br>***Design Review***<br>Design of the tertiary treated wastewater system is subject to review by the San Francisco Bay Regional Water Quality Control Board and Division of Drinking Water and permitting by the San Francisco Bay Regional Water Quality Control Board. The proposed wastewater system will require a Report of Waste Discharge Form 200 and a Title 22 Engineering Report as part of the application process to meet the Waste Discharge Requirements of the State. The Title 22 Engineering Report shall also be submitted to the NMWD and County for informational purposes.<br>***Use of Wastewater for Irrigation: Timing***<br>Tertiary treated wastewater shall not be applied to landscaping irrigation within 24 hours of forecasted precipitation with a greater than 50-percent probability of occurring, during precipitation events, or when the land application area surface soil is saturated. Application of treated wastewater for landscape irrigation shall further only occur when the depth to groundwater in the area of irrigation is a minimum of 4.5 feet or more below the ground surface, based on groundwater monitoring data allowing a minimum of 3 feet of separation between the drip dispersal and the groundwater table. Application of treated wastewater for irrigation shall not exceed the agronomic rate The agronomic rate will be monitored daily using an onsite irrigation controller to determine real time daily evapotranspiration rates and calculate run times for wastewater dispersal for irrigation. | • Applicant shall follow the timing guidelines of tertiary treated wastewater use in landscaping irrigation.<br>• Monitoring of the effluent from the wastewater treatment system shall be completed per the Regional Water Quality Control Board issued Monitoring and Reporting Program included in the Notice of Applicability for enrollment in the 2014 WDR General Order.<br>• The Notice of Applicability must be issued prior to recycled water production and use.<br>• No application of effluent shall be allowed within the Zone A Protection Zone unless the water quality criteria is met.<br>• A Groundwater Monitoring and Mitigation Plan (GMMP) shall be prepared for the project by a qualified hydrologist or hydrogeologist.<br>• Any violation of the RWQCB permit conditions | | Department of Environmental Health |

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| | ***Monitoring of Effluent***<br>Monitoring of the effluent from the wastewater treatment system shall be completed per the Regional Water Quality Control Board issued Monitoring and Reporting Program included in the Notice of Applicability for enrollment in the 2014 WDR General Order. The Notice of Applicability must be issued prior to recycled water production and use. Constituents that would be monitored and reported on are listed in the table below.<br>Should the effluent exceed the UV transmittance threshold specified in the National Water Research Institute Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, turbidity threshold of 10 NTU at any time, or other standard specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the treated wastewater shall not be applied within any area within the NMWD Zone A Protection Zone, including any portion of the leach field located in the Zone A Protection Zone. No application of effluent shall be allowed within the Zone A Protection Zone until the treatment system is repaired and the effluent quality is demonstrated to meet the water quality objectives. During periods when the effluent is not meeting water quality standards specified in the Notice of Applicability for enrollment in the 2014 WDR General Order, the effluent shall be stored in a tank and transferred to a wastewater treatment facility, if needed while maintenance is conducted on the wastewater treatment system.<br>***Groundwater Monitoring***<br>A Groundwater Monitoring and Mitigation Plan (GMMP) shall be prepared for the project by a qualified | shall require immediate notification to the RWQCB with a report filed within five (5) business days documenting the violation and corrective actions taken to address the violation.<br>• Water quality monitoring reports shall be prepared quarterly and submitted to the RWQCB, NMWD, and County for review.<br>• An annual report shall also be submitted to the RWQCB consistent with all regulatory requirements and permit conditions.<br>– Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site. | | |

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| | hydrologist or hydrogeologist. The groundwater quality monitoring program must comply with monitoring and reporting requirements issued by the Regional Water Quality Control Board. The GMMP shall include specifics on the procedures and timing for groundwater monitoring and reporting as well as action criteria and responses to action criteria. At a minimum, the GMMP shall include:<br>• Quarterly groundwater sampling and water quality monitoring between the irrigated areas and NMWD wells using the existing wells CG-2 and CG-3 and two additional monitoring wells<br>• Quarterly reporting to RWQCB, NMWD, and the County with the results of the monitoring program<br>• Performance criteria:<br>– The water quality within the groundwater monitoring wells between the area of application and NMWD drinking water wells shall not exceed 10 mg/L of nitrate (NO3) . Nitrate is used as an indicator of the treated wastewater given that the background levels of nitrate are less than the treatment standard for the wastewater system.<br>• Corrective actions: If the intervening monitoring well(s) indicate an exceedance of 10 mg/L nitrate, effluent application shall cease in the vicinity of the monitoring well where the exceedance is detected. Additional corrective actions including but not limited to, repairs or replacement of equipment, additional monitoring, or other actions, will be defined as appropriate depending on the exceedance detected and potential causes of the exceedance.<br>***Reporting*** | | | |

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| | Any violation of the RWQCB permit conditions shall require immediate notification to the RWQCB with a report filed within five (5) business days to RWQCB, the County, and NMWD documenting the violation and corrective actions taken to address the violation.<br>Water quality monitoring reports shall be prepared quarterly and submitted to the RWQCB, NMWD, and County for review. The quarterly reports shall contain the daily and monthly groundwater and effluent monitoring results for the prior quarter, identify any exceedances of the water quality standards or performance criteria, and actions taken to address the exceedance. An annual report shall also be submitted to the RWQCB consistent with all regulatory requirements and permit conditions. Reporting frequency may be reduced or may cease if NMWD ceases use and abandons the groundwater supply wells on the project site.<br>***Alternative Uses of Treated Effluent***<br>Alternative uses of treated effluent may also include but not be limited to the following and would be based on Regional Water Board and Division of Drinking Water approval:<br>• Use in off-site landscaping<br>• Recycled water refill station | | | |
| | **Mitigation Measure HYDRO-2: Avoid Equipment Staging and Storage in 100-Year Floodplain**<br>All equipment staging and storage areas shall be located outside of the 100-year floodplain. Any equipment-refueling activities shall be conducted within designated staging or storage areas with secondary containment for any potential spills of fuel. | • Locate storage and staging areas outside of the 100-year floodplain. | • Construction | • Marin County Department of Public Works. |

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| **Land Use and Planning** | | | | |
| 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 | **Mitigation Measure BIO-1: Tree Removal Outside of Monarch Butterfly Roosting Season**<br>Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. |
| 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 | **Mitigation Measure BIO-2: Worker Environmental Awareness Training**<br>Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. | Refer to Biological Resources. |
| **Noise** | | | | |
| 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 | **Mitigation Measure NOI-1: Design of Wastewater Treatment System**<br>The wastewater treatment system, including enclosures, shall be designed so that noise levels generated by the wastewater treatment system do not exceed 45 dB at the nearest residential property line adjacent the wastewater treatment system. A Noise Mitigation Plan, including the final wastewater treatment plan operational equipment noise levels, proposed enclosures, and any noise attenuation devices shall be submitted to the County at least 60 days prior to construction of the wastewater treatment system. The County may specify additional measures to reduce noise | • Wastewater treatment system shall be designed so that noise levels do not exceed 45 dB at the nearest residential property line.<br>• Applicant shall prepare a Noise Mitigation Plan and submit to the County at least 60 days prior to construction of the wastewater treatment system. | • Prior to Construction | • Marin County Community Development Agency. |

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| | levels from the wastewater treatment system during the design review process. | | | |
| **Transportation** | | | | |
| c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) | **Mitigation Measure TRA-1: Traffic Management Plan**<br>Prior to initiation of construction, the Project contractor(s) shall use a qualified traffic engineer to prepare a Traffic Management Plan (TMP) in compliance with the California Manual on Uniform Traffic Control Devices. The TMP shall be incorporated into the contract documents and specifications. The TMP shall include, but not necessarily be limited to, the elements listed below:<br>• The construction contractor shall confirm with the West Marin Elementary School the typical start and dismissal times, school events, and irregular start and dismissal times prior to the start of construction.<br>• The construction contractor shall avoid hauling/truck traffic on Highway 1 in front of West Marin Elementary School within 1 hour prior to the start of school and 1 hour following dismissal or special event times or equivalent method to avoid traffic hazards at the elementary school as defined in the TMP.<br>• Installation of traffic-control devices where traffic conditions warrant, as specified in the applicable jurisdiction's standards (e.g., the California Manual on Uniform Traffic Control Devices Part 6: Temporary Traffic Control); use of flaggers, when warranted, to control vehicle movements.<br>• Implementation of a public information program to notify interested parties of the impending construction | • Traffic Management Plan prepared in compliance with the California Manual on Uniform Traffic Control Devices.<br>• Submit Traffic Management Plan to the County for approval.<br>• The Contractor or Traffic Engineer shall report to the County that applicable work was done in compliance with this measure. | • Prior to Construction | • Marin County Department of Public Works |

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| | activities using means such as signs posted around the project site.<br>• Compliance with roadside safety protocols to reduce the risk of accidents.<br>• Maintaining of access for emergency vehicles at all times<br>• Store all equipment and materials in designated contractor staging areas on or adjacent to the worksite in such a manner as to avoid obstruction to traffic including emergency vehicles. | | | |
| **Tribal Cultural Resources** | | | | |
| a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:<br>i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or | **Mitigation Measure CUL-1: Archaeological Monitoring Plan (AMP) and Archaeological Monitoring:**<br>Refer to cultural resources | Refer to cultural resources. | Refer to cultural resources. | Refer to cultural resources. |

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| 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | | | | |
| **Utilities and Service Systems** | | | | |
| 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? | **Mitigation Measure HYDRO-1: Protection of NMWD Water Supply Wells**<br>Refer to hydrology and water quality. | Refer to hydrology and water quality. | Refer to hydrology and water quality. | Refer to hydrology and water quality. |