Eureka Operations Complex Project

Initial Study & Proposed Mitigated Negative Declaration

City of Eureka

September 03, 2023

Initial Study / Proposed MND
Eureka Operations Complex Project

Prepared for:

City of Eureka
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1. Project Information

Project Title	Eureka Operations Complex Project
Lead Agency Name & Address	City of Eureka 531 K Street Eureka, CA 95501
Contact Person, Phone Number, Email	Cristin Kenyon, Director of Development Services, 707-441-4160, ckenyon@eurekaca.gov
Project Location	3975 Broadway St, Eureka, CA APN: 019-341-007-000, 019-341-008-000
General Plan Land Use Designation	Public/Quasi-Public (PQP)
Zoning	Public Facility (PF)

1.1 CEQA Requirements

The Eureka Operations Complex Project (Project) is subject to the requirements of the California Environmental Quality Act (CEQA). The lead agency is the City of Eureka (City). The purpose of this Initial Study is to provide a basis for deciding whether to prepare an Environmental Impact Report, a Mitigated Negative Declaration, or a Negative Declaration. This Initial Study is intended to satisfy the requirements of CEQA (Public Resources Code, Div 13, § 21000-21177) and the CEQA Guidelines (California Code of Regulations, Title 14, § 15000-15387). CEQA encourages lead agencies and applicants to modify their Projects to avoid significant adverse impacts.

§ 15063(d) of the State CEQA Guidelines states the content requirements of an Initial Study as follows:

– A description of the Project including the location of the Project;
– An identification of the environmental setting;
– An identification of environmental effects by use of a checklist, matrix, or other method, provided that entries on a checklist or other form are briefly explained to indicate that there is some evidence to support the entries;
– A discussion of the ways to mitigate the significant effects identified, if any;
– An examination of whether the Project would be consistent with existing zoning, plans, and other applicable land use controls; and
– The name of the person or persons who prepared or participated in the Initial Study.

1.2 Background and Need

The City has an existing corporation yard (corp yard) where the City stores and repairs its fleet vehicles, public works equipment, and maintenance materials, located at 945 West 14th Street, Eureka CA (Appendix A – Figure 1). In addition to larger equipment and vehicles, the 3.9-acre existing corp yard serves as daily headquarters for permanent and seasonal staff by providing crew workspace, personal safety equipment, small tools, and communications with radios, work-order technology, GIS database, and similar. Equipment

stored in the existing corp yard is critical equipment during emergency events; however, the existing corp yard is located in the Coastal Zone in an area at current risk of liquefaction and tsunami flooding, and future risk of storm flooding due to sea level rise. The Project would relocate the City's existing corp yard to an upland location outside of the tsunami and sea level rise flood hazard zones (Appendix A – Figure 1). The City's plan for the existing corp yard is to surplus the property. Because of the requirements of the Surplus Land Act, the City cannot know at this juncture what will happen to the existing corp yard (i.e., who would acquire the property for what purposes), and therefore it is premature to analyze the impacts of that surplus. The planned surplus would be compliant with all applicable City and state policies and requirements.

The Project Area is approximately 5.6 acres, of which the development footprint would be 4.8 acres. The Project would serve as the City's new corp yard and would also include administrative offices and serve as the City's emergency operations center during critical incidents, emergencies and natural disasters.

1.3 Proposed Project Summary

The Project would construct office, warehouse, and shop buildings, parking and vehicle spaces, a decant facility for dewatering soil, bulk material bins, a vehicle wash station, solid waste/recyclable material storage, backup generator, and an approximately 50-feet tall wireless telecommunication tower to allow for line-of-sight voice and data radio communication with the City's other facilities, site lighting, fencing, gates, stormwater infiltration, and landscaping.(Appendix A – Figure 3 and Figure 4). Approximately 66 full-time and seasonal staff that currently work at the existing corp yard, and at City Hall, would be based at the new facility.

1.4 Project Location and Environmental Setting

The Project would be located entirely within the City of Eureka, Humboldt County, California. Eureka is situated on the Pacific Coast, approximately 90 miles south of the Oregon border (Appendix A – Figure 1).

The Project Area is comprised of Assessor Parcel Numbers (APN) 019-341-007-000 and 019-341-008-000. An administrative lot line adjustment would be completed to locate the entire site on one legal parcel, and the dedication for the cemetery purposes would be removed from the parcel.

The Project Area is located east of US 101 on unused land currently owned by the Ocean View Cemetery. Primary access to the Project Area would be via the private cemetery entrance from US 101, which would be maintained by the City. Secondary access would be via Weiler Road, which the City would improve (Appendix A – Figure 2).

Ocean View Cemetery land surrounds the project site to the north, northwest, and east. An established commercial corridor is located to the west of the Project Area along US 101 and a residential area is located to the southeast along the east side of Weiler Road in the unincorporated County. Lost Coast Brewery is located to the south of the Project Area, with Sunset Road and another cemetery (Sunset Memorial Park) located further south. The Project Area is currently unused and undeveloped. Vegetation throughout the Project Area consists of non-native grasses and other low-habitat value vegetation (Appendix C – Biological Resources Assessment). Terrain across the Project Area gradually slopes to the west.

As defined by the City of Eureka 2040 General Plan, the land use designation for the Project site is Public/Quasi-Public (PQP), and the zoning designation is Public Facilities (PF) (Eureka 2018). The Project is principally permitted within the site's zoning designation.

The Project is located within the Eureka Plain Drainage Basin. There are no watercourses or wetlands within the Project Area (Eureka 2023e). The Project Area is outside of the mapped Federal Emergency Management Agency (FEMA) 100-year flood zone (Eureka 2023c). No portion of the Project Area is within the California Coastal Zone (Eureka 2023d). No portion of the Project Area is within a Tsunami Hazard Area (Humboldt County 2023g).

1.5 Project Description

The operations complex would provide reliable City services in the event of an emergency. Based on the conceptual site layout (Figure 3), the Project would have a maximum development footprint of approximately 210,000 square feet (4.8 acres), which would include the operations building, warehouse, fleet maintenance shop, and surrounding hard-scape. The final size of the development footprint may adjust as the site layout plan is finalized through the facility design process. The buildings would be two or three-stories with a maximum building height of approximately 50 feet. Additional space would be included for covered storage, hard-scaping, and auxiliary facilities such as the tower footprint and the generator enclosure. City administration, engineering, GIS, field operations, and code enforcement staff would be stationed at the facility.

An existing private cemetery road (Oceanview Cemetery Road) would be used as primary access and would be maintained by the City. Secondary access would occur via Weiler Road, which the City would improve to support the ingress and egress of City vehicles. Water, sewer, gas and electrical utilities are established along US 101 and would be extended to the operations complex with all. Utility extension would be located underground. Stormwater runoff from impervious surfaces would be infiltrated and treated onsite. The Project would include a 35-foot buffer from Oceanview Cemetery Road. The operations building and parking would face the cemetery, visually screening the yard space and storage areas from cemetery visitors.

The Project includes the following elements:

Operations, Warehouse, and Shop Buildings

The Project would construct a two- to three-level operations building with a footprint of approximately 14,000 square feet (0.32 acre) to provide traditional office space in addition to field operation space. City administration, engineering, GIS, and code enforcement staff would occupy traditional office space. Field operation staff including wastewater collections, water distribution, fleet, and street crew members would occupy their respective work areas. The operations building would support office space, crew meetings space, locker facilities, along with storage for gear and personal protection equipment. The operations building would include conference rooms for meetings and trainings, space for emergency food storage, a commercial kitchen, lunch-room/multi-purpose room, restrooms, showers and decontamination facilities, along with wet-room and dry-rooms for field operations equipment.

The Project would construct a warehouse building with a footprint of approximately 16,000 square feet (0.37 acre) to house vehicles, equipment, parts and tools for utilities and transportation functions. These would include larger vehicles and their related parts to serve wastewater collections and water distribution. The warehouse would also serve transportation functions including streets equipment, a sign shop, and electrical equipment for traffic signals.

The Project would construct a fleet maintenance shop with a footprint of approximately 16,000 square feet (0.37 acre) to serve the fleet operations for maintenance of City and Humboldt Bay Fire fleet vehicles. The

shop would be large enough to maintain the larger fire apparatus and utility vehicles as well as service trucks and passenger vehicles. The fleet shop would have storage for tires, parts, and related inventory.

Solar Panels and High Efficiency Building Design

The 2022 Building Energy Efficiency Standards Title 24 would be applied to the new facility. These standards include requirements in the Energy Code (Title 24, Part 6) and voluntary energy efficiency provisions in CALGreen (Title 24, Part 11). Use of rooftop solar panels would be incorporated into the building design. Orientation of structures would account for the highest use of natural light for interior workspace, along with architectural use of glazing and materials to reduce heat from natural lighting. Passive cooling systems and efficient Heating, Ventilation, and Air Conditioning (HVAC) systems would reduce energy demands for heating and cooling. Exhaust ventilation systems for fleet work areas would use high efficiency fan equipment.

Parking and Fleet Spaces

The Project would construct approximately 10 public visitor parking spaces on the north-west side of the Project Area adjacent to Oceanview Cemetery Road. The Project would also construct a maximum of 78 parking spaces dedicated for parking personal vehicles for both seasonal and permanent City staff. Spaces for both short-term and long-term bike parking would also be included.

The City's fleet maintenance shop services all City vehicles/equipment, along with all Humboldt Bay Fire vehicles/equipment (See Appendix E – Vehicle & Equipment Space Allocation). For City fleet vehicles, the Project would construct a maximum of 150 parking spaces with approximately 60 of the proposed fleet spaces covered. Service is provided to approximately 300 vehicles and equipment that will enter and exit the Project including large fire engines, vactor trucks, and dump trucks. The Project would be designed for the circulation of larger vehicles to allow pull-through from entry, through fleet bay, or through warehouse bay, to an exit location, in an effort to reduce back-up noise, as well as reduce idling trucks during daily operations.

Electric Vehicle Charging

Parking locations for visitors, staff, and fleet would incorporate electric vehicle (EV) charging stations. The City has plans to transition to an electrified vehicle fleet. The facility would be designed to support the maintenance of EVs and associated equipment, which may include indoor fleet parking with overnight charging stations; EV battery maintenance, safe-handling, and storage facilities; and similar features.

Decant Facility

A decant facility would allow the City to separate, process, reuse, and dispose of liquid and solid waste generated when road crews clean catch basins, ditches, and drainage pipes. Contaminated soil would not be decanted in the facility.

Bulk Material Bins

The Project would include six covered 20- by 30-foot bins utilized for storage of bulk materials such as rock and sand. The Project would also include two uncovered 20- by 30-foot bins for gravel, and two uncovered 40- by 30-foot bins for spoils and other bulk materials.

Vehicle Wash Station

An onsite wash station would include two bays with water fill stations. The Environmental Protection Agency (EPA) considers equipment wash water to be a non-storm water discharge, therefore permits from wastewater authorities would be required. Thus, the wash station would be a closed loop system that would reclaim all water used to wash City vehicles, filtering and treating reclaimed water.

Generator

The Project would include a backup generator for emergency purposes. The backup generator would be run periodically for maintenance (weekly for one to two hours). The generator would be diesel powered and would provide enough power for operations for three days in event of emergency. It would be contained within an approximately 20 by 20-foot enclosure for security, to minimize noise, and to visually screen.

Telecommunication Tower

An approximately 50-foot-tall wireless communication tower would be constructed on the Project Area. The tower would allow for line-of-sight voice and data radio communication with the City's other facilities. The tower would be roof-mounted or ground-mounted, pending the final facility design.

Fencing, Site Lighting, Security Cameras

Except for the visitor parking area on the north-west side of the Project, and the Operations Building on the north-west side, the rest of the Project Area would be enclosed and secured by fences and gates with a height no greater than 12 feet. Fencing and gates that are public facing and visible from Cemetery Drive would be designed to match the surrounding cemetery landscape to include an ornamental style or wrought iron style. Perimeter security fencing that encloses the warehouse, yard space, and fleet space generally on the south-west, south-east, east, and north-east side of the Project would be chain-link or similar and screened with landscaping. Motorized access gates would be installed to allow ingress and egress for City staff and fleet vehicles to Oceanview Cemetery Road and Weiler Road. The gates would also have manual controls to account for potential power outages.

Site lighting would be installed for safety and visibility near buildings, along walkways, and within parking areas. The lighting would be downcast and shielded or recessed and would be dark-sky compliant. Fencing, security cameras and lighting would be coordinated to use shared poles, or high points on buildings, to reduce the number of poles in order to minimize obstructions and visual clutter.

Landscaping and Stormwater Treatment

The Project design would retain a 35-foot buffer from the neighboring cemetery along the north-west side of the property that would include grasses and landscaping to provide an aesthetic buffer. The Project would design structures and landscape screening to complement the existing cemetery, such as hedges, shrubs and/or trees. The Project would incorporate stormwater infiltration facilities including landscaped swales consistent with design guidance within the Humboldt Low Impact Development Stormwater Manual (NCSC 2021). These features are likely to be positioned downslope, to treat run-off from roof-line and hard-scape areas.

Utility Connections

Water and sewer service for the Project would be provided by the City. Electric power would be provided by PG&E, and telecommunications utilities by private providers. New water, sewer, and power utility

connections to the Project Area would be required. These connections may be connected through adjacent private properties or routed along Oceanview Cemetery Road to US 101.

1.6 Project Construction

Construction Timeline

The Project would be constructed within the next five to six years and is expected to last approximately 24-36 months during dry weather periods. Construction would occur intermittently within the 24 to 36 months. Construction activities would be limited to daytime work hours between 7:00 a.m. to 10:00 p.m., Monday through Friday, and may include occasional work on Saturdays.

Construction Activities and Equipment

All construction activities would be accompanied by both temporary and permanent erosion and sediment control best management practices (BMPs). Project construction would include the following activities:

- Clearing, grubbing, and tree removal – To clear the Project construction area.
- Grading/Excavation – Throughout the Project Area to achieve grade and dimensions to accommodate the office, shop and warehouse spaces, parking areas, and low impact development (LID) stormwater areas.
- Hauling – Transport of material to and from the Project Area.
- Underground Plumbing – Trench excavation and/or directional drilling to facilitate the installation of underground utilities within the Project Area.
- Lighting and Electrical– At select locations throughout the Project footprint.
- Building Construction – Erection of pre-engineered steel or stick-framed wood buildings.
- Concrete Paving– At sidewalks, curb ramps, curbs, and ADA parking stalls.
- Hot Mix Asphalt Paving – Along the parking and yard areas.
- Striping – For the parking and yard areas.
- Erosion Control – To minimize erosion and prevent sediment from leaving the Project Area.

Equipment required for construction would include:

- Large Excavator
- Scraper
- Mini Excavator
- Bulldozer
- Grader
- Loader
- Backhoe Loader
- Skid Steer
- Dump Truck
- Paver
- Large Roller
- Small Roller
- Concrete Truck
- Concrete Pump Truck
- Water Tender
- Tracked Manlift/Forklift
- Large Crane
- Small Crane

Jackhammers or similar pieces of equipment may be necessary to support curb-cuts for road access, connections to existing roadways, and connections to existing utilities. It is not anticipated that any temporary utility extensions, such as electric power or water, would be required for construction. Water from legal sources would be used for dust control, compaction, and re-vegetation.

Construction Access

The Project Area would primarily be accessed via Oceanview Cemetery Road, with secondary access through Weiler Road. Construction equipment staging would occur within the Project Area.

Erosion Control

Erosion control measures would be installed prior to construction and maintained until the site is stabilized.

Stockpiling and Staging

Stockpiling and staging areas would be located within the overall Project footprint. BMPs would be utilized to prevent materials, including hazardous materials, contained within the stockpiling and staging areas from being released into stormwater runoff. Excess soil, aggregate road base, and construction materials would be stored on site within designated stockpiling and staging areas. Excess materials may be re-used onsite for backfill and finished grading. During construction, all trash would be removed from the work site and disposed of on a regular basis. The contractor would haul additional excess materials off site for beneficial reuse, recycling, or legal disposal upon completion of component construction.

Dewatering

Groundwater dewatering is generally not expected but may be required. If needed, temporary groundwater dewatering would involve pumping water out of a trench or excavation area. Groundwater would typically be pumped to settling ponds, settling tanks, or into dewatering bags. Dewatering water may also be percolated back into the ground (in uplands). Discharge to regulated waters (wetlands) would not occur.

Tree and Vegetation Removal

Approximately 11 trees with a diameter at breast height (dbh) of 12-30 inches would be removed adjacent to the Oceanview Cemetery Road (Figure 5). If feasible, vegetation clearing would between October 1st and April 30th, outside of the nesting bird and bee flight season.

1.7 Maintenance and Operation

Following construction, the City would maintain and operate the facility. General operation and maintenance activities associated with the Project would include, but not be limited to, vehicle repairs, vehicle cleaning, generator maintenance, trash/debris removal, vegetation management, repaving, and building repairs. Waste streams are anticipated to include recyclable and non-recyclable waste items.

1.8 Required Agency Approvals

The City of Eureka is the CEQA lead agency for the Project.

The Project would not impact regulated jurisdictional wetlands. The Project would thus not require permits from the United States Army Corps of Engineering (USACE) under Section 404 of the Clean Water Act (CWA), or a corresponding Water Quality Certification from the North Coast Regional Water Quality Control Board (NCRWQCB) under Section 401 of the CWA.

The Project would not directly or indirectly impact anadromous waterways; therefore, no consultation with the National Marine Fisheries Service (NMFS) under Section 7 of the Endangered Species Act would occur. The Project does not require consultation with the United States Fish and Wildlife Service (USFWS), as potential impacts to federal special status plants or wildlife species would not occur. The Project also would

not impact a stream, banks of stream or riparian vegetation so a permit from the California Department of Fish and Wildlife (CDFW) would not be required.

The Project is located within the Airport Influence Area of the Samoa Field Airport (O33). The Humboldt County Airport Land Use Commission (ALUC) would be consulted, and a permit from the Humboldt County Department of Aviation may be required.

The Project is located outside the Coastal Zone and therefore would not require a Coastal Development Permit.

The Project would require a Construction General Permit from the State Water Resources Control Board, as well as building and grading permits from the City of Eureka's Building Division. Roadway improvements to Weiler Road may require a County encroachment permit.

The Project may require a Caltrans encroachment permit should utility connections be required to route down Oceanview Cemetery Road to US 101.

1.9 Compliance with Existing Regulations and Standard BMPs

The Project would abide by the following regulations and industry-accepted Best Management Practices (BMPs) to reduce or avoid potential adverse effects that could result from construction or operation of the Project. In addition to these BMPs, mitigation measures are presented in the analysis sections in Chapter 3, Environmental Analysis, to reduce potentially significant environmental impacts below a level of significance. The Project's Mitigation Monitoring and Reporting Program would include these actions to ensure implementation.

Stormwater Pollution Prevention Plan (SWPPP)

The Project would obtain coverage under the North Coast Regional Water Quality Control Board (NCRWCB), Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activities (General Permit). The City would submit permit registration documents (notice of intent, risk assessment, site maps, SWPPP, annual fee, and certifications) to the Water Board. The SWPPP would address pollutant sources, BMPs, and other requirements specified in the Order. The SWPPP would include erosion and sediment control measures, dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner would oversee implementation of the Project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.

Implementation of Geotechnical Design Recommendations

The Project would be designed and constructed in compliance with site-specific recommendations made in the Report of Geotechnical Investigation. This would include design in accordance with recommendations for earthwork, such as site clearing, cut/fill slopes, subgrade preparation, material for fill, compaction requirements, trenches, and foundations. The geotechnical recommendations would be incorporated into the final plans and specifications for the Project and would be implemented during construction.

1.10 Tribal Consultation

Pursuant to Public Resources Code Section 21080.3.1, the City reached out to the California Native American Heritage Commission (NAHC) to receive a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the Project. In addition to the three local area Wiyot tribes, the list included Big Lagoon Rancheria, Cher-Ae Heights Indian Community of the Trinidad Rancheria,

Hoopa Valley Tribe, Karuk Tribe, Round Valley Reservation/Covelo Indian Community, and Yurok Tribe. The City issued tribal notification letters to the tribes on the NAHC list on July 14, 2023. The City received a response from the Wiyot Tribe on July 20, 2023 requesting the inclusion of inadvertent discovery protocols. The Bear River Band of the Rohnerville Rancheria responded on August 8, 2023, requesting a copy of the cultural resource investigation prepared for the Project and indicating they would like to consult under AB 52; the cultural resource investigation was provided via email on August 21, 2023. Consultation with the Bear River Band of the Rohnerville Rancheria remains underway. No other responses have been received.

Additional outreach occurred within the Cultural Resources Investigation (CRI) which is discussed within Section 3.5.

2. Environmental Factors Potentially Affected

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

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

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

☒ I find that although the proposed project could have a significant effect on the environment, there would 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 would be prepared.

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

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

☐ I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect: (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Cristin Kenyon Date 9/13/23
Director of Development Services

3. Environmental Analysis

3.1 Aesthetics

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 view of the site and its surroundings? (Public Views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			✓	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			✓	

The proposed Project would be constructed at an undeveloped site adjacent to the Ocean View Cemetery, Lost Coast Brewery, and residential properties. The Project would construct a multi-story operations building with a footprint of approximately 14,000 square feet and a maximum height of approximately 50 feet. The Project would include warehouses and shops with a footprint of approximately 16,000 square feet each, bulk material bins, and a 50-foot-tall wireless telecommunication tower. Approximately 11 trees with a diameter at breast height (dbh) of 12-30 inches would be removed adjacent to the Oceanview Cemetery Road.

The current visual setting within the proposed Project site consists of an undeveloped vacant field with minimal vegetation that has been regularly managed by the Ocean View Cemetery. There are several large trees along the eastern edge of the Project Area (Image 3.1), which would be retained as buffer landscape for the Project. Terrain across the Project Area is convex and gradually slopes to the west and east (Humboldt County 2023h). Vegetation throughout the Project Area consists of non-native grasses and other low-habitat value vegetation.

a) Have a substantial adverse effect on a scenic vista? (No Impact)

For purposes of determining significance under CEQA, a scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. The Project Area is not located within a City or County mapped or designated scenic vista or scenic resources area. The closest natural feature/ highly valued landscape is Humboldt Bay located approximately 0.75 mile west

of the Project Area. Humboldt Bay is not visible from the Project Area, and even if it were, the Project Area is currently part of a private cemetery and therefore any viewpoint would not be accessible by the general public.

Views from Weiler Road toward Humboldt Bay through the Project Area are currently visually screened by large eucalyptus, pine, and cypress trees along the eastern property line (Image 3.1), as well as the Oceanview Cemetery and commercial structures such as Pacific Motorsports along US 101 (Image 3.2). Residential properties along Weiler Road are also below grade of the convex terrain of the Project Area (Humboldt County 2023h). Additionally, property east of Project Area is privately owned by the Oceanview Cemetery and is currently undeveloped with no available public views (Image 3.1). Proposed project elements, such as the multi-story operations building and telecommunications tower, may be visible above the trees from US 101, and from nearby residences. However, the proposed Project would have no impact on designated scenic vistas. No impact would result.

Image 3.1 Tree visual screening along the eastern edge of the Project Area.

Image 3.2 Oceanview Cemetery visual screening to the west due to elevated grading.

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

According to the California Scenic Highway Mapping System, there are no designated State or Federal scenic highways, or byways, in the Project vicinity (Caltrans 2023). US 101 is eligible for designation and is located approximately 700 feet west of the Project Area but, due to intervening topography, tall vegetation, and commercial properties, is not readily visible from the Project Area. There are no historic buildings or other structures in the Project Area, nor are there any rock outcroppings. Some existing trees would be removed within the Project Area which are visible from US 101, and Project elements (operations building, telecommunication tower) may be visible from US 101; however, this would not substantially damage scenic resources within the highway corridor. Due to the absence of a designated State scenic highway in or immediately adjacent to the Project, or views of the Project Area from an eligible State scenic highway, no impact would occur.

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

The proposed Project would not be located in an urbanized area, per CEQA Guidelines Section 15387, because Eureka has a population of less than 50,000 (US Census 2020). Thus, CEQA asks if the Project would substantially degrade the existing visual character or quality of public view of the site and its surroundings. The existing visual setting includes an undeveloped vacant field with minimal vegetation that has been regularly managed by the Ocean View Cemetery. There are several large trees along the eastern edge of the Project Area (Image 3.1) which would be retained as buffer landscape for the Project. However, approximately 11 trees with a dbh of 12-30 inches would be removed from the western side of the Project Area adjacent to the Oceanview Cemetery Road, including 10 Monterey Pine trees and 1 Douglas Fir (Figure 5). Eureka Municipal Code (EMC) 155.304.140 regulates the removal of trees within the City, requiring a Tree Removal Permit for the removal of listed protected tree species with a minimum 24-inch diameter, unless the trees are located within 15 feet of the footprint of a proposed structure or within the boundary of the associated access road, in which case removal is allowed by-right. Monterey Pine trees are not a listed protected tree species, and, pursuant to EMC 155.104.060.G, the Zoning Code does not apply to public projects of the City of Eureka. Therefore, no permit would be required for tree removal. The 11 trees are bordered to the west by larger and taller trees. Thus, their removal would be screened from public views and would not substantially degrade the existing visual character or quality of public view of the site and its surroundings.

Construction related impacts to visual character, including vegetation removal, grading, and heavy machinery, would be temporary in nature. Construction would occur intermittently over a period of approximately 24 to 36 months. During construction, public views from the west and south would be screened by commercial buildings such as Pacific Motorsports and the Lost Coast Brewery. Public views from Weiler Road would be screened by vegetation. Thus, public views of the construction would be minimal, and would not substantially degrade the existing visual character or quality of public view of the site and its surroundings.

Operational visual elements of the Project include a multi-story operations building, a warehouse building, a fleet maintenance shop, bulk material bins, parking lots, and a wireless telecommunication tower. All Project elements would be offset by a 35-foot buffer from the Oceanview Cemetery Road.

There are minimal public views from the north due to the large area privately owned by the Oceanview Cemetery. Public views of the Project Area from the south (from Sunset Road) are currently screened by the Lost Coast Brewery development. Public views from the southeast (Weiler Road) are limited due to visual vegetation screening from large cypress, eucalyptus, and pine trees. Public views from the west (US 101) are screened by commercial buildings such as Pacific Motorsports, as well as topographical screening from the Oceanview Cemetery (Image 3.2). Visible Project elements visible would be largely screened by open perimeter fencing no greater than 12 feet high; however, the multi-story office building and communication tower would still be visible above the fencing and surrounding vegetation.

The Project would not substantially degrade the existing visual character or quality of public view of the site and its surroundings due to the limited nature of public views of the site from the north, east, west, and the south. The elements visible from Oceanview Cemetery Road (a private road) would be blended and screened by a 35-foot-wide landscape buffer. Fencing and gates that are public facing and visible from

Cemetery Drive would be designed to match the surrounding Cemetery landscape to include ornamental fencing or wrought iron style fencing. The potential impact would be less than significant.

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

Project construction would be limited to day-time hours between 7:00 a.m. and 10:00 p.m., Monday through Friday, and may occasionally occur on Saturdays. There is no night work proposed, however construction may utilize night lighting for security purposes. If used, these lights would be the minimum lumens necessary and would be downcast and shielded, limiting direct light cast on adjacent properties.

Operationally, the Project would include lighting installation to improve safety and visibility in key locations. Lighting infrastructure would be installed at the exterior of buildings and throughout the parking areas. Lighting improvements to the site would comply with City code 155.308.050, which establishes standards for outdoor lighting to minimize light pollution, maintain enjoyment of the night sky and reduce light impacts on adjacent properties. The Project would also comply with Americans with Disabilities Act (ADA) requirements. New luminaires at driveway and parking areas would be mounted on poles above the ground. Luminaires would be downcast, and fixtures would be equipped with hoods (i.e., luminaires would be shielded). Fencing, security cameras, and lighting would be coordinated to use shared poles, or high-points on buildings, to reduce the number of poles, minimizing obstructions and visual clutter.

Project lighting would be shielded from nearby residential properties to the southeast by proposed perimeter fencing and existing trees to be retained. Outside light fixtures would be cut-off fixtures and would be located, mounted, aimed, and shielded so that direct light is not cast onto adjacent properties.

Exterior lighting would be designed to protect wildlife and night-time views, including views of the night sky. The Project would be designed to be consistent with the recommendations of the International Dark-Sky Association, which includes standards for fixtures, shielding, placement, height, and illumination levels. To comply with these requirements, lighting for the Project would be the minimum lumens necessary, directed downward, shielded, and pedestrian level when feasible. This would ensure lighting is contained within the site and does not cause significant lighting and glare impacts for surrounding land uses. A less than significant impact would occur.

3.2 Agriculture and Forest Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

There are no agricultural or forestry zoning or land uses within the Project Area (City of Eureka 2023a, City of Eureka 2023b). Although the Project Area was historically used for agriculture, primarily grazing, it is now owned by the Oceanview Cemetery. Additionally, it is zoned as Public Facility (PF) and is surrounded by urban uses such as commercial and residential zoning.

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance? (No Impact)

As of the date of this IS/MND, the Department of Conservation's (DOC's) Farmland Mapping and Monitoring Program has not been completed for Humboldt County. Therefore, lands within the Project Area have not been formally analyzed by the DOC to determine if they meet the criteria for being designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

For this analysis, "Agricultural Soils" and "Prime Agricultural Soils" designations via the Humboldt County WebGIS online mapping tool were utilized, which utilizes soils data from the Natural Resources Conservation Service (NRCS). According to the Humboldt County WebGIS, the Project Area does not include Prime Agricultural Soil (Humboldt County 2023a). The USGS Soil Report shows that the entirety of the Project Area consists of the soil series 212—Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes (Appendix D – USGS Soil Report). This series is identified as Prime farmland if irrigated. However, the Project Area is not irrigated, nor is the Project Area zoned for agricultural use or currently under agricultural production. Therefore, no prime farmland, unique farmland, or farmland of statewide importance would be converted. No impact would result.

d) Conflict with Agricultural Zoning or Williamson Act Contract? (No Impact)

Construction and operation of the Project would have no effect on agricultural zoning or Williamson Act contracts because none exist within or surrounding the Project Area. No impact would result.

C, d) Conflict with Forest Land Zoning or Convert Forest Land? (No Impact)

There are no forest lands, timberland, or associated zoning in or surrounding the Project Area; therefore, no forest land or timberland would be converted to non-forest or non-timberland use (City of Eureka 2023a, City of Eureka 2023b). No impact would result.

e) Convert Farmland or Forest? (No Impact)

The Project Area and surrounding land does not include farmland or forest. Thus, the Project does not involve changes in the existing environment, which, due to their location or nature, could result in the conversion of farmland to nonagricultural use or conversion of forest land to non-forest use. No impact would result.

3.3 Air Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 in 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?			✓	

The Project is located within the Humboldt County portion of the North Coast Air Basin (Air Basin), which is managed by the North Coast Unified Air Quality Management District (NCUAQMD). The NCUAQMD monitors air quality; enforces local, State, and Federal air quality regulations for counties within its jurisdiction; inventories and assesses the health risks of Toxic Air Contaminants (TACs); and adopts rules that limit pollution.

a) Conflict with or obstruct implementation of the applicable air quality plan? (Less than Significant with Mitigation)

This impact relates to consistency with an adopted attainment plan. Within the Project vicinity, the NCUAQMD is responsible for monitoring and enforcing local, State, and Federal air quality standards. Humboldt County is designated 'attainment' for all National Ambient Air Quality Standards. Pursuant to California Ambient Air Quality Standards, Humboldt County is designated attainment for all criteria air pollutants except PM_{10}. Humboldt County is designated as "non-attainment" for the State's PM_{10} standard.

PM_{10} refers to inhalable particulate matter with an aerodynamic diameter of less than 10 microns. PM_{10} includes emission of small particles that consist of dry solid fragments, droplets of water, or solid cores with liquid coatings. The particles vary in shape, size, and composition. PM_{10} emissions include unpaved road dust, smoke from wood stoves, construction dust, open burning of vegetation, and airborne salts and other particulate matter naturally generated by ocean surf. Therefore, any use or activity that generates airborne particulate matter may be of concern to the NCUAQMD. The proposed Project would create PM_{10} emissions in part through vehicles coming and going to the Project Area and the construction activity associated with the Project.

To address non-attainment for PM_{10}, the NCUAQMD adopted a Particulate Matter Attainment Plan in 1995. This plan presents available information about the nature and causes of PM_{10} standard exceedances and identifies cost-effective control measures to reduce PM_{10} emissions to levels necessary to meet California Ambient Air Quality Standards. However, the NCUAQMD states that the plan, "should be used cautiously as it is not a document that is required in order for the [NCUAQMD] to come into attainment for the state

standard" (NCUAQMD 2023). Compliance with applicable NCUAQMD PM_{10} rules is applied as the threshold of significance for the purposes of analysis. NCUAQMD Rule 104 Section D, Fugitive Dust Emissions, is applicable to the Project.

Rule 104, Section D – Fugitive Dust Emissions is used by the NCUAQMD to address non-attainment for PM_{10}. Pursuant to Rule 104 Section D, the handling, transporting, or open storage of materials in such a manner which allows or may allow unnecessary amounts of particulate matter to become airborne, shall not be permitted. Reasonable precautions shall be taken to prevent particulate matter from becoming airborne, including, but not limited to, covering open bodied trucks when used for transporting materials likely to give rise to airborne dust and the use of water during the grading of roads or the clearing of land. During earth moving activities, fugitive dust (PM_{10}) would be generated. The amount of dust generated at any given time would be highly variable and dependent on the size of the area disturbed at any given time, amount of activity, soil conditions, and meteorological conditions. Unless controlled, fugitive dust emissions during construction of the Project could have a potentially significant impact; therefore, Mitigation Measure AQ-1 would be incorporated to comply with NCUAQMD's Rule 104 Section D.

Operation of the Project would include the handling and transporting of materials, such as gravel and sand, in which particulate matter may become airborne. The storage of these materials would be within a covered area, reducing airborne particulate matter generation. The Project would be a relocation of an existing corp yard; thus, operation of the Project is not expected to increase emissions or conflict with NCUAQMD's Rule 104 Section D. The operational impact would be less than significant.

Mitigation

Implementation of Mitigation Measures AQ-1 is proposed to reduce the potential impact related to PM_{10} fugitive dust by requiring dust reduction measures during Project construction.

Mitigation Measure AQ-1: Measures to Reduce Air Pollution

The contractor shall implement the following measures during construction:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, active graded areas, excavations, and unpaved access roads) shall be watered in areas of active construction as necessary.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All vehicle speeds on unpaved roads shall be limited to 15 mph, unless the unpaved road surface has been treated for dust suppression with water, rock, wood chip mulch, or other dust prevention measures.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes. Clear signage noting idling time requirements shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications.
- A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action

within 48 hours of the complaint. The NCUAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

With implementation of Mitigation Measure AQ-1, the Project would implement relevant fugitive dust (PM_{10}) controls during construction and would not conflict with applicable air quality plans. This impact would be reduced to a less-than-significant level with mitigation.

b) Result in a cumulatively considerable net increase in any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard? (Less than Significant with Mitigation)

The Project's potential to generate a significant amount of criteria pollutants of concern during Project construction and operation is assessed in this Section. As noted above, Humboldt County is designated non-attainment relative to the State's PM_{10} standard. The County is designated attainment for all other state and federal standards. Potential impacts of concern would be exceedances of State or Federal standards for PM_{10}. Localized PM10 is of concern during construction because of the potential emission of fugitive dust during earth-disturbing activities.

Construction

Localized PM_{10}

The Project would include clearing and grubbing, grading, vegetation removal, asphalt paving, building construction, and landscaping activity. Generally, the most substantial localized air pollutant emissions would be dust generated from site clearing, demolition, and grading. If uncontrolled, these emissions could lead to both health and nuisance impacts. Construction activities would also temporarily generate emissions of equipment exhaust and other air contaminants. The Project's potential impacts from equipment exhaust are assessed separately below.

The NCUAQMD does not have formally adopted thresholds of significance for fugitive, dust-related particulate matter emissions above and beyond Rule 104 Section D, which does not provide quantitative standards. For the purposes of analysis, this document uses the Bay Area Air Quality Management District (BAAQMD) approach to determining significance for fugitive dust emissions from Project construction. The BAAQMD bases the determination of significance for fugitive dust on the control measures to be implemented. If all appropriate emissions control measures recommended by BAAQMD are implemented for a project, then fugitive dust emissions during construction are not considered significant. BAAQMD recommends a specific set of "Basic Construction Measures" to reduce emissions of construction generated PM_{10} to less than significant. Without incorporation of these Basic Construction Measures, the Project's construction-generated fugitive PM_{10} (dust) would result in a potentially significant impact.

The Basic Construction Measure controls recommended by the BAAQMD are incorporated into Mitigation Measure AQ-1. These controls are consistent with NCUAQMD Rule 104 Section D, Fugitive Dust Emission, and provide supplemental, additional control of fugitive dust emissions beyond that which would occur with Rule 104 Section D compliance alone. Therefore, with incorporation of Mitigation Measure AQ-1, the Project would result in a less than significant impact from construction-period PM_{10} generation and would not violate or substantially contribute to an existing or projected air quality violation.

Regional Criteria Pollutants

The NCUAQMD does not have established CEQA significance criteria to determine the significance of impacts that would result from projects such as the proposed Project; however, the NCUAQMD does have

criteria pollutant BACT thresholds for new or modified stationary source projects proposed within the NCUAQMD's jurisdiction. For construction emissions, the NCUAQMD has indicated that emissions are not considered regionally significant for projects whose construction would be of relatively short duration, lasting less than one year. NCUAQMD has indicated that it is appropriate for lead agencies to compare proposed construction emissions that last more than one year to its Best Available Control Technology (BACT) thresholds for stationary sources identified in Rule 110 (1), which are:

– Nitrogen Oxides (NOx) – 40.0 tons per year, 50.0 pounds per day

– Reactive Organic Gases (ROG) – 40.0 tons per year, 50.0 pounds per day

– PM_{10} – 15.0 tons per year, 80.0 pounds per day

– Carbon Monoxide (CO) – 100 tons per year, 500.0 pounds per day

CalEEMod version 2022.1.1.14 was used to estimate air pollutant emissions from Project construction (Appendix B – Air Quality Modeling Results). The Project's estimated construction emissions are provided in Tables 3.3-1 and 3.3-2 for annual and daily emission rates, respectively. As shown in the tables, the Project would not exceed the NCUAQMD's thresholds of significance. Therefore, the Project's construction emissions are considered to have a less than significant impact.

Table 3.3-1 Annual Construction Regional Pollutant Emissions

Parameter	Maximum Annual Emissions (tons/year)			
	ROG	NO_X	CO	PM_{10}
Project Construction (2029)	0.14	1.27	1.73	0.17
Project Construction (2030)	0.67	0.09	0.14	<0.1
NCUAQMD Stationary Source Thresholds	40.0	40.0	100	15.0
Exceed Threshold?	*No*	*No*	*No*	*No*

Table 3.3-2 Daily Construction Regional Pollutant Emissions

Parameter	Average Daily Emissions (pounds/day)			
	ROG	NO_X	CO	PM_{10}
Project Construction (2029)	0.75	6.95	9.46	0.95
Project Construction (2030)	3.68	0.49	0.79	0.02
NCUAQMD Stationary Source Thresholds	50.0	50.0	500.0	80.0
Exceed Threshold?	*No*	*No*	*No*	*No*

Operation

Following construction, operation of the Project would not include any stationary sources of air emissions, with the exception of the infrequent use of a fuel-powered generator during electrical power outages and weekly one to two hours permit-required maintenance checks. The use of the generator would be infrequent; however, the generator was considered in this operational impact analysis. The Project would not result in an increase in operational trips (employee, response trips) as the Project involves relocation and concentration (vs. expansion) of existing facilities and operations. Therefore, the operational analysis does not include emissions from mobile sources. Project operational emissions were estimated using CalEEMod version 2022.1.1.14 and include emergency back-up generator use. Emissions were modeled

for the year 2029. As shown in Table 3.3-3, the Project's operational emissions are well below the NCUAQMD's stationary sources emission thresholds. Therefore, the project's operational emissions are considered to have a less than significant impact.

Table 3.3-3 Operational Regional Pollutant Emissions (2029)

Parameter	Emissions (tons/year)			
	ROG	NO_X	CO	PM_{10}
Project Operation	0.67	0.50	0.74	0.03
NCUAQMD Stationary Source Thresholds	40.0	40.0	100	15.0

c) Expose sensitive receptors to substantial pollutant concentrations? (Less than Significant with Mitigation)

Sensitive receptors include school-aged children (schools, daycare facilities, playgrounds), the elderly (retirement community, nursing homes), the infirm (medical facilities and offices), nearby residences, and those who exercise outdoors regularly (public and private exercise facilities, parks). The nearest sensitive receptors to the Project Area include residential housing, with the nearest residence located on Weiler Road within approximately 300 feet of the Project. The nearest school, Alice Birney Elementary School, is located approximately 0.70 miles northeast of the Project.

BAAQMD's Basic Construction Measures included in Mitigation Measure AQ-1 (BMPs to Reduce Air Pollution) minimize idling times for trucks and equipment to five minutes (as required by the California Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling, included in Title 13, Section 2485 of California Code of Regulations [CCR]) and ensure construction equipment is maintained in accordance with manufacturer's specifications.

Project construction activities would occur intermittently over 24-36 months. The Project would not result in prolonged construction equipment use. Due to the distance to the nearest potential receptor, the limited duration of construction and extent of construction activities, and the implementation of Mitigation Measure AQ-1, which would control fugitive dust, the Project would not result in the exposure of sensitive receptors to substantial pollutant concentrations. Therefore, with implementation of Mitigation Measure AQ-1, the construction-related impact would be less than significant with mitigation.

Following construction, the Project would include a backup generator that would be utilized during power outages and weekly for one to two hours for maintenance. Other air emission from the Project would be generated primarily from employee and fleet vehicles. However, it is expected that these emissions would reduce as the City continues its effort to transition the fleet to electric vehicles. Additionally, City employees receive free bus passes, and the Project includes both short-term and long-term bike parking areas. As the Project involves the relocation of existing operations and employees, the Project would not result in significant new emissions and would not expose sensitive receptors to substantial pollutant concentrations. The operational impact would be less than significant.

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

Implementation of the Project would not result in major sources of odor. The Project type is not one of the common types of facilities known to produce odors (i.e., landfill, coffee roaster, wastewater treatment

facility, etc.). Minor odors from the use of equipment during construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. The Project emissions and odors caused by construction would not adversely affect a substantial amount of people, as areas directly to the west, north, and east of the Project are privately owned by the Oceanview Cemetery and do not attract a high volume of people. To the south, the closest residents are approximately 300 feet away, and the Lost Coast Brewery is approximately 400 feet away.

The City has not received any odor-related complaints regarding the existing corp yard facility and the use of odor-related substances would not change at the new Operations Complex. Following construction, Project operations would not result in any major sources of odor or emissions. Therefore, a less than significant impact related to both Project construction and operation would result.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

A Biological Resources Assessment was prepared by SHN (2023) to evaluate the potential for any special status plants and animals within the Project Area, and is included as Appendix C. Under Section 7 of the Endangered Species Act (ESA), critical habitat should be evaluated if designated for Federally listed species that may be present in the Biological Study Area (BSA); however, no Critical Habitat is present for any species (SHN 2023). The BSA, or the area directly or indirectly impacted by the proposed Project, encompasses a 0.25-mile radius around the Project Area.

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

Special-status Plant Species

Special status plant species under State jurisdiction include those listed as endangered, threatened, or as candidate species by the CDFW under the California Endangered Species Act (CESA). Plant species on the California Native Plant Society (CNPS) California Rare Plant Ranking (CRPR) Lists 1A, 1B and 2A and 2B are considered eligible for State listing as endangered or threatened pursuant to the California Fish and Game Code; CDFW has oversite of these special status plant species as a trustee agency. As part of the CEQA process, such species should be considered as they meet the definition of Threatened or Endangered under Sections 2062 and 2067 of the California Fish and Game Code. There are occasions where CRPR List 3 or 4 species area be considered of special concern for populations at the periphery of a species range, or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology.

Additionally, CDFW maintains lists of special plants. These lists include a species conservation ranking status from multiple sources, including Federal Endangered Species Act (FESA), CESA, federal departments with unique jurisdictions, CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank (Appendix C – Biological Resource Assessment). Species with State ranks of S1-S3 are also considered highly imperiled.

Two seasonally appropriate floristic surveys for special status plants were conducted in the Project Area by SHN on June 5 and July 14, 2023. No special status plants were detected in the Project Area (Appendix C – Biological Resource Assessment).

Based on database searches, historical records, and an overview of the primary literature, nine special status plant species had a moderate to high potential of occurring in the Project Area:

– Pacific gilia (*Gilia capitata ssp. pacifica*), S2, 1B.2, Moderate potential.
– Perennial goldfields (*Lasthenia californica ssp. Macrantha*), S2, 1.B.2, Moderate potential.
– seaside pea (*Lathyrus japonicus*), S2, 2.b.1, Moderate potential.
– Howell's montia (*Montia howellii*), S2, 2.b.2, Moderate potential.
– Wolf's evening primrose (*Oenothera wolfii*), G2, S1, 1.B.1, Moderate potential.
– maple-leaved checkerbloom (*Sidalcea malachroides*), S3, Moderate potential.
– Siskiyou checkerbloom (*Sidalcea malviflora ssp. patula*), S2, 1B.2, High potential.
– coast checkerbloom (*Sidalcea oregana ssp. eximia*), S1, 1B.2, High potential.
– Scouler's catchfly (*Silene scouleri ssp. scouleri*), S2S3, 2B.2, High potential.

Forty additional special status species reported for the Eureka and surrounding USGS 7.5-minute topographic quadrangles were thought to have a low or no likelihood of occurring within the Project Area (Appendix C – Biological Resource Assessment). Given that required protocol level plant surveys were completed with no detections of sensitive plant species during the initial surveys, and given the habitat is highly disturbed through regular cemetery maintenance, the impact on special-status plants is less than significant.

Special Status Wildlife Species

A database search of the California Natural Diversity Database (CNDDB), Biogeographical Information and Observation System (BIOS), CDFW's Special Animals of California List, U.S. Fish and Wildlife Service

(USFWS) Information for Planning and Consultation (IPaC), and USFWS Critical Habitat Portal was conducted.

CDFW's lists include a species conservation ranking status from multiple sources, including FESA, CESA, Federal departments with unique jurisdictions, CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank (Appendix C – Biological Resource Assessment). Species with State ranks of S1-S3 are also considered highly imperiled.

One special-status animal species (Rufous hummingbird) was observed within, or adjacent to, the BSA during site investigations, and eight species have a moderate to high potential of occurring (Appendix C– - Biological Resources Report). The potential for species to occur was determined at the level of the BSA. Mitigations measures to reduce potential impacts to listed and special status species are provided below.

Special Status Mammal Species

Two special status bat species, the S4 Hoary bat (*Lasiurus cinereus*) and S3 Long-eared myotis (*Myotis evotis*), have a moderate potential of occurring within the BSA. Although these species were not observed, suitable roosting habitat occurs within and adjacent to the BSA (Appendix C – Biological Resources Assessment). Vegetation removal and disturbance has the potential to impact roosting bats, if present.

Mitigation

The Hoary and Long-eared myotis bat have a moderate potential to occur based on the presence of suitable habitat nearby of the Project vicinity. Mitigation Measure BIO-1 would be incorporated into the Project.

> **Mitigation Measure BIO-1: Avoidance and Minimization Measures to Protect Special Status Bats**
>
> If trees are to be removed during any season, conduct a phased removal of trees where selected limbs and branches not containing cavities or peeled bark are removed on the first day, with the remainder of the tree removed on the second day.

Implementation of Mitigation Measure BIO-1 would reduce potential impacts to special status bat species to a less-than-significant level.

Special Status Bird Species

There is one special status bird species, the Rufous hummingbird (*Selasphorus rufus*), that has been detected within the BSA (Appendix C – Biological Resources Assessment). This species nests in open, shrubby areas, yards, parks, and forested areas. This species is typically seen during migration in Humboldt County; however, it is a rare breeder locally.

There are four additional special status bird species with a moderate to high potential to occur within the BSA.

– Cooper's Hawk (*Accipiter cooperii*), S4, Moderate potential.
– White-tailed kite (*Elanus leucurus*), S3S4, Moderate potential.
– Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*), S2S3, Moderate potential.
– Black-capped chickadee (*Poecile atricapillus*), S3, High potential.

Vegetation removal and disturbance has the potential to impact nesting and migratory birds, if present. Therefore, Mitigation Measure BIO-2 has been incorporated into the Project.

Mitigation

One bird species (Rufous hummingbird) was detected within the BSA. Four other special status bird species have a moderate to high potential to occur. In addition, migratory and nesting birds are protected by the Migratory Bird Treaty Act and Fish and Game Code. If State special status and/or native migratory birds are nesting in the Project Area, or up to 200 feet during construction activities (as feasible taking into account private property), these species may be impacted by removal of nesting habitat, elevated levels of noise, and anthropogenic disturbance. Mitigation Measure BIO-2 would be incorporated into the Project to avoid and minimize these potential impacts.

> **Mitigation Measure BIO-2: Avoidance and Minimization Measures to Protect Special Status and Nesting Birds**
>
> Conduct vegetation removal and other ground-disturbance activities associated with any construction activities between late August and mid-March, when birds are not typically nesting; or
>
> If vegetation removal or ground-disturbing activity is to take place during the nesting season (March 15 to August 15 for most birds), a qualified biologist shall conduct a pre-construction nesting bird survey. Pre-construction surveys for nesting pairs, nests, and eggs shall occur within the construction limits and within 100 feet (200 feet for raptors) of the construction limits. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the USFWS or CDFW, as applicable, and implemented to prevent abandonment of the active nest.

Implementation of Mitigation Measure BIO-2 would reduce potential impacts to special status and nesting bird species to a less-than-significant level.

Special Status Amphibian and Reptiles Species

No special status amphibian or reptile species have a moderate or high potential to occur within the BSA due to a lack of suitable habitat available (Appendix C – Biological Resource Assessment).

Special Status Fish Species

The BSA has no aquatic resources that provide suitable habitat for special status fish (Appendix C – Biological Resource Assessment).

Special Status Invertebrate Species

The BSA has no aquatic resources that provide suitable habitat for special status mollusk invertebrates. One special status insect, the S1S2 Obscure Bumble Bee (*Bombus caliginosus*) has a moderate potential to occur within the BSA. Their populations have experienced severe declines range wide. No other special status invertebrate species have a moderate to high potential of occurring within the BSA (Appendix C – Biological Resource Assessment). Vegetation removal has the potential to impact the Obscure Bumble Bee if present.

Mitigation

The Obscure Bumble Bee has a moderate potential to occur based on the presence of suitable habitat within the BSA. Mitigation Measure BIO-3 would be incorporated into the Project.

Mitigation Measure BIO-3: Avoidance and Minimization Measures to Protect Special Status Bees

Clear vegetation during late fall to early spring months (October 1 to April 30) to avoid peak flight season, minimize impacts to floral resources, and reduce the potential for floral resources to draw bumble bees into the Project Area. During grubbing and other ground-disturbing activities that occur during the typical nesting bee active period (typically May 1 to September 30), a qualified biologist shall survey the area for bumble bees, with particular attention to potential floral resources and potential nest sites. If a special-status bee species is detected, the biologist shall notify CDFW immediately to determine appropriate avoidance and/or minimization measures.

Implementation of Mitigation Measure BIO-3 will reduce potential impacts to special status bee species to a less-than-significant level.

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? (No Impact)

Within the Project Area, no stream or riparian habitat occurs (City of Eureka 2023e). Additionally, vegetation within the Project Area has been actively cleared and managed by the Ocean View Cemetery, and mostly consists of non-native grasses with no present sensitive natural communities (Appendix C – Biological Resources Assessment). No impact would result.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? (No Impact)

The Project is located on the top of a convex topographic feature that slopes towards the east and west. A site-specific wetland delineation was not conducted as part of the Biological Resources Assessment (SHN 2023). However, during the site visit no watercourses, Ordinary High Water Marks, or wetland conditions were observed within the Project Area (SHN 2023). Additionally, the Project Area has well drained soils, gentle slopes, and upland species dominance (SHN 2023). The Project is not located near a riparian corridor or riparian environment, and a search of the USFWS National Wetlands Inventory indicates no streams or wetlands are present within the Project Area (City of Eureka 2023e). Therefore, no impact would result.

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

Project construction and operations do not include in-water work or any other activity that might impede fish migration. No waterways or wetlands exist within the Project Area. Project construction and operations would include fences and gates around and within the Project Area to provide privacy, security, and direct access. The Project Area is located within a developed city area and is not located within or adjacent to sloughs, rivers, creeks, gulches and greenways, and other naturalized areas. The Project Area is also not located within essential habitat for wildlife connectivity (CDFW 2023). Common terrestrial wildlife would be able to move around the Project Area through existing corridors (e.g., Ocean View Cemetery). A less than significant impact would result.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (No Impact)

The Natural Resources and Open Space element of the Eureka General Plan (2018) summarizes policies germane to the protection of biological resources. Applicable policies include NR-1.5, which establishes BMPs, NR-2.7, NR-4.2, EMC implemented within Chapter 54 (Storm Water Quality Management and Discharge Control), as well as through the City's MS4 permit. Policy NR-1.5 requires the use of BMPs to minimize erosion and water quality degradation. These measures are discussed within Section 1.9 of the IS/MND. Policy NR-2.7 encourages the retention of existing trees and native vegetation through site planning. With current Project design plans, 11 trees on the western side of the Project Area would be removed, while exterior trees along the eastern Project Area would be retained and integrated into buffer landscape. Additionally, the City has landscaping requirements that prohibit use of invasive plants and require 75% native by count in required parking lot landscaping (155.328.050). This is consistent with NR-2.7, which promotes the use of native plants and prohibits the use of highly invasive plants in landscaping. Project landscape would be consistent with this requirement, planting a minimum of 75% native species.

Eureka General Plan Policy NR-2.7 is implemented through the City's tree removal regulations in EMC 155.304.140, which require a Tree Removal Permit for the removal of listed protected tree species with a minimum 24-inch diameter, unless the trees are located within 15 feet of the footprint of a proposed structure or within the boundary of the associated access road, in which case removal is allowed by-right. Monterey Pine trees are not a listed protected tree species, and, pursuant to EMC 155.104.060.G, the Zoning Code does not apply to public projects of the City of Eureka. Therefore, no permit would be required for proposed tree removal.

Eureka General Plan Policy NR-4.2 is implemented through EMC 155.308.050, which establishes standards for outdoor lighting to minimize light pollution, maintain enjoyment of the night sky and reduce light impacts on adjacent properties. Site lighting would be installed for safety and visibility near buildings, along walkways, and within parking areas. The lighting would be downcast and shielded or recessed as well as dark-sky compliant.

The Project would requiring grading and building permits from the City of Eureka's Building Division, and the application would be reviewed by Building, Planning and Public Works to ensure consistency with all applicable provisions of the City of Eureka General Plan and Municipal Code.

No conflicts with policies or ordinances protecting biological resources have been identified. Therefore, no impact would result.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (No Impact)

There are no adopted Habitat Conservation, Community Conservation, or approved local, regional, or State habitat conservation plans that apply to the Project Area. No impact would result.

3.5 Cultural Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?		✓		

A Cultural Resources Investigation Report (CRI) was prepared for the project by William Rich and Associates (WRA 2023). The cultural resources study area is described as the Area of Potential Effect (APE). The investigation assessed the potential for surficial and/or buried archaeological and historical resources in the proposed improvement area through the completion of the following:

– Records and literature search at the Northwest Information Center (NWIC) of the California Historical Resources Information Center (CHRIS);
– Further literature review of publications, files, and maps for ethnographic, historic-era, and prehistoric resources and background information;
– Communication with the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File and contact information for the appropriate tribal communities;
– Contact with the appropriate local Native American Tribes; and
– Pedestrian surveys of the Project Area.

Study results were used as a technical basis for evaluating potential impacts to historic and cultural resources under CEQA.

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (No Impact)

The cultural resources investigation did not identify historical resources within the APE. Additionally, during the field surveys of the CRI, no historical resources were encountered. Thus, no impact would result.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? (Less than Significant Impact with Mitigation)

The area near the APE is generally known to be culturally sensitive. However, despite several previous surveys of the area noted in the NWIC record search and the cultural resources investigation completed by William Rich and Associates, cultural resources were not observed (WRA 2023). William Rich and Associates conducted field surveys on July 5, 2023, and July 21, 2023. William Rich and Associates was also present at the geotechnical borings conducted by LACO for the geotechnical investigation. A Tribal Cultural Monitor from the Bear River Band of the Rohnerville Rancheria were also present during the pedestrian survey and geotechnical field work. The APE exhibited a relatively high amount of mineral soil

visibility, mostly due to burrowing rodent activity. No artifacts, features, sites, or other cultural resources were identified (WRA 2023).

The cultural resource investigation notes that although archaeological remains would be expected from one or more cultural resources, none were encountered. It is still possible that small scale or ephemeral resource types may be present.

Native American tribes and the NAHC were contacted to discuss the proposed Project as part of the cultural resource investigation. Communication between WRA, the Blue Lake Rancheria, the Wiyot Tribe, and the Bear River Band of the Rohnerville Rancheria occurred on August 3, 2023, as documented in the cultural resource investigation. The Wiyot Tribe requested that the cultural resource investigation include protocols for inadvertent archaeological discovery and the Bear River Band of the Rohnerville Rancheria Tribe requested that a tribal monitor be present during ground disturbing activities. The requests from the tribes have been incorporated into Mitigation Measure CR-1 and CR-2. To ensure potential impacts to archeological resources remain less than significant, Mitigation Measure CR-1 and CR-2 would be implemented to establish protocols recommended by the cultural resource investigation, protocols for inadvertent archaeological discovery, and the presence of a tribal monitor during ground disturbance.

Mitigation

Implementation of Mitigation Measure CR-1 and CR-2 would reduce the potential impact to archaeological resources by requiring procedures that follow tribal consultation, and what shall occur in the event of inadvertent discovery.

Mitigation Measure CR-1: Requirement for a Cultural Monitor to Protect Cultural Resources

- A tribal monitor will be hired by the City or contractor prior to construction.
- A tribal monitor will be onsite during grading and earthwork activities. Specific grading depths requiring a monitor will be clarified in writing with requesting tribal representatives prior to construction.
- Tribal monitors will be empowered to halt heavy equipment operations in the event that significant cultural features or human remains are uncovered. Construction activities in the immediate vicinity will be delayed until a qualified archaeologist, has assessed the significance of the find.

Mitigation Measure CR-2: Inadvertent Discovery of Cultural Resources

If cultural resources are encountered during construction activities, all onsite work shall cease in the immediate area and within a 50-foot buffer of the discovery location. A qualified archaeologist will be retained to evaluate and assess the significance of the discovery, and develop and implement an avoidance or mitigation plan, as appropriate. For discoveries known, or likely to be associated with Native American heritage (precontact sites and select historic period sites), tribal representative will also be contacted immediately to evaluate the discovery and, in consultation with the Project proponent, the City, and consulting archaeologist, develop a treatment plan in any instance where significant impacts cannot be avoided. Precontact materials that could be encountered include obsidian and chert debitage or formal tools, grinding implements (e.g., pestles, handstones, bowl mortars, slabs), locally darkened midden, deposits of shell, faunal remains, and human burials. Historic archaeological discoveries may include nineteenth century or early twentieth century

farming machinery, building foundations, structural remains, or concentrations of artifacts made of glass, ceramics, metal, or other materials found in buried pits, wells, or privies.

With incorporation of Mitigation Measure CR-1 and CR-2, potential impacts within the APE would be reduced to a less than significant level through the production of the monitoring plan, monitoring during construction, and proper handling of potential archaeological resources that could be inadvertently discovered.

c) Disturb any human remains, including those interred outside of formal cemeteries? (Less than Significant Impact with Mitigation)

The Project Area is on land previously owned by the Oceanview Cemetery; however, it has been unused, and no burials have taken place within the area. While the cultural resource investigation did not identify any archaeological resources within the APE, inadvertent discovery of human remains may still occur. In the event that human remains are encountered during construction, Mitigation Measure CR-3 would be implemented to ensure any potential impact would be less than significant.

Mitigation

Implementation of Mitigation Measure CR-3 would reduce the potential impact to archaeological resources or human remains by requiring procedures that shall be taken in the event of inadvertent discovery.

Mitigation Measure CR-3: Inadvertent Discovery of Human Remains

If human remains are discovered during project construction, work shall stop at the discovery location, within 66 feet, and any nearby area reasonably suspected to overlie adjacent to human remains (PRC, Section 7050.5). The Humboldt County Coroner will be contacted to determine if the cause of death must be investigated. If the Coroner determines that the remains are of Native American origin, it is necessary to comply with State laws relating to the disposition of Native American burials, which fall within the jurisdiction of the NAHC (PRC, Section 5097). The Coroner shall contact the NAHC. The descendants or most likely descendants of the deceased shall be contacted, and the descendants shall complete an inspection and/or make a recommendation within 48 hours of being notified. Work shall not resume at the discovery location and surrounding 66-foot buffer, until they have made a recommendation, or the 48 hours has passed, to the landowner or the person responsible for the excavation work for means of treatment and disposition, with appropriate dignity, of the human remains and any associated grave goods, as provided in PRC, Section 5097.98.

Implementation of Mitigation Measure CR-3 would reduce the potential impacts to a less-than-significant level during construction because a plan would be implemented to address discovery of unanticipated human remains and to preserve and/or record those resources consistent with appropriate laws and requirements.

3.6 Energy Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impacts 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?				✓

a) Result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation? (Less than Significant with Mitigation)

Construction

Temporary energy use in connection with Project construction would entail consumption of diesel fuel and gasoline by construction equipment and by the transportation of earth moving equipment, construction materials, supplies, and construction personnel. Given the construction period and implementation of State regulations regarding vehicle emission and fuels standards, such as the Low Carbon Fuel Standard and anti-idling regulations, energy use related to construction would not be wasteful or inefficient.

Inefficient construction-related fuels use would also be avoided due to the measures in Mitigation Measure AQ-1 (Measures to Reduce Air Pollution). Equipment idling times would be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes or less (as required by Mitigation Measure AQ-1). Because construction would not encourage activities that would result in the use of large amounts of fuel and energy in a wasteful manner, and with the incorporation of Mitigation Measure AQ-1 which would reduce idling time, impacts related to the inefficient use of construction-related fuels would be less than significant with mitigation.

Operation

Energy is also required to sustain the facility during operation, such as for power and heating. The Project would use the minimal amount of energy necessary to operate utilities such as drinking water, wastewater, and telecommunications. The Project would utilize rooftop solar panels to offset energy consumption. The operation and maintenance of the Project would not generate additional vehicle trips, above the existing City conditions, as vehicle trips would be consolidating trips to a single location, reducing trip generation. Additionally, City employees receive free bus passes, and the Project includes both short-term and long-term bike parking areas. The City's transition to an electric fleet will further reduce fossil fuel-based energy consumption. Therefore, the Project would not result in an increase in energy use above the existing conditions. Additionally, the City plans to surplus the existing corp yard property, which includes older buildings with less efficient energy standards. Because the Project would comply with State Title 24 energy efficiency requirements and generate minimal on-road trips, the Project would not result in wasteful or inefficient energy usage. The operational impact would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (No Impact)

Implementation of the Project would not obstruct a State plan for renewable energy. The Project would not conflict with or inhibit the implementation of the State Energy Action Plan, or other State regulations. Project construction would not inefficiently utilize energy due to incorporation of Mitigation Measure AQ-1, which limits idling time and provides measures to protect air quality. The Project would temporarily require the use of equipment to construct the components of the Project; however, these activities would be temporary and would not interfere with the broader energy goals of the State.

Operationally, the Project would replace the existing corp yard with modern and more efficient buildings. Energy-consuming equipment anticipated to be used during operation of the Project includes mechanical and electrical equipment associated with the new Operations Complex and new lighting. The proposed Project would minimize energy consumption in accordance with City of Eureka Zoning Code 150.120 (Energy Conservation), which requires compliance with Title 24. The Operations Complex would be designed and installed in accordance with applicable design standards, including Title 24 Building Energy Efficiency Standards for non-residential buildings. The Project would not adversely impact operational automobile-related energy consumption. Project lighting would be limited and energy efficient. The majority of California's energy-related plans are not directly applicable to the Project or its operations. Additionally, the Project would comply with City Policies, including U-5.5 - Renewable Energy through the inclusion of solar panels, and U-5.10 - Underground Utilities by undergrounding required new utility connections as described in Section 3.19. The Project would, therefore, not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. No impact would result.

3.7 Geology and Soils

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?				✓
ii. Strong seismic ground shaking?			✓	
iii. Seismic related ground failure, including liquefaction?				✓
iv. Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?			✓	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse?				✓
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?				✓
e) Have soils incapable of adequately supporting the use of septic tanks or alternative 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?		✓		

Regional geology is likely influenced by seismic activity as a result of the relatively close proximity of the Mendocino Triple Junction to the Project. The Project is located approximately 3 miles north of the Little Salmon fault zone (CGS 2023). The Project Area is entirely comprised of 212–Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes (Appendix D – USGS Soil Report). A geotechnical report has been prepared for the Project (LACO 2023). The geotechnical report notes the Project Area is located on an uplifted marine terrace in the Coast Ranges Geomorphic Province of Northern California (LACO 2023).

a.i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (No Impact)

According to the California Geological Survey (CGS), there are no known Alquist Priolo Fault Zones in the Project Area (CGS 2023); therefore, the Project would have no impact with regard to the rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map. The nearest fault zone is the Holocene-age Little Salmon fault zone approximately three miles south of the Project (CGS 2023). The Project Area is not in a Fault Rupture Hazard Zone or a Seismic Hazard Zone (LACO 2023). Project activities, which include shallow excavation and repaving, would not cross any known fault. The geotechnical investigation noted the Project Area has a low potential for a surface fault rupture due to the distance between the Project Area and the closest known active fault zone (LACO 2023). No impact related to fault rupture would result.

a.ii) Strong seismic ground shaking? (Less Than Significant)

The Humboldt County coast is a highly active tectonic region that has been subjected to numerous earthquakes of low to moderate strength and occasionally to very strong earthquakes. Seismicity in the region is attributed primarily to the Mendocino Triple Junction, or the interaction between the Pacific, Gorda, and North American plates. Because the Project is located within a seismically active area, the probability that strong ground shaking associated with large magnitude earthquakes would occur during the design life of the Project is high.

Project implementation would not increase the risk of strong seismic ground shaking or exposure to strong seismic ground shaking above existing conditions. The risk of damage to the proposed Project from larger magnitude earthquakes (7.5 or greater) is within building code criteria and not particular to the Project Area. The Project would also be designed and constructed in conformance with the site-specific recommendations contained in the geotechnical report prepared for the Project and California Building Code regulations, which include seismic standards. Additionally, the City plans to surplus the existing corp yard property, which includes aging buildings that were built to older seismic standards within an area subject to liquefaction. By following the recommendations contained in the geotechnical report, the construction and operation of the Project would result in a less than significant impact.

a.iii, a.iv, c, d) Liquefaction, landslides, or otherwise unstable soils? (No Impact)

Liquefaction is a phenomenon involving loss of soil strength and resulting in fluid mobility through the soil. Liquefaction typically occurs when loose, uniformly sized, saturated sands or silts are subjected to repeated shaking in areas where the groundwater is less than 50 feet below ground surface. In addition to the necessary soil and groundwater conditions, the ground acceleration must be high enough, and the duration of the shaking must be sufficient for liquefaction to occur. The Project is not located in a mapped liquefaction hazard zone (Humboldt County 2023f). The Project would be built to California Building Code requirements and would not increase risk of liquefaction or exposure to liquefaction. Comparatively, the existing corp yard property includes aging buildings that were built to older seismic standards within an area subject to liquefaction. Thus, Project would reduce the resiliency of the City's operational complex, including emergency response functions, to major seismic events that include liquefaction. The geotechnical report concluded the Project is in an area with low liquification potential (LACO 2023). No impact would result.

The Project Area is gently sloped under 5 percent, and well away from any significant slopes (Humboldt County 2023h). There is no evidence of recent active landslides and slope stability is considered stable. The geotechnical report noted the potential for conventional slope instability (i.e., non-liquification induced lateral spreading) to be negligible (LACO 2023). Thus, landslides within or near the Project are unlikely to occur, and the potential for landslide occurrence is not increased by the Project.

Per the geotechnical report, soils encountered at the Project Area typically consist of poorly graded soils, resulting in a low risk of expansive soils detrimentally affecting the proposed facility (LACO 2023). Mapping by the NRCS shows the development footprint of the Project to have a percentage of clay content of 7.8 percent with a Plasticity Index value of 4.8 (Appendix D – USGS Soil Report). These soils are considered to have a low potential for expansion. Thus, the project is not anticipated to encounter expansive soils. No impact would result.

b) Result in substantial soil erosion or the loss of topsoil? (Less Than Significant Impact)

Construction activities, including cut, fill, removal of vegetation, and operation of heavy machinery will disturb soil and, therefore, have the potential to cause erosion. Construction-phase erosion and sediment control provisions prescribed in the City of Eureka Policy NR-1.5, City of Eureka Code (EMC Chapter 54), and NCRWQCB regulations would be required as part of the Project. Erosion control measures would include but not be limited to silt fences, straw wattles, soil stabilization controls, site watering for controlling dust, and/or sediment detention basins. Section 1.9 requires development and implementation of a SWPPP in accordance with the State General Construction Permit. These mandatory ordinance requirements and permits are designed to maintain potential water quality impacts at a less-than-significant level during and post construction. Therefore, the potential soil erosion impact would be less than significant.

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? (No Impact)

The Project would utilize the City's municipal sewar system and does not propose the installation or modification of septic tanks or alternative wastewater disposal systems. Sewerage requirements are within the existing capacity of the City's sewer utility system, including the municipal wastewater treatment facility, as discussed in greater detail in Section 3.19. Therefore, construction and operation of the Project would have no impact.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less Than Significant with Mitigation)

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata are non-renewable, scarce, and are a sensitive resource afforded protection under environmental legislation in California. State law requires reasonable mitigation of adverse environmental impacts that result from development of public land and affect paleontological resources (PRC § 30244).

It is unlikely that Project construction will impact potentially significant paleontological resources because most of the Project occurs in relatively newly deposited alluvium. However, the possibility of encountering a paleontological resource during construction cannot be completely discounted; therefore, the impact related

to the potential disturbance or damage of previously undiscovered paleontological resources, if present, is considered potentially significant.

Mitigation

Implementation of Mitigation Measure GEO-1 would reduce the impact of construction activities on potentially unknown paleontological resources to a less than significant level by addressing discovery of unanticipated buried resources and preserving and/or recording those resources consistent with appropriate laws and requirements.

Mitigation Measure GEO-1: Inadvertent Discovery of Paleontological Resources

In the event that fossils are encountered during construction (i.e., bones, teeth, or unusually abundant and well-preserved invertebrates or plants), construction activities shall be diverted away from the discovery within 50 feet of the find, and a professional paleontologist shall be notified to document the discovery as needed, to evaluate the potential resource, and to assess the nature and importance of the find. Based on the scientific value or uniqueness of the find, the paleontologist may record the find and allow work to continue or recommend salvage and recovery of the material if it is determined that the find cannot be avoided. The paleontologist shall make recommendations for any necessary treatment that is consistent with currently accepted scientific practices. Any fossils collected from the area shall then be deposited in an accredited and permanent scientific institution where they shall be properly curated and preserved.

With incorporation of Mitigation Measure GEO-1, potential impacts would be reduced to a less than significant level through the production of a plan to address discovery of unanticipated paleontological resources.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (Less than Significant with Mitigation)

NCUAQMD has not adopted regulations regarding the evaluation of greenhouse gas (GHG) emissions in a CEQA document and has not established CEQA significance criteria to determine the significance of impacts with regard to GHGs. The NCUAQMD has stated that they would not comment adversely on the use of thresholds of significance from the BAAQMD for projects within Humboldt County. However, the BAAQMD has recently revised their adopted recommended CEQA thresholds of significance for GHG. The BAAQMD's Justification Report for the newly adopted GHG thresholds identifies the thresholds as specific for 'development projects' of commercial/residential development and other projects that include public agency projects. Emissions can be modeled with relative accuracy based upon the construction and operational elements of the Project. Per the Justification Report:

> *The Air District has developed these thresholds of significance based on typical residential and commercial [including governmental] land use projects and typical long-term communitywide planning documents such as general plans and similar long-range development plans. As such, these thresholds may not be appropriate for other types of projects that do not fit into the mold of a typical residential or commercial project or general plan update.*
>
> *Lead agencies should keep this point in mind when evaluating other types of projects. A lead agency does not necessarily need to use a threshold of significance if the analysis and justifications that were used to develop the threshold do not reflect the particular circumstances of the project under review. Accordingly, a lead agency should not use these thresholds if it is faced with a unique or unusual project for which the analyses supporting the thresholds as described in this report do not squarely apply. In such cases, the lead agency should develop an alternative approach that would be more appropriate for the particular project before it, considering all of the facts and circumstances of the project on a case-by-case basis.*

Additionally, the BAAQMD's Justification Report states:

> *There is no proposed construction-related climate impact threshold at this time. Greenhouse gas emissions from construction represent a very small portion of a project's lifetime GHG emissions. The proposed thresholds for land use projects are designed to address operational GHG emissions which represent the vast majority of project GHG emissions. (BAAQMD 2022)*

Therefore, this analysis applies two thresholds of significance in parallel. These two thresholds are:

– BAAQMD's 2022 Thresholds for Land Use Projects (Fair Share Design Elements)
– 1,100 metric tons of carbon dioxide (Bright-line Emissions): applied to total Project emissions (including annualized construction emissions.

The Sacramento Metropolitan Air Quality Management District's (SMAQMD's) and South Coast Air Quality Management District's (SCAQMD's) recommended GHG methodology and thresholds for construction and operational impacts were applied to inform the second threshold identified above. For Project construction, SMAQMD has a threshold of 1,100 metric tons of carbon dioxide ($MTCO_2e$) per year threshold of significance (SMAQMD 2021). SCAQMD recommends a threshold of 1,100 $MTCO_2e$ applied to construction and operation; SCAQMD recommends that construction emissions be amortized over the life of the project, defined as 30 years, and added to the operational emissions for comparison against the threshold of significance.

Fair Share Design Elements

The BAAQMD has identified design elements that, when incorporated into a project, would address the Project's fair-share of actions necessary to achieve California's long-term climate goal of carbon neutrality by 2045. As stated by the BAAQMD, if a project is designed and built to incorporate these design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change.

The Project is analyzed for consistency with the BAAQMD's thresholds for land use developments, identified as Minimum GHG Design Elements in Table 3.8-1. As shown in the table, the Project is largely consistent with the required minimum design elements after incorporation of Mitigation Measure AQ-1.

The primary objective of the Project is to provide emergency response. Thus, both natural gas and electric utilities are required to provide energy redundancy in the event of an emergency, including sustained and large-scale emergency events. The BAAQMD policies were conservatively applied to the Project given the absence of comparable adopted NCUAQMD policies, new development in the rural counties and municipalities within the NCUAMD's jurisdiction continue to commonly and lawfully include natural gas. Mitigation Measure GHG-1 has been incorporated into the Project to ensure climate friendly features are included in the Project's final design and operational practices to offset any potential impact associated with inconsistency with the GHG Design Element specific to the use of natural gas appliances and plumbing.

Table 3.8-1 Consistency Analysis between Project and BAAQMD GHG Design Elements

Minimum GHG Design Element Threshold	Project Review
Buildings	
The project will not include natural gas appliances or natural gas plumbing (in both residential and non-residential development).	**Consistent with Mitigation.** The Project is a non-residential facility and would include both natural gas plumbing and electric services. Given a primary objective of the Project is to serve as a base for operational emergency response, redundant utilities are necessary to ensure functionality in the event of an emergency.
The project will not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.	**Consistent with Mitigation.** As shown in Section 3.3, Impact a, the Project would not result in wasteful, inefficient, or unnecessary energy use after incorporation of Mitigation Measure AQ-1.
Transportation	

Minimum GHG Design Element Threshold	Project Review
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 (SB) 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: **a.** Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT	**Consistent**. There are no applicable locally adopted SB 743 VMT targets. As shown in Section 3.17, Impact b, the Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which provides the framework for analyzing a project's VMT-based impacts. Although that analysis does not specifically address the BAAQMD's recommended design element, the basis of the Transportation section's VMT threshold is based on GHG reduction thresholds (OPR 2019). The California Governor's Office of Planning and Research (OPR) Technical Advisory on Evaluating Transportation Impacts in CEQA identifies the GHG reduction goals that inform the VMT analysis and provides screening criteria that quickly identify when a project should be expected to cause a less than significant impact without conducting a detailed VMT study. As identified in Section 3.17 (Transportation) Impact b, the Project would generate fewer trips than the OPR's recommended screening threshold and would result in a less than significant impact regarding CEQA Guidelines 15064.3 subdivision (b). Because the Guidelines 15064.3 subdivision (b) VMT impact assessment is based on the State's GHG emission reduction goals, and the Project would generate a less than significant VMT impact, the Project would also generate a less than significant VMT impact as defined within this analysis section.
Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.	**Consistent.** As identified in the Project Description, the Project would be designed with EV charging stations and would be installed with oversized electrical infrastructure to allow for future expansion for electrified fleet .

Mitigation

Implementation of Mitigation Measure GHG-1 would offset the inclusion of natural gas by requiring climate friendly Project features and operational practices.

Mitigation Measure GHG-1: Offset Natural Gas Greenhouse Gas Impacts

The following climate friendly Project features and operational practices shall be implemented:

- The Project shall be designed consistent with the 2022 Building Energy Efficiency Standards
- The Project shall include rooftop solar panels
- The Project shall include passive and energy-efficient heating and cooling systems
- The Project shall include short-term and long-term bicycle parking
- The Project design will include facilities that support the maintenance of EVs and associated equipment, which may include indoor fleet parking with overnight charging stations; EV battery maintenance, safe-handling, and storage facilities; and similar features.
- The City shall continue to provide employees with bus passes
- The Project shall include showers
- Operationally, the use of electrical utilities shall be prioritized over the use of natural gas utilities whenever feasible during non-emergency use

Implementation of Mitigation Measure GHG-1 would reduce the potential impact of including natural gas to a less-than-significant level by requiring climate friendly Project features and operational practices.

Bright-Line Emissions

In order to assess the potential impact of construction-generated emissions, the construction GHG emissions are annualized over an assumed 30-year Project lifespan, added to operational emissions, and compared against a threshold of 1,100 $MTCO_2e$.

Project construction activities would result in exhaust emissions from on-road trucks, worker commute vehicles, and off-road heavy-duty equipment. Construction would require clearing, earthmoving, and delivery equipment, as used for similar projects. Construction and operational emissions were estimated using CalEEMod version 2022.1.1.14. Project construction was estimated to generate approximately 400 $MTCO_2e$ from all construction activities, or 13.3 $MTCO_2e$ per year when annualized over the assumed 30-year lifespan of the Project. Project operations were estimated to generate 556 $MTCO_2e$ per year.

Project emissions of 569.3 $MTCO_2e$ per year (annualized construction plus operations) would be less than the 1,100 $MTCO_2e$ threshold. Therefore, the Project's impact would be less than significant with the incorporation of Mitigation Measure AQ-1.

b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (No Impact)

The California Air Resource Board (CARB) 2022 Scoping Plan identifies a path to meet SB 32, as well as reducing anthropogenic GHG emissions to 85 percent below 1990 levels by 2045, and achieving carbon neutrality by 2045 or earlier, consistent with AB 1279. The 2022 Scoping Plan includes measures to move to a zero-emissions (decarbonized) transportation sector and phasing out the use of natural gas in residential and commercial buildings. The 2022 Scoping Plan would also reduce emissions of short-lived climate pollutants (SLCPs) and includes mechanical CO_2 removal and carbon capture and sequestration actions, as well as natural working lands management and nature-based strategies. The plan's measures are identified in Table 2-2 and Table 2-3 of the 2022 Scoping Plan. The measures are statewide and programmatic in nature. The 2022 Scoping Plan is largely advisory, as CARB does not directly regulate many of the sectors identified by the plan's measures.

The 2022 Scoping Plan states that local action by municipalities can support and amplify efforts to reduce GHGs. Local government decisions play a critical role in supporting state-level measures to contain the growth of GHG emissions associated with the transportation system and the built environment. However, given the Project's key objective is to provide an operational base for emergency response, sustained function in the event of a disaster is fundamental to the Project. As such, an all-electric facility is not appropriate and redundant natural gas utilities are required.

Local actions, provided in Appendix D of the 2022 Scoping Plan, are not required by statutory or gubernatorial direction, and are not binding, but contain guidance and information regarding actions that other jurisdictions may choose to take that complement the 2022 Scoping Plan measures. However, the 2022 Scoping Plan measures are broad policy and regulatory initiatives that would be implemented at the State level and do not relate to the construction and operation of individual projects, such as this Project.

The Project is analyzed for consistency with the 2022 Scoping Plan in Table 3.8-2. As shown in the table, the Project is consistent with the actions for the Scoping Plan scenario outlined in the 2022 Scoping Plan for AB 32 GHG inventory sectors. Therefore, the Project would not conflict with AB 1279 or the 2022 Scoping Plan, and no impact would result.

Table 3.8-2 Consistency Analysis between Project and 2022 Scoping Plan

Scoping Plan Sector and Action	Consistency/Applicability Determination
GHG Emissions Reductions Relative to the SB 32 Target – 40% below 1990 levels by 2030.	**Not Applicable** – This is a statewide measure that cannot be implemented by the Project or Lead Agency.
Smart Growth / Vehicle Miles Traveled (VMT) – VMT per capita reduced 25% below 2019 levels by 2030, and 30% below 2019 levels by 2045.	**Not Applicable** – This is a statewide measure and VMT reduction goal that is not applicable to all individual projects due to regional variations and growth projections. Regardless, the Project would not increase VMT as existing trips would be relocated and new trips would not be generated.
Light-duty Vehicle (LDV) Zero Emission Vehicles (ZEVs) – 100% of LDV sales are ZEV by 2035	**Consistent**. – This is a statewide measure that cannot be implemented by the Project or Lead Agency. However, the standards would be applicable to the light-duty vehicles that would access the Project Area during construction and operation. Additionally, the City will be transitioning to an electrified vehicle fleet and designing infrastructure to support the maintenance of EVs and equipment within the Project Area.
Truck ZEVs – 100% of medium-duty (MDV)/HDV sales are ZEV by 2040 (AB 74 University of California Institute of Transportation Studies [ITS] report).	**Consistent**. – This is a statewide measure that cannot be implemented by the Project or Lead Agency. However, the standards would be applicable to the trucks that would access the Project Area during operation.
Aviation – 20% of aviation fuel demand is met by electricity (batteries) or hydrogen (fuel cells) in 2045. – Sustainable aviation fuel meets most or the rest of the aviation fuel demand that has not already transitioned to hydrogen or batteries.	**Not Applicable** – This is a statewide measure that cannot be implemented by the Project or Lead Agency. The Project does not involve any aviation uses.
Ocean-going Vessels (OGV) – 2020 OGV At-Berth regulation fully implemented, with most OGVs utilizing shore power by 2027. – 25% of OGVs utilize hydrogen fuel cell electric technology by 2045.	**Not Applicable** – The Project does not involve ocean-going vessels.
Port Operations – 100% of cargo handling equipment is zero-emission by 2037. – 100% of drayage trucks are zero emission by 2035.	**Not Applicable** – The Project does not involve a port.
Freight and Passenger Rail – 100% of passenger and other locomotive sales are ZEV by 2030. – 100% of line haul locomotive sales are ZEV by 2035. – Line haul and passenger rail rely primarily on hydrogen fuel cell technology, and others primarily utilize electricity.	**Not Applicable** – The Project does not involve freight or passenger rail.

Scoping Plan Sector and Action	Consistency/Applicability Determination
Oil and Gas Extraction – Reduce oil and gas extraction operations in line with petroleum demand by 2045.	**Not Applicable** – The Project does not involve oil or gas extraction.
Petroleum Refining – CCS on majority of operations by 2030, beginning in 2028. Production reduced in line with petroleum demand.	**Not Applicable** – The Project does not involve petroleum refining.
Electricity Generation – Sector GHG target of 38 million metric tons of carbon dioxide equivalent (MMTCO2e) in 2030 and 30 MMTCO2e in 2035. – Retail sales load coverage. – 20 gigawatts (GW) of offshore wind by 2045. – Meet increased demand for electrification without new fossil gas-fired resources.	**Not Applicable** – This measure would apply to electricity providers. The Project is not an electricity provider.
New Residential and Commercial Buildings – All electric appliances beginning 2026 (residential) and 2029 (commercial), contributing to 6 million heat pumps installed statewide by 2030.	**Consistent** – The Project's facilities would be designed as 80% electric and constructed prior to 2029.
Existing Residential Buildings – 80% of appliance sales are electric by 2030 and 100% of appliance sales are electric by 2035. – Appliances are replaced at end of life such that by 2030 there are 3 million all-electric and electric-ready homes—and by 2035, 7 million homes—as well as contributing to 6 million heat pumps installed statewide by 2030.	**Not Applicable** – This is a measure for the State to modify its requirements for appliance sales to affect energy efficiency of existing residential buildings. The Project would not include appliance manufacturing or sales or continued use of existing residential buildings.
Existing Commercial Buildings – 80% of appliance sales are electric by 2030, and 100% of appliance sales are electric by 2045. – Appliances are replaced at end of life, contributing to 6 million heat pumps installed statewide by 2030.	**Not Applicable** – The Project would not include continued use of existing commercial buildings.
Food Products – 7.5% of energy demand electrified directly and/or indirectly by 2030; 75% by 2045.	**Not Applicable** – The Project does not include agricultural or mass food production.
Construction Equipment – 25% of energy demand electrified by 2030 and 75% electrified by 2045.	**Not Applicable** – Although the Project would involve the use of construction equipment, construction would occur between2025-2027, prior to the electrification goal. Additionally, the City would not own the construction fleet used.

Scoping Plan Sector and Action	Consistency/Applicability Determination
Chemicals and Allied Products; Pulp and Paper – Electrify 0% of boilers by 2030 and 100% of boilers by 2045. – Hydrogen for 25% of process heat by 2035 and 100% by 2045. – Electrify 100% of other energy demand by 2045.	**Not Applicable** – This measure would apply to the energy sources for pulp and paper manufacturers. The Project is not pulp or paper manufacture.
Stone, Clay, Glass, and Cement – CCS on 40% of operations by 2035 and on all facilities by 2045. – Process emissions reduced through alternative materials and CCS.	**Not Applicable** – This measure would apply to the direct GHG emissions from CCS industries. The Project is not a CCS industry.
Other Industrial Manufacturing – 0% energy demand electrified by 2030 and 50% by 2045.	**Not Applicable** – This measure would apply to the energy sources for industrial manufacturers. The Project is not an industrial manufacturer.
Combined Heat and Power – Facilities retire by 2040.	**Not Applicable** – This measure would apply to the existing combined heat and power energy facilities. The Project is not combined heat and power facility.
Agriculture Energy Use – 25% energy demand electrified by 2030 and 75% by 2045.	**Not Applicable** – The Project does not include agricultural production.
Low Carbon Fuels for Transportation – Biomass supply is used to produce conventional and advanced biofuels, as well as hydrogen.	**Not Applicable** – This measure would apply to the bulk fuel providers. The Project is not a fuel provider.
Low Carbon Fuels for Buildings and Industry In 2030s blended in pipeline. Renewable hydrogen blended in fossil gas pipeline at 7% energy (~20% by volume), ramping up between 2030 and 2040. In 2030s, dedicated hydrogen pipelines constructed to serve certain industrial clusters.	**Not Applicable** – This measure would apply to natural gas utilities and energy providers. The Project is not an energy provider.
Non-combustion Methane Emissions – Increase landfill and dairy digester methane capture. – Some alternative manure management deployed for smaller dairies. – Moderate adoption of enteric strategies by 2030. – Divert 75% of organic waste from landfills by 2025. – Oil and gas fugitive methane emissions reduced 50% by 2030 and further reductions as infrastructure components retire in line with reduced fossil gas demand.	**Consistent** – The Project does not include a landfill or dairy. The Project would reduce construction waste with implementation of State mandated recycling and reuse mandates.

Scoping Plan Sector and Action	Consistency/Applicability Determination
High GWP Potential Emissions – Low GWP refrigerants introduced as building electrification increases, mitigating HFC emissions.	**Consistent** – The Project would comply with applicable CARB refrigerant regulations.

Source of Scoping Plan Reduction Measures: CARB 2022

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?			✓	

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

Construction of the Project would include the transport and use of common hazardous materials inherent to the construction process, including petroleum products such as fuel and lubricants for construction equipment and vehicles, paints, concrete curing compounds, and solvents for construction of Project improvements. These materials are commonly used during construction, are not acutely hazardous, and would be used in relatively small quantities.

Hazardous materials storage, handling, and transportation must comply with an interconnected matrix of local, State, and Federal laws. Hazardous materials used during construction of the Project would be subject to applicable regulations, including California Health and Safety Code Section 25531, Division 20, Chapter 6.5, and other standards enforced by the various departments and boards under the California

Environmental Protection Agency (Cal/EPA). The Project would be subject to Cal/EPA hazardous materials regulations consolidated under the State's Unified Program enforced by the Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (SWRCB), NCRWQCB, NCUAQMD, and the Department of Resources Recycling and Recovery (CalRecycle). The Cal/EPA administers the Unified Program via local Certified Unified Program Agencies (CUPAs). The CUPA for Humboldt County is the Humboldt County Division of Environmental Health (HCDEH). The HCDEH Hazardous Materials Unit has jurisdiction over the Project area and is tasked with local CUPA inspections and compliance. Project activities involving the transport, use, storage, and disposal of hazardous materials would be in accordance with established rules and regulations.

Project construction specifications would require the management of hazardous materials to comply with applicable laws, rules, and regulations. During Project construction, the contractor would be required to contain hazardous materials and avoid exposure to workers, the public, and surrounding environment during construction. An appropriate facility would be utilized for the legal disposal of any hazardous materials generated.

The Project would be required to implement stormwater management requirements during construction in accordance with the SWRCB General Construction Storm Water Permit (Section 1.9). Stormwater management requirements for addressing materials management would be required, including proper material delivery and storage, spill prevention and control, and management of concrete and other wastes, as described in Section 3.10 (Hydrology and Water Quality).

The established regulatory framework, BMPs, and requisite construction protocols provide appropriate risk mitigation and hazard protections; thus, the Project would not create a significant hazard to the public or environment from hazardous materials. Because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations addressing the transport, storage, use, and disposal of hazardous materials, the potential to create a significant hazard to the public or the environment during Project construction would be less than significant.

Following construction, operation of the Project would require storage, handling, transportation, and disposal of hazardous materials related to City equipment and vehicle repair and operations. This would comply with the same local, State, and Federal laws mentioned above.

Worker exposure to hazardous materials is regulated by the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) and requires worker safety protections. Cal/OSHA enforces hazard communication regulations that require worker training and hazard information (signage/postings) compliance. In addition, hazard communication compliance includes procedures for identifying and labeling hazardous substances, communicating information related to hazardous substances storage, handling, and transportation and preparation of health and safety plans to protect employees.

The operational risk posed by maintenance and repair of the Project specific to hazardous materials, including use of the emergency generator, is low. The potential to create a significant hazard to the public or the environment during Project operation would be less than significant.

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? (Less Than Significant Impact)

The Project would utilize heavy machinery to perform some construction-related tasks including grading, drilling, excavation, and transportation of materials. There is always the possibility when equipment is operating that an accident could occur, and fuel or other contaminants could be released onto the soil. Equipment on site would be required to have emergency spill cleanup kits immediately accessible in the case of any fuel or oil spills. If construction equipment must be washed, it would be washed off-site.

During Project operation, use of machinery would occur for City equipment maintenance and repair. This maintenance and repair would require the storage and use of fuels and lubricants needed for vehicle and equipment repair, such as motor oils, paints, cleaners, and other solvents. The fuels and lubricants would be subject to Cal/OSHA and DTSC regulations to ensure safe and effective use and storage. Similar to construction, emergency spill cleanup kits would be required to be immediately accessible in the case of any fuel or oil spills. Additionally, in the event of a City vehicle needing to be washed, vehicles would be washed only within the closed loop wash stations. The potential impact would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No Impact)

There are no existing or proposed schools within one-quarter mile of the Project. The closest school, Alice Birney Elementary School, is located approximately 0.70 miles northeast of the Project. Construction activities are assumed to include the use of hazardous materials such as fuels, lubricants, degreasers, paints, and solvents. These materials are commonly used during construction, are not acutely hazardous, and would be used in small quantities. Numerous laws and regulations ensure the safe transportation, use, storage, and disposal of hazardous materials (see Impact discussion in Section 3.9 (a) and (b) above). Although construction activities could result in the inadvertent release of small quantities of hazardous substances, a spill or release at a construction area is not expected to endanger individuals at nearby schools given the nature of the materials, the small quantities that would be used, and the distance of the schools from the Project Area. Therefore, because the City and its contractors would be required to comply with existing and future hazardous materials laws and regulations covering the transport, use, and disposal of hazardous materials, and because of the nature and quantity of the hazardous materials to be potentially used by the Project, and because the Alice Birney Elementary School is beyond one-quarter mile away from the Project Area, there would be no impact related to the use of hazardous materials and school during construction.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (No Impact)

To evaluate the Project Area with respect to the presence and location of existing and/or historical soil and groundwater contamination, GHD completed a regulatory database review of available online government records. The regulatory database review was completed to identify areas of potentially impacted soil and/or groundwater within and near the Project Area that could potentially pose an exposure risk to humans and/or the environment.

The Project Area is not located on, or within one mile of, a site listed in the DTSC EnviroStor database (DTSC 2023). The Project is also not located on a cleanup site as mapped in the GeoTracker database. However, there are 26 closed sites within one mile of the Project, the closest being a former Leaking Underground Storage Tank (LUST) approximately 700 feet east (Ocean View Cemetery, Corporation Yard (T0602300355)) and one active site located approximately 0.58-mile northwest (Chevron USA-Marine Terminal (T0602300398) (SWRCB 2023). Off-site construction activities are not planned, and impacts related to the off-site closed cleanup sites, or the active Chevron USA-Marine Terminal, would not occur. No impact would result.

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? (Less Than Significant Impact)

The nearest airport is the Samoa Field Airport (O33), which is located approximately 1.5 miles west of the Project Area. The O33 is covered by the 2021 Airport Land Use Compatibility Plan (ALUCP) prepared by the Humboldt County Airport Land Use Commission (ALUC). The Project Area is not located within any designated airport compatibility zone (ESA 2021). The Project Area is within the Airport Influence Area (AIA), which represent the geographical extent of the ALUC's authority and define areas where noise, safety, airspace protection, and overflight notification policies and compatibility criteria are applied to certain proposed future land use policy actions. Specifically, the Project is within Review Area 2, which represents the area in which airspace protection and overflight notification policies are applicable, though the Project Area is not located within the takeoff or landing approaches of this airport. Per ALUCP Chapter 3.4 Airspace Protection Compatibility Policies, the ALUC criteria for determining the acceptability of a land use action with respect to height shall be based upon: the standards set forth in 14 CFR Part 77; the TERPS; Humboldt County Code (Tit. III, Div. 3, Ch.3, Airport Approach Zone Building Height Regulations), and applicable airport design standards published by the FAA (ESA 2021). Thus, consultation with the ALUC and a permit from the Humboldt County Department of Aviation would be required. However, no Project elements would impact the operational use of the O33 airport. Therefore, a less than significant impact would result.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (No Impact)

The City does not have its own Emergency Operations Plan (EOP); however, the Project Area is covered under the Humboldt County EOP. The Humboldt County EOP identifies the emergency response and evacuation policies and procedures for hazards related to earthquake, tsunami, extreme weather, flooding/flash flooding, landslides, transportation accidents, hazardous materials, interface wildlife fire, energy shortage, offshore toxic spill, civic disturbance, terrorist activities, and national security (Humboldt County 2015).

The Humboldt County EOP establishes a structure for Humboldt County Operation Area agencies to respond to large-scale emergencies requiring multiagency participation or activation of the Humboldt County Emergency Operations Center (EOC) (Humboldt County 2015). Hazard mitigation and risk assessment strategies for Humboldt County Operation Area are formalized in the Humboldt County Operational Area Hazard Mitigation Plan (HMP). Specifically, the Project is included as Action EUR7

Relocate Corporation Yard improvements to reduce risk of structural failure and increase efficiency and operations during natural disaster.

The Project would not impair implementation or physically interfere with the established Humboldt County EOP, or Humboldt County HMP, and would be an Action within the HMP. Once constructed, the Project would serve as the operations center for the City during emergencies and would enhance the City's capabilities for response over the current corp yard due to the current yard being located within the tsunami zone and the potential for future flooding related to sea level rise. As this would increase emergency response reliability, no impact would occur.

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

Wildland fire is addressed in Section 3.20. As noted in Section 3.20, the Project would not expose people or structures to a significant risk from wildland fires, thus a less than significant impact would result. Please see Section 3.20 for further discussion of the Project as it relates to wildland fire risks.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		✓		
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			✓	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. Result in substantial erosion or siltation on- or off-site?			✓	
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or 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?			✓	
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?				✓

The Project is located in the Eureka Plain watershed, which ultimately drains into Humboldt Bay. No watercourses or wetlands are located within the Project Area.

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less Than Significant with Mitigation)

There are no wetlands occurring within the Project Area (Eureka 2023e). Therefore, the Project is not required to obtain Clean Water Act permits from the NCRWQCB and/or the USACE.

Construction activities, such as site clearing, grading, excavation, material stockpiling, placement of aggregate base, and other related construction activities, could leave soils exposed to rain or surface water runoff that may carry soil contaminants (e.g., nutrients or other pollutants) into waterways downslope of the site, degrade water quality, and potentially violate water quality standards for specific chemicals, dissolved

oxygen, suspended sediment, or nutrients to surface waters. The greatest potential for Project construction impacts to water quality would result from sediment mobilization. This impact is considered to be potentially significant.

The proposed Project is anticipated to disturb over one acre of land; therefore, compliance with State Water Board Order No. 2009-0009 would be required, which would regulate stormwater runoff from Project construction activities. Project operations would obtain coverage under SWRCB Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. In compliance with the National Pollutant Discharge Elimination System requirements, a Notice of Intent would be prepared and submitted to the NCRWQCB prior to undertaking construction, providing notification and intent to comply with the State of California Construction General Permit (CGP). In addition, a SWPPP would be prepared for pollution prevention and control prior to initiating site construction activities.

The Construction SWPPP would be written by a Qualified SWPPP Developer (QSD) and would identify and specify the use of BMPs for erosion control, sediment control, off-site tracking control, wind erosion control, non-stormwater management control, and waste management and materials pollution control. A sampling and monitoring program would be included in the Construction SWPPP that meets the requirements of the CGP to ensure the BMPs are effective. A Qualified SWPPP Practitioner (QSP) would oversee implementation of the Plan, including visual inspections, sampling and analysis, and overall compliance with the SWPPP and CGP.

Implementation of BMPs summarized in Section 1.9 of this IS/MND would reduce potential water quality impacts during Project construction activities to a less-than-significant level by requiring measures to minimize erosion, sediment, and pollutant contribution to surface waters.

Following construction, operation and maintenance of the Project would not result in a new point discharge. Stormwater runoff would be detained and infiltrated within stormwater features onsite. Wastewater from vehicle wash stations would be contained within a closed loop system, retaining it onsite. Therefore, less than significant operational impact would result.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin? (Less Than Significant Impact)

The Project is located in the Eureka Plain Groundwater Basin (1-009), which has a Sustainable Groundwater Management Act (SGMA) Basin Priority of Very Low and is not listed as Critically Overdrafted (DWR 2023). This basin does not have a groundwater management plan, groundwater ordinances, or basin adjudications. Contractor-supplied water would be used during construction for dust suppression on work areas. Use of groundwater is not anticipated for construction of the Project. Similarly, the Project would not decrease groundwater supplies or interfere with groundwater management.

The geotechnical investigation identified groundwater at depths between 14 and 21 feet below ground surface (bgs) and noted a potential to encounter groundwater at depths of 6 feet bgs seasonally (LACO 2023). During construction, isolated and short-duration groundwater dewatering may occur as needed and would be small in scale and limited to shallow groundwater only. Construction-related impact on groundwater levels would not result. Following construction, the Project would be connected to municipal water, and would not utilize groundwater or result in an increase in population or employment that would indirectly increase groundwater demand. The Project would increase impervious surfaces by approximately 186,000 square feet (4.2 acres) of paved areas. Stormwater runoff associated with this would be directed

towards LID facilities and subsurface infiltration piping to capture and infiltrate the stormwater runoff onsite, recharging the groundwater basin. Therefore, the Project would not create a deficit in aquifer volume or a lowering of water levels. The Project is not expected to result in any substantial change in the use or recharge of groundwater. A less than significant construction and operational impact to groundwater resources would result.

c.i) 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 result in substantial erosion or siltation on- or off-site? (Less Than Significant Impact)

The Project is gently sloped and drains west towards US 101 and City stormwater infrastructure. Project construction would not alter existing topography in a manner that would result in a substantial change of the existing drainage pattern or contribute to substantial erosion or siltation on- or off-site. The Project would result in an impervious paved area of approximately 186,000 square feet (4.2 acres).

Stormwater would be contained and treated on-site. Any stormwater not infiltrated and treated onsite would be discharged to the City's stormwater system. Stormwater management design would incorporate LID facilities and subsurface infiltration piping to capture and infiltrate the stormwater runoff onsite. This would also serve to buffer from potential water quality impacts. Fine sediments would also be captured and settled out into the vegetated swales.

Erosion and sedimentation measures would be implemented during construction to avoid impacts to water quality, including those related to siltation (see impact "a" above). The Project would be required to adhere to measures and conditions to be included in a SWPPP to prevent erosion-related impacts during construction (see Section 1.9). Substantial on- or off-site erosion and siltation would not result, and the potential construction-related impact from erosion and siltation would be less than significant.

c.ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? (Less Than Significant Impact)

The Project would have a net increase of approximately 4.2 acres of impervious surface and would alter existing drainage patterns onsite through the construction of parking and yard areas, and new operations, shop and warehouse buildings. Any stormwater not infiltrated and treated onsite would be discharged to the City's stormwater system. Off-site drainage patterns would not be altered. The Project is not located within a FEMA 100-year or 500-year flood zone (City of Eureka 2023c).

The overall stormwater management design for the site would be developed using an LID approach to mimic the site's predevelopment hydrology by using techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall with non-structural controls and conservation design measures as much as practicable. The stormwater treatment design would also incorporate vegetated swales and other LID facilities, and subsurface infiltration piping to capture and infiltrate stormwater runoff consistent with guidance within the Humboldt Low Impact Development Stormwater Manual (NCSC 2021). The excess stormwater generated from the impervious surfaces of the Project not infiltrated onsite would generally flow in a western direction via drainage inlets and piping, and surface discharge to the existing nearby City drainage system located along US 101. The remaining majority of the site's stormwater would be collected and treated in a combination of vegetated swales and other bioretention facilities that would run along the

southern boundaries of the Project footprint. Excavation depths to install drainage facilities may vary but would typically be limited to approximately six feet below existing grade.

Aside from the increased impervious surface area, the Project does not include elements that would increase surface runoff or necessitate significant design features to accommodate flooding. New vegetated swales, subsurface infiltration piping, and other LID facilities would be incorporated into the Project design to support stormwater infiltration. Additionally, in compliance with Section 1.9, the Project would develop a SWPPP to be approved by the NCRWQCB, and the Project would be designed to meet NCRWQCB and MS4 permit storm water requirements. The Project would not cause on- or off-site flooding. The potential impact would be less than significant.

c.iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less Than Significant)

As discussed above in Section 3.10 (c)(ii), the Project would include new stormwater drainage facilities in a combination of new vegetated swales, bioretention facilities, subsurface infiltration piping, and other LID facilities. These facilities would treat runoff on-site with any water not infiltrated onsite discharging to the City's stormwater system, consistent with MS4 permit standards. Construction projects disturbing one or more acres of land are regulated by the Construction General Permit (CGP). The City reviews project Stormwater Pollution Prevention Plans for compliance with the CGP.

Additionally, in compliance with the BMPs outlined in Section 1.9 of this IS/MND, the Project would develop a SWPPP to be approved by the NCRWQCB, and the Project would be designed to meet MS4 and NCRWQCB storm water requirements. The Project would not exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. The impact would be less than significant.

c.iv) Impede or redirect flood flows? (No Impact)

The Project is not located within a FEMA 100-year or 500-year flood zone (City of Eureka 2023c). There is not a watercourse on or near the Project Area that could contribute to flooding. Under existing conditions, the Project Area does not experience flood flows. All surface waters would be limited to stormwater flow during precipitation events and would be attenuated by the Project's planned LID stormwater design features any water not infiltrated onsite discharging to the City's stormwater system. No impact would result.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation? (No Impact)

The Project is not located in a FEMA 100-year or 500-year flood zone (City of Eureka 2023c). Additionally, the Project is not located within a tsunami zone or near a larger isolated body of water that may be affected by a seiche (Humboldt County 2023g). Thus, there would be no potential for a flood, tsunami, or seiche-related release of pollutants during construction or operation. No impact would result.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? (No Impact)

The relevant water quality control plan is the NCRWQCB's Basin Plan, which establishes thresholds for key water resource protection objectives for both surface waters and groundwater. The Eureka Plain Basin does not have a groundwater management plan, groundwater ordinances, or basin adjudications. The Project does not involve the use of groundwater resources and would not impact the quantity or quality of groundwater availability in the Eureka Plain Basin. All stormwater would be contained and treated on-site, with any water not infiltrated onsite discharging to the City's stormwater system.

The Project would be required to obtain coverage under SWRCB's CGP, which would include development and implementation of a SWPPP. Adherence to these regulatory requirements and associated requisite monitoring would ensure a conflict with the Basin Plan does not occur. No impact would result.

3.11 Land Use and Planning

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

This section evaluates the potential impacts related to land use as it applies to construction and operation of the Project. The Project is located within the City of Eureka and, therefore, is subject to the City of Eureka 2040 General Plan. Pursuant to EMC 155.104.060.G, because the Project is a public project of the City of Eureka, compliance with the Zoning Code (EMC Chapter 155) is not required.

a) Physically divide an established community? (No Impact)

The proposed Project would not divide an existing neighborhood or community. The Project Area is located on undeveloped land between Weiler Road and Oceanview Cemetery Road. The Project Area is currently owned by the cemetery and no public access through the Project Area currently exists. Operationally, the Project would not restrict local roadways or alter any existing roadways or accessways from one side of the Project Area to the other. No impact would result.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? (No Impact)

As defined by the 2040 City of Eureka General Plan, the Project Area has a land use designation of Public/Quasi-Public (PQP) (City of Eureka 2023b). PQP lands are intended for public and private institutional uses, government facilities and services, schools, courts, cemeteries, fairgrounds, airports, marinas and wharves, and major utility facilities, as well as parks, golf courses, and other public recreational facilities. The Project would be the creation of a new City Operations Complex, a government facility, consistent with the intent of the existing land use designation.

The Project would meet and/or support the following City of Eureka General Plan goals and policies to regulate hydrology and water quality during construction and operation of the Project:

– U-3.9: Low Impact Development. Encourage and incentivize opportunities to incorporate Low Impact Development in both new construction and remodeling/renovation of existing structures and sites.
– U-3.10: Land Allocation and Mitigation for New Project Runoff. Require new projects to allocate land as necessary for the purpose of detaining post-project flows and consider establishing a mitigation fund to fund off site stormwater detention areas.
– U-3.11: Stormwater Quality. Require new development and redevelopment to minimize stormwater runoff and pollutants entering drainage facilities and drainage courses by incorporating Low Impact

Development (LID) measures and appropriate Best Management Practices (BMPs) consistent with the City's NPDES permit and the North Coast Regional Quality Control Board regulations.

- NR-1.5: Require the implementation of BMPs to minimize erosion, sedimentation, and water quality degradation resulting from the construction of new impervious surfaces.
- NR-1.6: Regulate construction and operational activities to incorporate stormwater protection measures and BMPs in accordance with the City's National Pollution Discharge Elimination System to minimize adverse effects of wastewater and stormwater discharges.
- NR-2.7: Encourage preservation of existing healthy trees and native vegetation through site planning and maintenance, promote the use of low-maintenance, low water-use native plants and trees, prohibit the use of highly invasive plants, and discourage the use of invasive species in landscaping.
- NR-4.2: Require new lighting be designed and configured to minimize light pollution, glare, and spillage.
- HS-4.6: Ensure the continued function of critical facilities such as hospitals, fire stations, police stations, and emergency command centers following a major disaster to facilitate post-disaster recovery. Locate such facilities outside of identified hazard areas.

Per Policy U-3.9 and U-3.10, the Project would incorporate LID features as discussed in Section 3.10.

Per Policy NR-1.5 and NR-1.6, the Project would incorporate specific erosion control measures, both temporarily during construction as required within the SWPPP and permanently during operation as incorporated within the swale features, as discussed in Section 1.9, Section 3.7, and Section 3.10.

The Project would also support Policy NR-1.3,Natural Open Space Areas, as a 35-foot buffer of grasses and landscaping would be retained along the western edge of the Project Area. Additionally, the Project would incorporate swale features to retain and treat stormwater, providing groundwater recharge.

Policy NR-2.7 is implemented through the City's tree removal regulations in EMC 155.304.140, which require a Tree Removal Permit for the removal of listed protected tree species with a minimum 24-inch diameter, unless the trees are located within 15 feet of the footprint of a proposed structure or within the boundary of the associated access road, in which case removal is allowed by-right. Monterey Pine trees are not a listed protected tree species, and, pursuant to EMC 155.104.060.G, the Zoning Code does not apply to public projects of the City of Eureka.

Policy NR-4.2 is implemented through EMC 155.308.050, which establishes standards for outdoor lighting to minimize light pollution, maintain enjoyment of the night sky and reduce light impacts on adjacent properties. Site lighting would be installed for safety and visibility near buildings, along walkways, and within parking areas. The lighting would be downcast and shielded or recessed and would be dark-sky compliant.

The goal of the Project is to relocate the existing corp yard that is within a tsunami zone, complying with Policy HS-4.6.

As defined within the City zoning code, the Project Area has been zoned as Public Facilities (PF) (City of Eureka 2023a). Per Section 155.216.010.B.1, the PF Zoning District provides locations for schools, governmental offices and facilities, community assembly uses, courthouses, social services, cemeteries, fairgrounds, airports, marinas and wharves, utility facilities, and other similar public and civic uses. Within the PF zoning, per section 155.216.020(A), a public agency corp yard is explicitly stated as a permitted use. Therefore, the Project is consistent with existing zoning.

Additionally, the Project does not conflict with City municipal code regulations, including but not limited to height of building (Section 155.216.030), and parking (Section 155.324.030). Therefore, the Project would not conflict with an applicable land use plan, policy, or regulation. No impact would result.

3.12 Mineral Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

This section evaluates the potential impacts related to mineral resources associated with the Project.

a, b) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No Impact)

The Project would require minor use of rock, gravel, sand, and other similar materials for construction, but is not expected to have any significant impact on locally available minerals or mineral resources valuable to the region or the State. Additionally, the Project Area is not designated by the City of Eureka General Plan, or any other local land use plans, as having locally important mineral resources within the Project Area, nor is it mapped as a SMARA parcel (Humboldt County 2017, Eureka 2018). No impact would occur.

3.13 Noise

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) 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?			✓	
b) Result in generation of excessive groundborne vibration or 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?				✓

Current noise conditions in the Project Area consist of road noise associated with vehicles on US 101, as well as residential noise from minor streets. Noise is also generated by existing commercial developments to the south and west.

Sensitive noise receptors adjacent to and near the Project include residential housing, with the nearest residence located on Weiler Road approximately 300 feet to the southeast. The Alice Birney Elementary School is located approximately 0.70 miles northeast of the Project.

a) 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? (Less Than Significant Impact)

Construction

Construction of the proposed Project would temporarily increase noise in the immediate vicinity of the Project Area. The temporary noise increases would result from the use of construction equipment for the Project, as well as from increased traffic as construction workers commute to and from the Project Area. Construction activities would be consistent with City Policy N-1.13 and limited to daytime work hours between 7:00 a.m. to 10:00 p.m., Monday through Friday, though occasional work may occur on Saturdays. Construction noise levels would vary based on the type of equipment, as summarized in Table 3.13-1 below.

Table 3.13-1 Construction Equipment Reference Noise Levels as Measured at 50'

Equipment	Noise Level (dB[1])	Equipment	Noise Level (dB)
Drill Rig Truck	84	Jackhammer	85
Horizontal Boring Hydraulic Jack	80	Small Generator	70
Front End Loader or Backhoe	80	Roller	85
Excavator	85	Dump Truck	84
Pneumatic Tools	85	Flat Bed Truck	84
Large Generator	82	Paver	85

Source: Federal Highway Administration 2006

Sound from a point source is known to attenuate at a rate of -6 dB for each doubling of the distance to the receptor. For example, a noise Equivalent Continuous Level (Leq) of 84 dB as measured at 50 feet from the noise source would attenuate to 78 dB Leq at 100 feet from the source and to 72 dB Leq at 200 feet from the source to the receptor. Based on the reference noise levels in Table 3.13-1, the noise levels generated by construction equipment at the Project may reach a maximum of approximately 85 dB Leq at 50 feet during site excavation and construction.

Per Eureka General Plan Table N-4, noise level performance standards for stationary sources during daytime hours are 55 dB (hourly) and 70 dB (maximum). The closest sensitive receptor is approximately 300 feet away, and the noise attenuation of the loudest anticipated equipment, the excavator, paver, and rollers (85dB) would be approximately 69dB, which is less than the 70dB. However, this estimation does not assume any reduction in noise from shielding from buildings or vegetation. As the construction phase would also be temporary and construction activities would be intermittent and limited to between 7:00 a.m. and 10:00 p.m., potential noise impacts generated during the construction phase would be less than significant. Thus, construction of the Project with not conflict with a City noise standard, and a less than significant impact would occur.

Operation

The City of Eureka General Plan includes Figure N-2, which specifies Noise Compatibility standards, Table N-3, which specifies Maximum Allowable Interior Noise Exposure, and Table N-4, which specifies Noise Level Performance Standards for Stationary Noise Sources. Development may occur in areas identified as "normally unacceptable" if mitigation measures can reduce indoor noise levels to "Maximum Allowable Interior Noise Exposure" and outdoor noise levels to the maximum "normally acceptable" value for the given land use category. By calculating the attenuation with a distance of 300 feet, the maximum exterior noise standards, as measured at the property line, would be 70 dB, and the maximum interior noise exposure to the nearest residences located approximately 300 feet away would be 45 dBA. The average maximum between daytime hours (7:00 am – 10:00 pm) is 55dBA, with a maximum level of 70dBA. For nighttime hours (10:00 pm – 7:00 am) the average maximum is 45dBA, and the maximum level is 65dBA. Thus, the estimated noise exposure does not conflict with applicable noise standards in the General Plan.

Noise creation from the Project would include the use of machinery for City fleet repair and maintenance, City vehicle engine noise, and the maintenance and emergency use of the backup generator. The generator would be used in the event of a power outage and also weekly for a period of one to two hours for maintenance. Fleet repair and maintenance would be done within the shop building, and the generator

[1] "dB" is a weighted decibel measurement for assessing hearing risk and, therefore, is used by most regulatory compliance.

would have an enclosure, minimizing noise impacts on adjacent properties. The closest sensitive receptor is approximately 300 feet away, and the noise attenuation of the loudest anticipated equipment, the generators, pneumatic tools, and trucks (82-85dB) would be a maximum of approximately 69dB, which is below the 70dB limit. The dB referenced in Table 3.13-1 is the instantaneous maximum recorded. The operational use of the Project would not constantly generate peak noise levels. Additionally, this estimation does not assume any reduction in noise from shielding from buildings or vegetation. Once the Project is constructed, it would have operational hours largely within normal business hours, noting field staff commonly arrive before 8:00 a.m. to obtain a fleet vehicle and necessary equipment for off-site use. Nighttime use of the facility would generally be limited, occurring primarily during emergency events.

Therefore, Project operation would not result in noise levels exceeding the City's noise standards for the adjacent residential land uses and would not generate a substantial temporary, or permanent, increase in ambient noise levels in the vicinity of the Project in excess of standards. A less than significant impact would result.

b) Result in generation of excessive groundborne vibration or noise levels? (Less Than Significant Impact)

The City has not established groundborne vibration limits. However, Caltrans recommends a vibration limit of 0.5 inches/second peak particle velocity (PPV) for buildings structurally sound and designed to modern engineering standards, 0.3 inches/second 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 inches/second PPV for ancient buildings or buildings that are documented to be structurally weakened. No known buildings that are documented to be structurally weakened or ancient adjoin the Project Area. Therefore, the 0.5 inches/second PPV limit would apply when considering the potential for groundborne vibration levels to result in a significant vibration impact.

Project construction activities, such as drilling, the use of jackhammers, and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.) may generate substantial vibration in the immediate vicinity. The Project may also utilize a vibratory roller, large bulldozer, and jackhammer. Table 3.13-2 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet (Caltrans 2019). High-power or vibratory tools and rolling stock equipment (e.g., tracked vehicles, compactors), may generate substantial vibration in the immediate vicinity. Vibratory rollers typically generate vibration levels of 0.210 inches/second PPV at a distance of 25 feet. Vibration levels are highest close to the source and attenuate with increasing distance. Vibration levels would vary depending on soil conditions, construction methods, and equipment used.

Table 3.13-2 Typical Vibration Levels for Construction Equipment Used During Project Construction (Caltrans 2019)

Equipment	Reference PPV at 25 ft (in./sec)
Vibratory Roller	0.210
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003
Crack-and-Seat Operations (specific pavement rehabilitation process)	2.4

Project-related activities would not involve the use of explosives or other intensive construction techniques that could generate significant groundborne vibration or noise.

The proposed Project would comply with City of Eureka General Plan Policy N-1.13, which requires limiting construction activity to specified daytime hours and regulating vibration sources. Policy N-1.14 would not apply, as the Project is not located near a highway, rail line, historic buildings, and/or archaeological sites. Thus, a vibratory assessment under Policy N-.14 is not required.

Vibration impacts to residences are anticipated to be minor and below the Caltrans advisory of 0.5 inches/second PPV for buildings that are found to be structurally sound but where structural damage is a major concern, as the closest residences are located approximately 300 feet away from the Project Area. Minor vibration adjacent to mechanized equipment and road treatments during construction work would be generated only on a short-term basis. Therefore, groundborne vibration and noise would have a less than significant impact.

Following construction, operation of the Project would not result in groundborne vibration or groundborne noise. Project operation would not generate vibration, except in instances where larger repairs to the road might be required. These conditions would be short-term and temporary (taking from one to several weeks to complete depending on the extent of damage or other circumstances); therefore, no operational impact would result.

c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project Area to excessive noise levels? (No Impact)

The nearest airport is the Samoa Field Airport (O33), which is located approximately 1.5 miles west of the Project Area. The O33 is covered by the 2021 ALUCP prepared for the Humboldt County ALUC by ESA. The Project is not located within the ALUCP Noise Contours for O33 (ESA 2021). Therefore, Project construction would not exacerbate existing airport noise. No impact would result.

3.14 Population and Housing

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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?				✓

This section evaluates the Project's potential effect on population and housing. The 2020 population for the City was estimated to be 26,512 people (US Census 2020).

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)? (Less Than Significant Impact)

The Project would not be growth inducing and would not propose or result in new homes or businesses directly or indirectly. New roads or other off-site infrastructure would not be constructed. Existing employees from the previous corp yard and from other City facilities, including City Hall, would be transferred to the Project once operational. No impact would result.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No Impact)

The Project would be located in areas zoned for Public Facilities. Per zoning regulations, no homes could be located within the Project Area. Additionally, no existing housing would be demolished or lost as a result of the Project; thus, there would be no need for replacement housing. The Project is not growth inducing and would not generate a demand for additional, out-of-area employment that would result in additional housing demand. No impact would result.

3.15 Public Services

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

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 public services? (No Impact)

As discussed in Section 3.14 (Population and Housing), implementation of the Project would not impact planned population growth. The Project Area currently receives fire protection services from Humboldt Bay Fire and police services through the City of Eureka Police Department, both of which coordinate closely with the Public Works Department. The Project supports Humboldt Bay Fire, the City Police Department, and other City departments by supporting infrastructure and critical services in the event of an emergency. The Project would not result in the need to increase staffing, create new hazardous conditions, or result in a modification to the road system that would restrict access for emergency services. The Project would not result in an increase in student population and, therefore, no new or expanded schools would be required. The Project would not impact any park and would not necessitate any related new, or altered, public service facilities. The Project involves relocation as opposed to expansion and would relocate the existing corp yard that is currently within a tsunami zone. Overall, no impact would result.

3.16 Recreation

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

There are no recreational facilities on or adjacent to the Project Area. Nearby recreational facilities in the City include Highland Park, Palco Marsh, Humboldt Bay, and the Eureka Golf Course.

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (No Impact)

The Project proposes no new recreational amenities within the City. The Project would not result in a significant increase to City population that may utilize nearby recreation, thus the Operations Complex would not increase use of Highland Park, Palco Marsh, Humboldt Bay, Eureka Golf Course, or other recreational facilities or parks. No impact would result.

b) Include or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment? (No Impact)

The construction or expansion of recreational facilities would not be required by the Project or included in the Project. There would be no impact.

3.17 Transportation

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

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

The Project would include access via Oceanview Cemetery Road and Weiler Road. Oceanview Cemetery Road is a private road that is accessed by US 101 and would be the primary access point for the Project. Weiler Road, a minor local road, would be used as a secondary access. Weiler Road ends at Sunset Street, which joins with US 101. US 101 is a two-way, four-lane roadway with a center turn lane, and is defined as a Major Arterial road (City of Eureka 2018).

The proposed Project would not constitute an extension of the City's roadway network; rather it would be a City owned and maintained Operations Complex. The Project would maintain Oceanview Cemetery Road and would widen and improve Weiler Road. These activities would not conflict with goals and policies contained in the City of Eureka General Plan Mobility Element.

The number of construction-related vehicles traveling to and from the Project Area would vary daily. As a conservative upper limit for impact analysis, approximately 2,470 10-yard dump truck trips would be required to off-haul approximately 24,660 CY of material. These trips would occur during daytime hours, Monday through Friday, over a period of approximately two months. Due to the infrequency of truck traffic and the temporary nature of construction, Project construction would not conflict with plans, policies, or programs related to the effectiveness of the circulation system.

Operationally, the Project would include trip generation from an estimated 66 employees, in addition to guest use and operational deliveries; however, trips associated with operation of the Project would be relocated trips from the existing corp yard, and consolidation from City Hall, and would not be new trips. Additionally, the number of daily trips associated with the Project is low and would not significantly impact intersections within the City.

The Project would also comply with the following City Policies:

– M-1.6: Integrate transportation and land use decisions to enhance opportunities for development that is compact, walkable and transit friendly.

– M-3.8: Prioritize the installation of secure bicycle parking and other supporting facilities in areas generating substantial bicycle traffic and at major public facilities. Install, and encourage the installation by other entities of bike parking throughout the city.
– M-5.5: Support parking for Electric Vehicles (EVs), carpools, and hybrids, including the development of local charging stations in both public and private parking lots and large commercial parking lots.

Per Policy M-1.6, the Project is located on an infill site surrounded by urban uses. This includes nearby bus stops, as well as bicycle infrastructure. Per Policy M-3.8, the Project includes both short-term and long-term bike storage. Additionally, the Project includes onsite shower(s) for employees to utilize, supporting bike commuting. The Project will also include EV parking, consistent with Policy M-5.5.

Thus, the Project is consistent with the Eureka General Plan and any potential impact would be less than significant. This impact would be less than significant.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)? (Less Than Significant Impact)

CEQA Guidelines Section 15064.3, subdivision (b) establishes the criteria for analyzing transportation impacts. This Section determines that, for land use projects, “Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. [...] A lead agency has discretion to choose the most appropriate methodology to evaluate a Project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a Project's vehicle miles traveled (VMT) and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project.” CCR tit. 14 § 15064.3.

Trips associated with the Project would be a re-orientation and consolidation of traffic already occurring with the City’s existing corp yard and within City Hall. The Project involves relocation of existing facilities and operations, primarily by shifting trips associated with the existing corp yard approximately two miles south along US 101. Additionally, the Project would consolidate employees that currently work at City Hall into one location, potentially reducing overall VMT. This would result in a *de minimis* change in VMT. Therefore, a less than significant impact would result.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No Impact)

The Project would pave and improve Weiler Road; however, existing road geometry along Oceanview Cemetery Road and Weiler Road would not be altered. The existing intersection at Oceanview Cemetery Road and US 101 would not be altered. The Project does not include any other new roadway or feature that would impede safe lines of sight, affect geometric designs of roadways, or result in a transportation hazard. Truck traffic on Oceanview Cemetery Road would increase due to the Project; however, this adjustment would not be an incompatible use for the roadway. The City would maintain Oceanview Cemetery Road and would improve Weiler Road to ensure safety. There would be no impact.

d) Result in inadequate emergency access? (Less Than Significant)

During construction, Oceanview Cemetery Road and Weiler Road would experience construction-related traffic. Construction-related road closures would not occur; however, temporary lane closures on Weiler Road may be required. Ingress and egress for emergency vehicles would be maintained. Once constructed, the Project would serve as the Operations Complex for the City during emergencies and would enhance the City's capabilities for response over the current corp yard which is at risk of being compromised due to a seismic or flood event. Thus, a less than significant impact would result.

3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)?		✓		
b) Cause a substantial adverse change in the significance of a tribal cultural resource that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1? In applying the criteria set forth in subdivision (c) of the Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.		✓		

a, b) Cause a substantial adverse change in the significance of a tribal cultural resource? (Less Than Significant with Mitigation)

CEQA requires lead agencies to determine if a proposed Project would have a significant effect on tribal cultural resources. The CEQA Guidelines define tribal cultural resources as: (1) a site, feature, place, cultural landscape, sacred place, or object with cultural value to a California Native American Tribe that is listed or eligible for listing on the California Register of Historical Resources, or on a local register of historical resources as defined in Public Resources Code Section 5020.1(k); or (2) a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant according to the historical register criteria in Public Resources Code Section 5024.1(c), and considering the significance of the resource to a California Native American Tribe.

Under AB 52, the City reached out to the California NAHC to receive a consultation list of tribes that are traditionally and culturally affiliated with the geographic area of the Project. In addition to the 3 local area Wiyot tribes, the list included Big Lagoon Rancheria, Cher-Ae Heights Indian Community of the Trinidad Rancheria, Hoopa Valley Tribe, Karuk Tribe, Round Valley Reservation/Covelo Indian Community, and Yurok Tribe. The City issued tribal notification letters to the tribes on the NAHC list on July 14, 2023. Notification letters were sent to the Bear River Band of the Rohnerville Rancheria, Blue Lake Rancheria, and the Wiyot Tribe on July 14, 2023. The AB 52 process affords tribes 30 days after receipt of a formal notification to initiate consultation, which, for the Project, extended through August 13, 2023. A response was received from the Wiyot Tribe on July 20, 2023. The response did not convey concern with the Project outside of a recommendation for inadvertent discovery protocols, which have been incorporated as part of Mitigation Measure CR-1, Mitigation Measure CR-2, and Mitigation Measure CR-3.

The Bear River Band of the Rohnerville Rancheria responded on August 8, 2023, requesting a copy of the cultural resource investigation prepared for the Project and indicating they would like to consult under AB 52; the cultural resource investigation was provided via email on August 21, 2023 and consultation is underway. No other responses have been received.

In addition, a CRI was conducted in which a record search of the NAHC and the CHRIS NWIC were conducted. The NWIC reported three Wiyot villages are recorded, however despite several surveys of the area, these sites have not been confirmed. Additionally, a field survey conducted for the Project did not identify resources within the Project Area (WRA 2023). Additionally, as part of the CRI, tribal outreach occurred. The Wiyot Tribe requested that the cultural resource investigation include protocols for inadvertent archaeological discovery and the Bear River Band of the Rohnerville Rancheria Tribe requested that a tribal monitor should be present during ground disturbing activities. While no tribal cultural resources have been identified, with the incorporation of Mitigation Measures CR-1, Mitigation Measure CR-2, and Mitigation Measure CR-3, any potential impact would be reduced to a less than significant level.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical 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?			✓	

Water and sewer service for the Project would be provided by the City. Electric power would be provided by PG&E, and telecommunications utilities by private providers. New water, sewer, and power utility connections to the Project Area would be required.

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electrical power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? (Less than Significant Impact)

No existing utility infrastructure exists within the Project site. New water, sewer, power, and communication infrastructure would need to be extended to service the Project. Extended utilities may be connected to existing infrastructure through adjacent private properties, or routed along Oceanview Cemetery Road to US 101. The connections would be routed underground. With the utilities being undergrounded within an existing road alignment, environmental impacts would be minimal. The proposed Project is a relatively small-scale municipal complex on an infill site resulting in relocation of existing facilities and operations and would not result in the need for the construction of new water or wastewater treatment facilities, or the expansion of existing such facilities. Therefore, a less than significant impact would occur.

b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years? (Less Than Significant Impact)

The Project would create a small increase in demand for domestic water service from the City. However, the demand for domestic water services would be offset by the relocation of employees from the existing corp yard and City Hall.

The City purchases its water supply from the Humboldt Bay Municipal Water District (HBMWD) which is sourced from the Mad River watershed and Ruth Lake. According to the City of Eureka 2015 Urban Water Management Plan, the City has a peak rate allocation of 1,883 Million Gallons per Day (MGD) from HBMWD (City of Eureka 2016). The 2015 demand was 1,034 MGD, or 55 percent of the City's allocation. In 2030, the projected demand is anticipated to be approximately 1,562 MGD, with the 2035 projection being 1,614 MGD. This is a difference of 321 MGD and 269 MGD, respectively.

The data shows that the City has more than enough water supply to meet demand during normal, dry, and multiple dry years. Therefore, the City has sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years. A less than significant impact would result.

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? (Less than Significant Impact)

The Project would create a small incremental increase in demand for wastewater treatment from the City or Eureka's Elk River Wastewater Treatment Plant. However, the demand for wastewater treatment would be offset by the relocation of employees from the existing corp yard and City Hall. The proposed Project would not interfere with the wastewater treatment facility's ability to comply with NCRWQCB regulations because: (1) the Project would create only a small incremental increase in wastewater requiring treatment and disposal, (2) the wastewater generated would be consistent with other adjacent commercial uses. The wastewater treatment plant receives approximately 3.5 MGD and has a capacity of 32 MGD (Eureka 2014). Therefore, the proposed Project would not result in a determination that there is not enough capacity to process the wastewater generated by the Project in addition to existing commitments. A less than significant impact would occur.

d, e) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (Less Than Significant Impact)

The solid waste providers in the area are Recology and the Humboldt Waste Management Authority (HWMA). The proposed Project would generate solid waste during both construction and operation. Construction solid waste would include the one-time temporary generation of construction waste associated with the proposed construction. Excess soil and construction materials would be stored within designated staging areas. Excess materials may be re-used on site for backfill and finished grading. Excess materials would not be stockpiled on-site once the Project is complete. The contractor would haul additional excess materials off site for beneficial re-use, recycling, or legal disposal. Solid waste collected as a part of the Project would be disposed of via Recology or HWMA. Project operation is anticipated to be served by dumpsters collected by Recology. Solid waste produced in the County is trucked to State licensed landfills

located in Anderson, California and Medford, Oregon in compliance with local, State, and Federal regulations pertaining to solid waste disposal. These facilities have sufficient capacity to serve the Project's solid waste disposal needs (Eureka 2014); therefore, a less than significant impact would result.

3.20 Wildfire

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
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 slop instability, or drainage changes?			✓	

The Project Area is located within a Local Responsibility Area (LRA) in which suppressing wildfire is primarily the responsibility of the local jurisdiction, i.e., local fire department (Humboldt County 2023c). The Project is entirely located within an unzoned Fire Hazard Severity Zone (FHSZ) (Humboldt County 2022e). The nearest land classified as a very high fire hazard severity zone is approximately 1.3 miles east of the Project Area (CAL FIRE 2007). The Project Area is served by the Humboldt Bay Fire Department, a Joint Powers Authority serving the City of Eureka and the greater Eureka area (Humboldt County 2023d). The closest fire station to the Project Area is the Humboldt Bay Fire Station 3, located approximately 0.9 mile north of the Project and the Humboldt Bay Fire Station 2, approximately 1.0 mile south.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan (No Impact)

The City does not have an EOP; however, a review of the Humboldt County EOP (Humboldt County 2015) indicates that the Project would not permanently impair emergency response activities nor established evacuation routes. Project operation would not impair implementation or physically interfere with an established emergency response or evacuation plan; see Section 3.9, Impact (f)) for discussion of the Project's effect on emergency response and evacuation plans.) The Project would not permanently impede access to any existing roads or pedestrian ways. The Project would instead operate as the City's operations center during emergencies. Relocating the City's existing corp yard to the Project Area would enhance emergency operational responses as the Operations Complex would be located outside of liquefaction, tsunami and flooding zones. No impact would result.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? (Less than Significant Impact)

The Project Area includes topography that is gently sloped to the west with a prevailing north wind. Fire ignition risk associated with construction activities is low and limited to accidental ignition associated with a potential heavy machinery-related incident. The Project would not otherwise increase exposure to wildfire above existing conditions. The impact would be less than significant.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? (Less Than Significant Impact)

Development of the Project would not result in a need to expand wildfire protection infrastructure to the Project Area or in the immediate vicinity of the Project. New roads for fire defense and expanded water sources would not be required. A new underground power line would be required, but any fire risk would be minimal due to the short distance required and the underground location of the utility line. The impact would be less than significant.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability, or drainage changes? (Less than Significant Impact)

The Project Area includes topography that is gently sloped with low risk of landslides. The immediate Project Area is not forested, although some vegetation is present. Fire ignition risk associated with construction activities is low. A potential wildfire would be quickly extinguished due to the presence of nearby fire stations and enhanced fire defense capabilities. The Project would not result in a substantial change in runoff or post-fire slope instability that would expose people or structures to significant risks. The impact would be less than significant.

3.21 Mandatory Findings of Significance

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

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? (Less Than Significant with Mitigation)

Potential Project impacts to biological, cultural, and tribal cultural resources are addressed in Section 3.4, Section 3.5, and Section 3.18, respectively. With implementation of the recommended mitigation measures identified in this Initial Study, the potential for Project-related activities to degrade the quality of the environment, including wildlife species or their habitat, plant or animal communities, or important examples of California history or prehistory would be reduced to less-than-significant levels.

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)? (Less than Significant Impact)

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines § 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. As analyzed in Section 3.8, the Project will include natural gas appliances and plumbing to

ensure redundant utilities are available during emergencies. Mitigation Measure GHG-1 was included to ensure climate friendly Project features and operational practices are implemented to reduce any cumulative impact associated with the planned use of natural gas.

Efforts to identify cumulative projects included outreach to the City of Eureka Planning and Building Department and the City of Eureka Department of Public Works. Caltrans has funding and is applying to the Coastal Commission for a CDP for the South Broadway Complete Streets project, which is expected to begin construction in 2025. This Caltrans project will improve bicycle, pedestrian, and transit connectivity to the Project Area and reduce project impacts related to energy, air quality, and VMT.

The impacts associated with the proposed Project analyzed in this IS/MND would not add appreciably to any existing or foreseeable future significant cumulative impact, such as visual quality, cultural resources, biological, traffic impacts, or air quality degradation. Incremental impacts, if any, would be negligible and undetectable. Because the proposed Project would not result in significant impacts after mitigation, the proposed Project would not add appreciably to any existing or foreseeable future significant cumulative impact. Incremental impacts, if any, would be very small, and the cumulative impact would be less than significant.

c) Does the Project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less Than Significant Impact)

The Project has been planned and designed to avoid significant environmental impacts. As discussed in the analysis throughout Section3 of this IS/MND, the Project would not have environmental effects that would cause substantial adverse direct or indirect effects on human beings. With implementation of the recommended mitigation measures identified in this IS/MND, the potential for Project-related activities to cause substantial adverse effects on human beings would be reduced to less-than-significant levels.

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LACO

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Appendix A

Figures

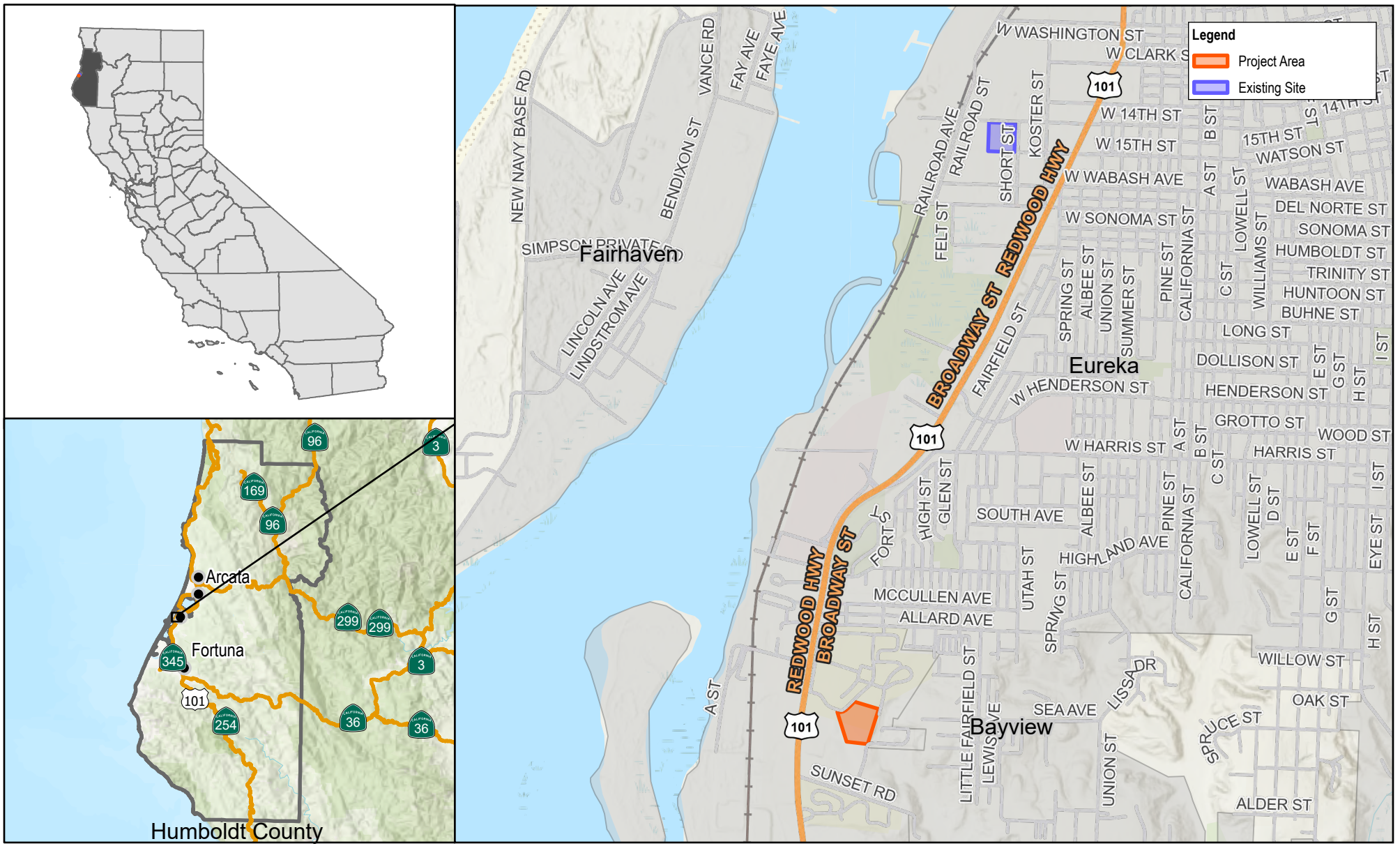
Figure 1 **Vicinity Map**

Figure 2 **Project Access Roads**

Figure 3 **Concept Site Plan**

Figure 4 **Concept Sketch**

Figure 5 **Existing Topographic Survey**



Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California II FIPS 0402 Feet

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GHD

City of Eureka
Operations Complex
ISMND

Project No. **12614979**
Revision No. **-**
Date **22/08/2023**

Vicinity Map

FIGURE 1

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Print date: 22 Aug 2023 - 10:19

Data source: TIGERweb/Transportation: Source: U.S. Census Bureau
World Hillshade: Esri, NASA, NGA, USGS, FEMA
World Topographic Map - labelless: California State Parks, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, Bureau of Land Management,

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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City of Eureka
Operations Complex
ISMND

Project No. **12614979**
Revision No. **-**
Date **22/08/2023**

Project Site and Access Roads

FIGURE 2

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Print date: 22 Aug 2023 - 10:25

Data source: World Imagery (Clarity): Esri, Maxar, Earthstar Geographics, CNES/Airbus DS, and the GIS User Community. Created by: ethompson3

DESCRIPTION

- This concept master plan includes the construction of three main buildings; Operations Building, Warehouse (Utilities and Transportation), and Fleet Maintenance Shop as described below.
- Includes site features such as: dewatering facility, bulk material storage, vehicle & equipment storage, trash & recycle, and stormwater/site improvements
- Total Site Area: Approx. 5.50 Acres

BUILDING SUMMARY

Ⓐ Operations Building
(2) Story
Pre-Engineered Metal Building
19,175 SF

Ⓑ Warehouse (Utilities and Transportation)
(1) Story + Mezzanine
Pre-Engineered Metal Building
19,800 SF

Ⓒ Fleet Maintenance Shop
(1) Story + Mezzanine
Pre-Engineered Metal Building
13,650 SF

PARKING SUMMARY

▪ Vistor	10
▪ Staff/Seasonal	54
▪ Fleet Covered	62
▪ Fleet Uncovered	78
Total:	204

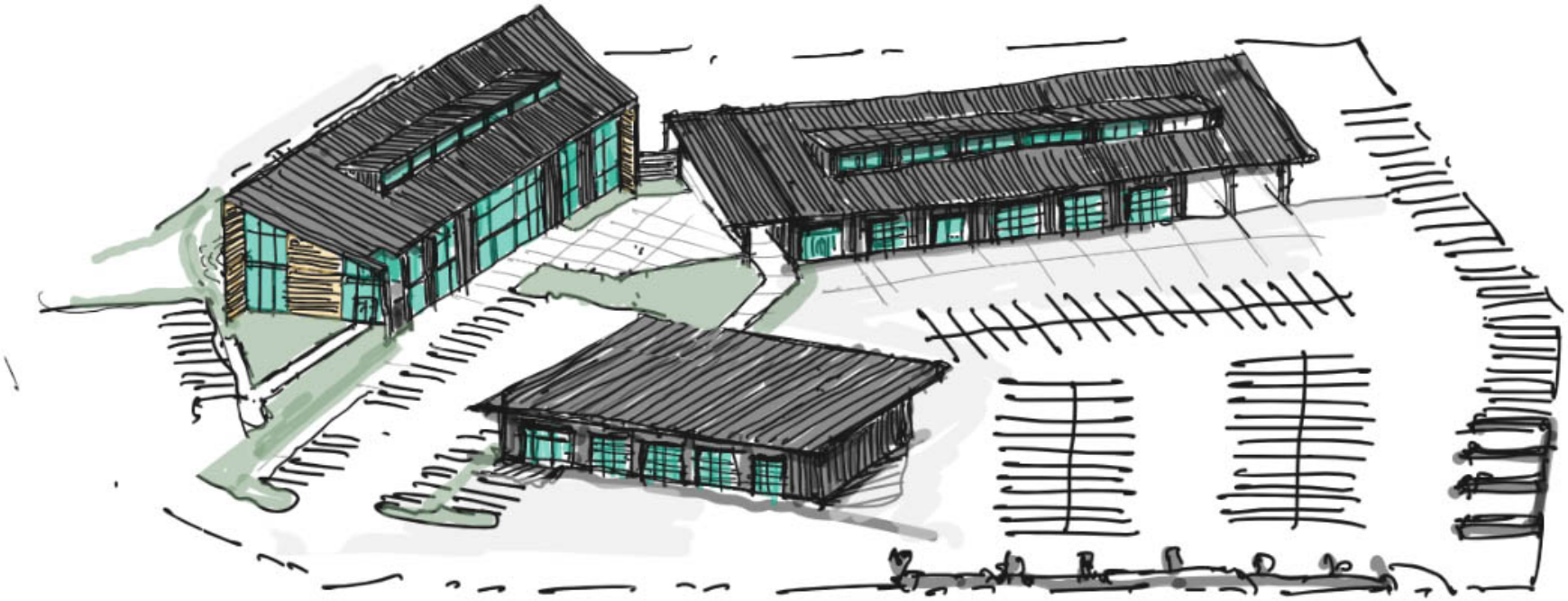
Concept Site Plan

0' 20' 40' 80'

Eureka Operations Complex
3993 Broadway, Eureka, CA 95503
Project #23071 09.06.2023

Figure 3

Scott Edwards Architecture



3D Sketch

SCALE: NTS

Eureka Operations Complex
3993 Broadway, Eureka, CA 95503
Project #23071 09.06.2023

Figure 4

Scott Edwards Architecture

TOPOGRAPHIC SURVEY NOTES

1. THE PURPOSE OF THIS MAP IS TO SHOW THE TOPOGRAPHIC FEATURES OF THE PROPERTY PROPOSED TO BE PURCHASED BY THE CITY OF EUREKA IN OCEANVIEW CEMETERY.
2. FEATURES WERE LOCATED DURING A FIELD SURVEY ON JUNE 20th, 2023 BY ONTIVEROS & ASSOCIATES, INC. (O&A).
3. PROPERTY LINES AND RIGHT OF WAY HAVE BEEN LOCATED PER BOOK 70 OF SURVEYS, PAGES 42-43 RECORDED ON JANUARY 18, 2013. ROTATED AND SCALED TO THIS BASIS OF BEARINGS PER TIED CENTERLINE MONUMENTS AT CONROL POINT #53 AND #24.
4. BEARINGS SHOWN HEREON ARE BASED ON THE CALIFORNIA STATE PLANE COORDINATE SYSTEM (CCS83), ZONE 1, EPOCH 2010.00, HAVING A CONVERGENCE ANGLE OF -01°26'02" AND A COMBINED SCALE FACTOR OF 0.99989986 (ELLIPSOID HEIGHT OF -917) AT CP 1, USING NGS OPUS. THE NEAREST BASE STATIONS BEING PID DH3867, DG8511, AND DN7536. ROTATE GRID BEARINGS SHOWN HEREON COUNTER-CLOCKWISE BY THE CONVERGENCE ANGLE TO OBTAIN GEODETIC (TRUE) BEARINGS. DIVIDE GRID DISTANCES HEREIN BY THE COMBINED SCALE FACTOR TO OBTAIN "GROUND" DISTANCES.
5. ELEVATIONS ARE NAVD88 USING NGS OPUS.
6. CP1 CONSISTS OF A RAILROAD SPIKE WITH PUNCH LOCATED NEAR THE INTERSECTION OF THE OLD POUND ROAD AND HIKSHARY TRAIL:
   - OPUS SOLUTION
   - EPOCH 2010.00
   - CONVERGENCE ANGLE: -1°26'02"
   - COMBINED SCALE FACTOR: 0.99989986
   - N: 2,167,552.10'
   - E: 5,954,313.6873'
   - EL: 10.12' NAVD 88
7. THE LOCATION OF UNDERGROUND UTILITIES SHOWN HEREON HAS BEEN DETERMINED FROM SURFACE EVIDENCE OF THEIR EXISTENCE. THE SURVEYOR ACCEPTS NO LIABILITY FOR THE EXISTENCE OR NONEXISTENCE OF UTILITIES. CONTRACTORS, DESIGN PROFESSIONALS, OR OTHERS USING THIS MAP MUST CONFIRM THE LOCATION OF UNDERGROUND LINES OR STRUCTURES WITH THE UTILITY COMPANIES PRIOR TO COMMENCING ANY EXCAVATION.
8. CONTOURS ARE SHOWN AT 1' INTERVALS.
9. THERE IS NO SURFACE EVIDENCE OF WATER AND SEWER MAINS IN THE VICINITY OF THE PROJECT. DOES THE CITY OF EUREKA HAVE ADDITIONAL INFO? WILL THE CONNECTIONS BE MADE TO SUNSET ROAD, BROADWAY, OR ON SITE?
10. NO SURFACE EVIDENCE OF DRAINAGE EXIT FROM SWALE OR WHERE THE DRAINS WITHIN OCEANVIEW CEMETERY ROAD DRAIN TO. DOES THE CITY OF EUREKA HAVE ADDITIONAL INFO ON DRAINAGE IN VICINITY?
11. THE PRELIMINARY TITLE REPORT IS IN THE PROCESS OF BEING UPDATED. THIS MAP MAY NEED TO BE UPDATED WHEN THIS NEW REPORT IS DELIVERED. CURRENT PRELIMINARY REPORT: FHBT-00223003156 DATED MAY 25, 2023.
12. PER THE PRELIMINARY REPORT, THE PROPERTY DETAILED IN 2017-009401 O.R. AND 2006-27451-10 O.R. TRACT THREE, PARCEL ONE HAVE THE NON-EXCLUSIVE RIGHT TO USE THE EXISTING ROAD (OCEANVIEW CEMETERY ROAD).
13. 73 RS 3, 62 RS 42-45, 30 PM 5-6.14 PM 107, AND 8 PM 92 REFER TO WEILER ROAD AS PRIVATE ROAD, NON-COUNTY ROAD, AND EXISTING RIGHT OF WAY. DOES THE CITY OF EUREKA HAVE ADDITIONAL INFORMATION ON THIS ROAD? CONTACT FOR ADDITIONAL INFORMATION FROM THE COUNTY OF HUMBOLDT HAS BEEN MADE BUT HAS NOT BEEN DELIVERED AT THIS TIME.

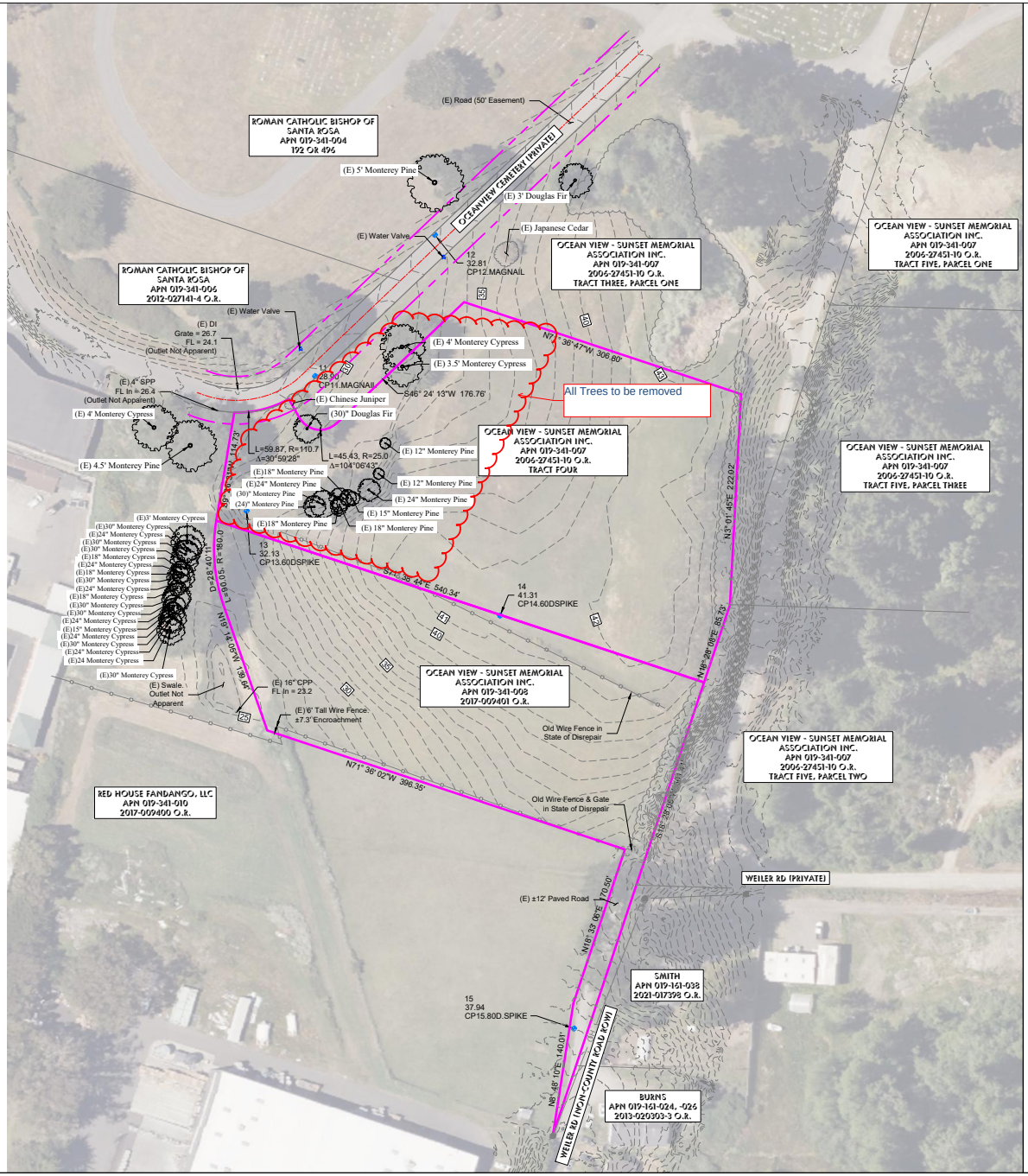
SYMBOLS LEGEND

- (E) MAJOR CONTOUR LINES
- (E) MINOR CONTOUR LINES
- EDGE OF PAVEMENT/GRAVEL
- OVERHEAD POWER LINE
- ROAD CENTERLINE
- RIGHT OF WAY
- PROPERTY LINE
- (E) WIRE FENCE

- MANHOLE
- TREE
- WATER VALVE
- UTILITY POLE
- POLE GUY LINE
- MONUMENT COVER
- SIGN
- CONTROL POINT
- WATER METER

EXISTING SITE TOPOGRAPHIC SURVEY

1" = 60'



O&A
ONTIVEROS & ASSOCIATES INC
CONSULTING ENGINEERS AND SURVEYORS
404 N. Fortuna Blvd. • Fortuna, CA 95540
Phone (707) 725-7410 • Fax (707) 725-7411
Ontiveros.Assoc@att.net

PROFESSIONAL LAND SURVEYOR — KENNETH R. JOHNSTON — No. 9194 — STATE OF CALIFORNIA

CITY OF EUREKA

EUREKA OPERATIONS COMPLEX

Oceanview Cemetery
Eureka, CA 95503
APNs: 019-341-007 (Portion) & 019-341-008

EXISTING TOPOGRAPHIC SURVEY

MARK	DESCRIPTION	DATE

PLOT INFORMATION

CAD DWG FILE: P:\23-007 CITY OF EUREKA\23-007.03 COE - NEW COMP YARD CEMETERY\CIVIL\SITE PLAN (23-07-06).DWG
PLOT DATE: 7/7/2023 3:15 PM
SAVE DATE: 7/7/2023 3:14 PM

SUBMITTAL STATUS
CLIENT REVIEW

PROJECT NO:	23-007.03
DATE:	7/07/2023
DRAWN BY:	BJO
CHK'D BY:	KRJ

Figure 5

Eureka Operations Complex Project Detailed Report

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8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Eureka Operations Complex Project
Construction Start Date	1/1/2029
Operational Year	2030
Lead Agency	City of Eureka
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.90
Precipitation (days)	64.2
Location	40.77016614787121, -124.18824322299065
County	Humboldt
City	Eureka
Air District	North Coast Unified APCD
Air Basin	North Coast
TAZ	106
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.18

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

Government Office Building	20.0	1000sqft	0.46	20,000	1.00	—	—	—
Parking Lot	209	Space	4.29	0.00	1.00	—	—	—
Automobile Care Center	10.0	1000sqft	0.23	10,000	1.00	—	—	—
Unrefrigerated Warehouse-No Rail	21.0	1000sqft	0.48	21,000	1.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.06	8.89	13.7	0.28	0.17	0.45	0.26	0.04	0.30	2,697	2,697	0.11	0.05	0.86	2,716
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	73.0	47.7	28.8	1.09	19.8	20.9	1.00	10.1	11.1	28,348	28,348	0.22	4.03	1.05	29,554
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.68	6.95	9.46	0.21	0.74	0.95	0.20	0.31	0.51	2,378	2,378	0.07	0.12	0.61	2,416
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.67	1.27	1.73	0.04	0.13	0.17	0.04	0.06	0.09	394	394	0.01	0.02	0.10	400

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	1.06	8.89	13.7	0.28	0.17	0.45	0.26	0.04	0.30	2,697	2,697	0.11	0.05	0.86	2,716
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	3.05	47.7	28.8	1.09	19.8	20.9	1.00	10.1	11.1	28,348	28,348	0.22	4.03	1.05	29,554
2030	73.0	8.70	13.7	0.26	0.17	0.44	0.24	0.04	0.28	2,690	2,690	0.11	0.05	0.02	2,707
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	0.75	6.95	9.46	0.21	0.74	0.95	0.20	0.31	0.51	2,378	2,378	0.07	0.12	0.61	2,416
2030	3.68	0.49	0.79	0.02	0.01	0.02	0.01	< 0.005	0.02	127	127	0.01	< 0.005	0.01	128
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2029	0.14	1.27	1.73	0.04	0.13	0.17	0.04	0.06	0.09	394	394	0.01	0.02	0.10	400
2030	0.67	0.09	0.14	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	21.1	21.1	< 0.005	< 0.005	< 0.005	21.2

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.	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.23	2.00	3.42	0.08	0.00	0.08	0.08	0.00	0.08	1,059	1,119	6.17	0.06	2,073	3,364
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	1.86	1.98	1.21	0.08	0.00	0.08	0.08	0.00	0.08	1,050	1,110	6.16	0.06	2,073	3,354
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.04	1.96	2.28	0.08	0.00	0.08	0.08	0.00	0.08	1,051	1,111	6.16	0.06	2,073	3,355
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.37	0.36	0.42	0.01	0.00	0.01	0.01	0.00	0.01	174	184	1.02	0.01	343	556

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.83	0.02	2.22	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.12	9.12	< 0.005	< 0.005	—	9.15
Energy	0.02	0.27	0.23	0.02	—	0.02	0.02	—	0.02	830	830	0.11	0.01	—	836
Water	—	—	—	—	—	—	—	—	—	24.3	43.0	1.92	0.05	—	105
Waste	—	—	—	—	—	—	—	—	—	0.00	41.3	4.12	0.00	—	144
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Stationary	0.38	1.71	0.98	0.06	0.00	0.06	0.06	0.00	0.06	196	196	0.01	< 0.005	0.00	196
Total	2.23	2.00	3.42	0.08	0.00	0.08	0.08	0.00	0.08	1,059	1,119	6.17	0.06	2,073	3,364
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.02	0.27	0.23	0.02	—	0.02	0.02	—	0.02	830	830	0.11	0.01	—	836
Water	—	—	—	—	—	—	—	—	—	24.3	43.0	1.92	0.05	—	105

Waste	—	—	—	—	—	—	—	—	—	0.00	41.3	4.12	0.00	—	144
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Stationary	0.38	1.71	0.98	0.06	0.00	0.06	0.06	0.00	0.06	196	196	0.01	< 0.005	0.00	196
Total	1.86	1.98	1.21	0.08	0.00	0.08	0.08	0.00	0.08	1,050	1,110	6.16	0.06	2,073	3,354
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area	1.65	0.01	1.09	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.50	4.50	< 0.005	< 0.005	—	4.51
Energy	0.02	0.27	0.23	0.02	—	0.02	0.02	—	0.02	830	830	0.11	0.01	—	836
Water	—	—	—	—	—	—	—	—	—	24.3	43.0	1.92	0.05	—	105
Waste	—	—	—	—	—	—	—	—	—	0.00	41.3	4.12	0.00	—	144
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Stationary	0.38	1.68	0.96	0.06	0.00	0.06	0.06	0.00	0.06	192	192	0.01	< 0.005	0.00	193
Total	2.04	1.96	2.28	0.08	0.00	0.08	0.08	0.00	0.08	1,051	1,111	6.16	0.06	2,073	3,355
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.30	< 0.005	0.20	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.74	0.74	< 0.005	< 0.005	—	0.75
Energy	< 0.005	0.05	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	137	137	0.02	< 0.005	—	138
Water	—	—	—	—	—	—	—	—	—	4.03	7.13	0.32	0.01	—	17.4
Waste	—	—	—	—	—	—	—	—	—	0.00	6.83	0.68	0.00	—	23.9
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	343	343
Stationary	0.07	0.31	0.17	0.01	0.00	0.01	0.01	0.00	0.01	31.8	31.8	< 0.005	< 0.005	0.00	31.9
Total	0.37	0.36	0.42	0.01	0.00	0.01	0.01	0.00	0.01	174	184	1.02	0.01	343	556

3. Construction Emissions Details

3.1. Site Preparation (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.97	25.9	28.1	1.09	—	1.09	1.00	—	1.00	5,296	5,296	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—
Onsite truck	0.00	0.00	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	0.05	0.43	0.46	0.02	—	0.02	0.02	—	0.02	87.1	87.1	< 0.005	< 0.005	—	87.4
Dust From Material Movement	—	—	—	—	0.32	0.32	—	0.17	0.17	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.08	0.08	< 0.005	—	< 0.005	< 0.005	—	< 0.005	14.4	14.4	< 0.005	< 0.005	—	14.5
Dust From Material Movement	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.07	0.72	0.00	0.12	0.12	0.00	0.03	0.03	115	115	0.01	0.01	0.01	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.90	1.90	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.31	0.31	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.3. Grading (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.52	13.0	17.2	0.53	—	0.53	0.49	—	0.49	2,959	2,959	0.12	0.02	—	2,969

Dust From Material Movement	—	—	—	—	7.28	7.28	—	3.45	3.45	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.29	0.38	0.01	—	0.01	0.01	—	0.01	64.9	64.9	< 0.005	< 0.005	—	65.1
Dust From Material Movement	—	—	—	—	0.16	0.16	—	0.08	0.08	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.07	< 0.005	—	< 0.005	< 0.005	—	< 0.005	10.7	10.7	< 0.005	< 0.005	—	10.8
Dust From Material Movement	—	—	—	—	0.03	0.03	—	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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.62	0.00	0.10	0.10	0.00	0.02	0.02	98.6	98.6	0.01	< 0.005	0.01	—
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	—
Hauling	0.58	34.6	5.47	0.51	6.97	7.48	0.51	1.96	2.47	25,290	25,290	0.03	4.00	1.04	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	2.17	2.17	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	0.01	0.74	0.12	0.01	0.15	0.16	0.01	0.04	0.05	554	554	< 0.005	0.09	0.38	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.36	0.36	< 0.005	< 0.005	< 0.005	—
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	—
Hauling	< 0.005	0.13	0.02	< 0.005	0.03	0.03	< 0.005	0.01	0.01	91.7	91.7	< 0.005	0.01	0.06	—

3.5. Building Construction (2029) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.97	8.58	12.9	0.28	—	0.28	0.25	—	0.25	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	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	0.97	8.58	12.9	0.28	—	0.28	0.25	—	0.25	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	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	0.60	5.31	7.98	0.17	—	0.17	0.16	—	0.16	1,482	1,482	0.06	0.01	—	1,487

Onsite truck	0.00	0.00	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	0.11	0.97	1.46	0.03	—	0.03	0.03	—	0.03	245	245	0.01	< 0.005	—	246
Onsite truck	0.00	0.00	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	0.09	0.06	0.69	0.00	0.12	0.12	0.00	0.03	0.03	121	121	0.01	0.01	0.46	—
Vendor	0.01	0.24	0.08	< 0.005	0.05	0.05	< 0.005	0.01	0.02	179	179	< 0.005	0.03	0.40	—
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.76	0.00	0.12	0.12	0.00	0.03	0.03	121	121	0.01	0.01	0.01	—
Vendor	0.01	0.25	0.08	< 0.005	0.05	0.05	< 0.005	0.01	0.02	179	179	< 0.005	0.03	0.01	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.05	0.04	0.45	0.00	0.07	0.07	0.00	0.02	0.02	75.1	75.1	0.01	< 0.005	0.12	—
Vendor	< 0.005	0.15	0.05	< 0.005	0.03	0.03	< 0.005	0.01	0.01	111	111	< 0.005	0.02	0.11	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.08	0.00	0.01	0.01	0.00	< 0.005	< 0.005	12.4	12.4	< 0.005	< 0.005	0.02	—
Vendor	< 0.005	0.03	0.01	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	18.3	18.3	< 0.005	< 0.005	0.02	—
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	—

3.7. Building Construction (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.94	8.39	12.9	0.26	—	0.26	0.24	—	0.24	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.10	0.15	< 0.005	—	< 0.005	< 0.005	—	< 0.005	28.1	28.1	< 0.005	< 0.005	—	28.2
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	4.66	4.66	< 0.005	< 0.005	—	4.68
Onsite truck	0.00	0.00	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	0.08	0.07	0.71	0.00	0.12	0.12	0.00	0.03	0.03	119	119	0.01	0.01	0.01	—
Vendor	0.01	0.24	0.08	< 0.005	0.05	0.05	< 0.005	0.01	0.02	174	174	< 0.005	0.03	0.01	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.40	1.40	< 0.005	< 0.005	< 0.005	—
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	2.04	2.04	< 0.005	< 0.005	< 0.005	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.23	0.23	< 0.005	< 0.005	< 0.005	—
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.34	0.34	< 0.005	< 0.005	< 0.005	—
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	—

3.9. Paving (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	6.28	9.90	0.22	—	0.22	0.20	—	0.20	1,511	1,511	0.06	0.01	—	1,516
Paving	0.56	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	0.34	0.54	0.01	—	0.01	0.01	—	0.01	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.06	0.10	< 0.005	—	< 0.005	< 0.005	—	< 0.005	13.7	13.7	< 0.005	< 0.005	—	13.8
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	—
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.57	0.00	0.10	0.10	0.00	0.02	0.02	97.0	97.0	0.01	< 0.005	0.01	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.01	0.01	0.00	< 0.005	< 0.005	5.33	5.33	< 0.005	< 0.005	0.01	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.88	0.88	< 0.005	< 0.005	< 0.005	—
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	—
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	—

3.11. Architectural Coating (2030) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.78	1.11	0.01	—	0.01	0.01	—	0.01	134	134	0.01	< 0.005	—	134
Architectural Coatings	72.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.05	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.58	6.58	< 0.005	< 0.005	—	6.61
Architectural Coatings	3.60	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	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	0.01	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	1.09	1.09	< 0.005	< 0.005	—	1.09
Architectural Coatings	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	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	0.02	0.01	0.14	0.00	0.02	0.02	0.00	0.01	0.01	23.8	23.8	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	1.18	1.18	< 0.005	< 0.005	< 0.005	—
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	—
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	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.20	0.20	< 0.005	< 0.005	< 0.005	—
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	—
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	—

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	236	236	0.04	< 0.005	—	238
Parking Lot	—	—	—	—	—	—	—	—	—	91.5	91.5	0.01	< 0.005	—	92.5
Automobile Care Center	—	—	—	—	—	—	—	—	—	57.9	57.9	0.01	< 0.005	—	58.5
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	119	119	0.02	< 0.005	—	120
Total	—	—	—	—	—	—	—	—	—	504	504	0.08	0.01	—	509
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	236	236	0.04	< 0.005	—	238
Parking Lot	—	—	—	—	—	—	—	—	—	91.5	91.5	0.01	< 0.005	—	92.5
Automobile Care Center	—	—	—	—	—	—	—	—	—	57.9	57.9	0.01	< 0.005	—	58.5

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	119	119	0.02	< 0.005	—	120
Total	—	—	—	—	—	—	—	—	—	504	504	0.08	0.01	—	509
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	39.0	39.0	0.01	< 0.005	—	39.4
Parking Lot	—	—	—	—	—	—	—	—	—	15.2	15.2	< 0.005	< 0.005	—	15.3
Automobile Care Center	—	—	—	—	—	—	—	—	—	9.59	9.59	< 0.005	< 0.005	—	9.69
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	19.6	19.6	< 0.005	< 0.005	—	19.8
Total	—	—	—	—	—	—	—	—	—	83.4	83.4	0.01	< 0.005	—	84.2

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	0.01	0.13	0.11	0.01	—	0.01	0.01	—	0.01	149	149	0.01	< 0.005	—	150
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

Automobile Care Center	0.01	0.11	0.10	0.01	—	0.01	0.01	—	0.01	136	136	0.01	< 0.005	—	137
Unrefrigerated Warehouse-No Rail	< 0.005	0.03	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	40.3	40.3	< 0.005	< 0.005	—	40.4
Total	0.02	0.27	0.23	0.02	—	0.02	0.02	—	0.02	326	326	0.03	< 0.005	—	327
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	0.01	0.13	0.11	0.01	—	0.01	0.01	—	0.01	149	149	0.01	< 0.005	—	150
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
Automobile Care Center	0.01	0.11	0.10	0.01	—	0.01	0.01	—	0.01	136	136	0.01	< 0.005	—	137
Unrefrigerated Warehouse-No Rail	< 0.005	0.03	0.03	< 0.005	—	< 0.005	< 0.005	—	< 0.005	40.3	40.3	< 0.005	< 0.005	—	40.4
Total	0.02	0.27	0.23	0.02	—	0.02	0.02	—	0.02	326	326	0.03	< 0.005	—	327
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	< 0.005	0.02	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	24.7	24.7	< 0.005	< 0.005	—	24.8
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
Automobile Care Center	< 0.005	0.02	0.02	< 0.005	—	< 0.005	< 0.005	—	< 0.005	22.6	22.6	< 0.005	< 0.005	—	22.6

Unrefrigerated	< 0.005	0.01	0.01	< 0.005	—	< 0.005	< 0.005	—	< 0.005	6.67	6.67	< 0.005	< 0.005	—	6.69
Total	< 0.005	0.05	0.04	< 0.005	—	< 0.005	< 0.005	—	< 0.005	54.0	54.0	< 0.005	< 0.005	—	54.1

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.36	0.02	2.22	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.12	9.12	< 0.005	< 0.005	—	9.15
Total	1.83	0.02	2.22	< 0.005	—	< 0.005	< 0.005	—	< 0.005	9.12	9.12	< 0.005	< 0.005	—	9.15
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	1.11	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.36	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1.47	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.20	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectur Coatings	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.03	< 0.005	0.20	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.74	0.74	< 0.005	< 0.005	—	0.75
Total	0.30	< 0.005	0.20	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.74	0.74	< 0.005	< 0.005	—	0.75

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	9.89	17.5	0.78	0.02	—	42.6
Parking Lot	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Automobile Care Center	—	—	—	—	—	—	—	—	—	2.34	4.14	0.19	< 0.005	—	10.1
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	12.1	21.4	0.96	0.02	—	52.1
Total	—	—	—	—	—	—	—	—	—	24.3	43.0	1.92	0.05	—	105
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government Office Building	—	—	—	—	—	—	—	—	—	9.89	17.5	0.78	0.02	—	42.6
Parking Lot	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Automobile Care Center	—	—	—	—	—	—	—	—	—	2.34	4.14	0.19	< 0.005	—	10.1
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	12.1	21.4	0.96	0.02	—	52.1
Total	—	—	—	—	—	—	—	—	—	24.3	43.0	1.92	0.05	—	105
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	1.64	2.90	0.13	< 0.005	—	7.06
Parking Lot	—	—	—	—	—	—	—	—	—	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Automobile Care Center	—	—	—	—	—	—	—	—	—	0.39	0.69	0.03	< 0.005	—	1.67
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	2.00	3.54	0.16	< 0.005	—	8.63
Total	—	—	—	—	—	—	—	—	—	4.03	7.13	0.32	0.01	—	17.4

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	0.00	10.0	1.00	0.00	—	35.1
Parking Lot	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Automobile Care Center	—	—	—	—	—	—	—	—	—	0.00	20.6	2.06	0.00	—	72.0
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	0.00	10.6	1.06	0.00	—	37.2
Total	—	—	—	—	—	—	—	—	—	0.00	41.3	4.12	0.00	—	144
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	0.00	10.0	1.00	0.00	—	35.1
Parking Lot	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Automobile Care Center	—	—	—	—	—	—	—	—	—	0.00	20.6	2.06	0.00	—	72.0
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	0.00	10.6	1.06	0.00	—	37.2
Total	—	—	—	—	—	—	—	—	—	0.00	41.3	4.12	0.00	—	144
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Governme Office Building	—	—	—	—	—	—	—	—	—	0.00	1.66	0.17	0.00	—	5.81
Parking Lot	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Automobile Care Center	—	—	—	—	—	—	—	—	—	0.00	3.41	0.34	0.00	—	11.9
Unrefrigera ted Warehouse -No Rail	—	—	—	—	—	—	—	—	—	0.00	1.76	0.18	0.00	—	6.16
Total	—	—	—	—	—	—	—	—	—	0.00	6.83	0.68	0.00	—	23.9

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governme nt Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	2,073	2,073
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	0.01	0.01
Automobile Care Center	—	—	—	—	—	—	—	—	—	—	—	—	—	343	343
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	343	343

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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.38	1.71	0.98	0.06	0.00	0.06	0.06	0.00	0.06	196	196	0.01	< 0.005	0.00	0.00
undefined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	196
Total	0.38	1.71	0.98	0.06	0.00	0.06	0.06	0.00	0.06	196	196	0.01	< 0.005	0.00	196
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.38	1.71	0.98	0.06	0.00	0.06	0.06	0.00	0.06	196	196	0.01	< 0.005	0.00	0.00
undefined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	196
Total	0.38	1.71	0.98	0.06	0.00	0.06	0.06	0.00	0.06	196	196	0.01	< 0.005	0.00	196
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Emergency Generator	0.07	0.31	0.17	0.01	0.00	0.01	0.01	0.00	0.01	31.8	31.8	< 0.005	< 0.005	0.00	0.00
undefined	—	—	—	—	—	—	—	—	—	—	—	—	—	—	31.9
Total	0.07	0.31	0.17	0.01	0.00	0.01	0.01	0.00	0.01	31.8	31.8	< 0.005	< 0.005	0.00	31.9

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	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	ROG	NOx	CO	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequester	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/30/2029	2/6/2029	5.00	6.00	—
Grading	Grading	2/7/2029	2/18/2029	5.00	8.00	—
Building Construction	Building Construction	2/19/2029	1/6/2030	5.00	230	—
Paving	Paving	1/7/2030	2/1/2030	5.00	20.0	—
Architectural Coating	Architectural Coating	2/2/2030	2/27/2030	5.00	18.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	1.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	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
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	9.53	LDA,LDT1,LDT2
Site Preparation	Vendor	—	7.16	HHDT,MHDT

Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	15.0	9.53	LDA,LDT1,LDT2
Grading	Vendor	—	7.16	HHDT,MHDT
Grading	Hauling	385	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	18.4	9.53	LDA,LDT1,LDT2
Building Construction	Vendor	8.36	7.16	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	9.53	LDA,LDT1,LDT2
Paving	Vendor	—	7.16	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	3.68	9.53	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	7.16	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	0.00	0.00	76,500	25,500	11,220

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 (sq. ft.)	Acres Paved (acres)
Site Preparation	0.00	0.00	9.00	0.00	—
Grading	0.00	24,660	8.00	0.00	—
Paving	0.00	0.00	0.00	0.00	4.29

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
Government Office Building	0.00	0%
Parking Lot	4.29	100%
Automobile Care Center	0.00	0%
Unrefrigerated Warehouse-No Rail	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
2029	0.00	204	0.03	< 0.005

2030	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
Total all Land Uses	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	76,500	25,500	11,220

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Government Office Building	421,518	204	0.0330	0.0040	466,235
Parking Lot	163,812	204	0.0330	0.0040	0.00
Automobile Care Center	103,683	204	0.0330	0.0040	425,438
Unrefrigerated Warehouse-No Rail	212,156	204	0.0330	0.0040	125,709

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Government Office Building	3,973,194	8.48
Parking Lot	0.00	8.48
Automobile Care Center	940,811	8.48
Unrefrigerated Warehouse-No Rail	4,856,250	8.48

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Government Office Building	18.6	—
Parking Lot	0.00	—
Automobile Care Center	38.2	—
Unrefrigerated Warehouse-No Rail	19.7	—

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
Government Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Automobile Care Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Automobile Care Center	Supermarket refrigeration and condensing units	R-404A	3,922	26.5	16.5	16.5	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor
Emergency Generator	Diesel	1.00	0.29	104	804	0.73

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

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	6.32	annual days of extreme heat
Extreme Precipitation	15.6	annual days with precipitation above 20 mm

Sea Level Rise	0.00	meters of inundation depth
Wildfire	5.54	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 (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth 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 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
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	3.12
AQ-PM	5.05
AQ-DPM	17.7
Drinking Water	17.6
Lead Risk Housing	37.2
Pesticides	0.00
Toxic Releases	17.4

Traffic	26.1
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	59.6
Haz Waste Facilities/Generators	51.7
Impaired Water Bodies	51.2
Solid Waste	0.00
Sensitive Population	—
Asthma	76.4
Cardio-vascular	82.8
Low Birth Weights	55.6
Socioeconomic Factor Indicators	—
Education	60.9
Housing	47.6
Linguistic	21.4
Poverty	82.4
Unemployment	78.3

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	26.80610805
Employed	8.828435776
Median HI	21.08302323
Education	—
Bachelor's or higher	31.19466188

High school enrollment	100
Preschool enrollment	1.873476197
Transportation	—
Auto Access	34.87745413
Active commuting	46.24663159
Social	—
2-parent households	38.59874246
Voting	57.08969588
Neighborhood	—
Alcohol availability	47.18336969
Park access	9.829334018
Retail density	27.20390094
Supermarket access	29.14153728
Tree canopy	96.45836007
Housing	—
Homeownership	54.95957911
Housing habitability	43.60323367
Low-inc homeowner severe housing cost burden	32.65751315
Low-inc renter severe housing cost burden	15.86038753
Uncrowded housing	62.10701912
Health Outcomes	—
Insured adults	34.83895804
Arthritis	0.0
Asthma ER Admissions	23.5
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0

Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	8.0
Cognitively Disabled	14.5
Physically Disabled	8.8
Heart Attack ER Admissions	45.9
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	76.8
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	57.0
Children	76.4
Elderly	25.4
English Speaking	67.0
Foreign-born	17.3
Outdoor Workers	36.8
Climate Change Adaptive Capacity	—
Impervious Surface Cover	83.9

Traffic Density	76.0
Traffic Access	0.0
Other Indices	—
Hardship	61.4
Other Decision Support	—
2016 Voting	47.2

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	31.0
Healthy Places Index Score for Project Location (b)	25.0
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
Construction: Construction Phases	Site is undeveloped.

Land Use	Correct SF for office
Construction: Paving	More accurate

Appendix C

Biological Resources Assessment

Biological Resources Assessment

City of Eureka

Assessor's Parcel Numbers:
019-341-007 and 019-341-008
Eureka, California

Prepared for:

City of Eureka

September 2023
Revision 1

023101

Phone: (707) 822-5785 **Email:** info@shn-engr.com
Web: shn-engr.com • 1062 G Street, Ste. I, Arcata, CA 95521-5800

Reference: 023101

August 8, 2023/September 12, 2023 Revised

City of Eureka
Brian Gerving, Director of Public Works
531 K Street
Eureka, California 95501

Subject: Biological Resources Assessment, Eureka, California

Dear Brian Gerving:

SHN has prepared this Biological Resources Assessment for the proposed Operation Complex project near the Ocean View Cemetery. This report addresses environmentally sensitive habitat areas and special-status botanical and animal species present or potentially occurring within the study area, evaluates project-related impacts, and recommends appropriate avoidance and minimization measures.

Fieldwork was conducted on June 5 and July 14, 2023, which included the bloom period for special-status plant species potentially occurring onsite. No special-status botanical species or sensitive vegetation communities were observed within the study area. One species of special concern (Rufous hummingbird [*Selasphorus rufus*]) was observed within the study area. Recommendations for reducing impacts to this species are included in the Recommendations section of the report.

The project will not have significant effects on the natural resources within the area if the avoidance measures and recommendations contained within this Biological Resources Assessment are implemented.

Please email me at jsaler@shn-engr.com or call me at 707-822-5785 if you have any comments or concerns.

Sincerely,

SHN

Joseph Saler
Senior Ecologist

JLS:cet
Enclosure: Biological Resources Assessment

Biological Resources Assessment

City of Eureka
Assessor's Parcel Numbers: 019-341-007 and 019-341-008
Eureka, California

Prepared for:

City of Eureka

Prepared by:

1062 G St., Suite I
Arcata, CA 95521-5800
707-822-5785

September 2023
Revision 1

QA/QC:JLS
Reference: 023101

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Abbreviations and Acronyms

Terms of Measure

°C	degrees Celsius
Cm	centimeters
°F	degrees Fahrenheit
ft	feet
km	kilometers
ppt	parts per thousand

Additional Terms

APN	Assessor's Parcel Number
BIOS	Biogeographical Information and Observation System
BMP	best management practice
C	candidate species status
Cal-IPC	California Invasive Plant Council
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CNRA	California National Resources Agency
CRPR	California Rare Plant Rank
CT	candidate threatened species status
CWA	Clean Water Act
D	delisted species status
DPS	Distinct population segment/species status
E	endangered species status
EPA	United States Environmental Protection Agency
ESU	evolutionarily significant unit/species status
FESA	Federal Endangered Species Act
FP	fully protected species status
G	global rank
G1/S1	critically imperiled species heritage rank
G2/S2	imperiled species heritage rank
G3/S3	vulnerable species heritage rank
G4/S4	apparently secure species heritage rank
G5/S5	secure species heritage rank
IPaC	Information for Planning and Conservation
MBTA	Migratory Bird Treaty Act
NCCP	Natural Community Conservation Planning
NCDC	National Climatic Data Center
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic & Atmospheric Administration
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
PT	proposed threatened species status
RWQCB	Regional Water Quality Control Board
S	state rank
SAA	Streambed Alteration Agreement
SSC	species of special concern
SWRCB	State Water Resources Control Board
T	threatened species status
USACE	United States Army Corps of Engineers

Abbreviations and Acronyms, Continued

USC	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VegCAMP	Vegetation Classification and Mapping Program
WDR	Waste Discharge Requirement
WL	watch list species status

1.0 Introduction

SHN has conducted literature review, seasonally appropriate surveys, and habitat assessments to determine biological resources present in relation to the proposed City of Eureka project near Ocean View Cemetery in Eureka, California. This Biological Resources Assessment has been prepared to evaluate the potential for special-status biological resources within the study area, potential impacts from project implementation, applicable existing regulations for the protection of sensitive biological resources, and recommended avoidance, minimization, and mitigation measures.

1.1 Project Location and Site Description

The study area (project site) includes the entirety of two parcels (Assessor's Parcel Numbers [APNs] 019-341-007 and 019-341-008 within the City of Eureka (Figure 1) The study area has an average elevation of 35 feet above sea level. The site is situated adjacent to the Oceanview cemetery east of Highway 101 in south Eureka (Figure 1). The site is within the U.S. Geological Survey (USGS) Eureka 7.5-minute quadrangle, near the center of Section 33, Township 5 North, Range 1 West, Humboldt Baseline and Meridian with a center point at latitude 40.769667° and longitude -124.188278° (Google Earth, 2023). The study area covers 5.4 acres, which are currently vacant and primarily consist of managed grasses with several patches of trees and shrubs around the perimeter of the parcels (Appendix 1, Photos 1 and 2).

1.2 Project Description

The proposed Operations Complex will serve at the centralized public works facility to store and repair fleet vehicles, public works equipment, tools, and materials. The site will house 66 full-time employees with offices, warehouse, shop buildings, parking, and vehicle spaces. The facility will include a decant facility for dewatering soil, bulk material bins, a vehicle wash station, solid waste/recyclable material storage, backup generator, and communications tower. The proposed facilities will provide reliable City services in the event of an emergency.

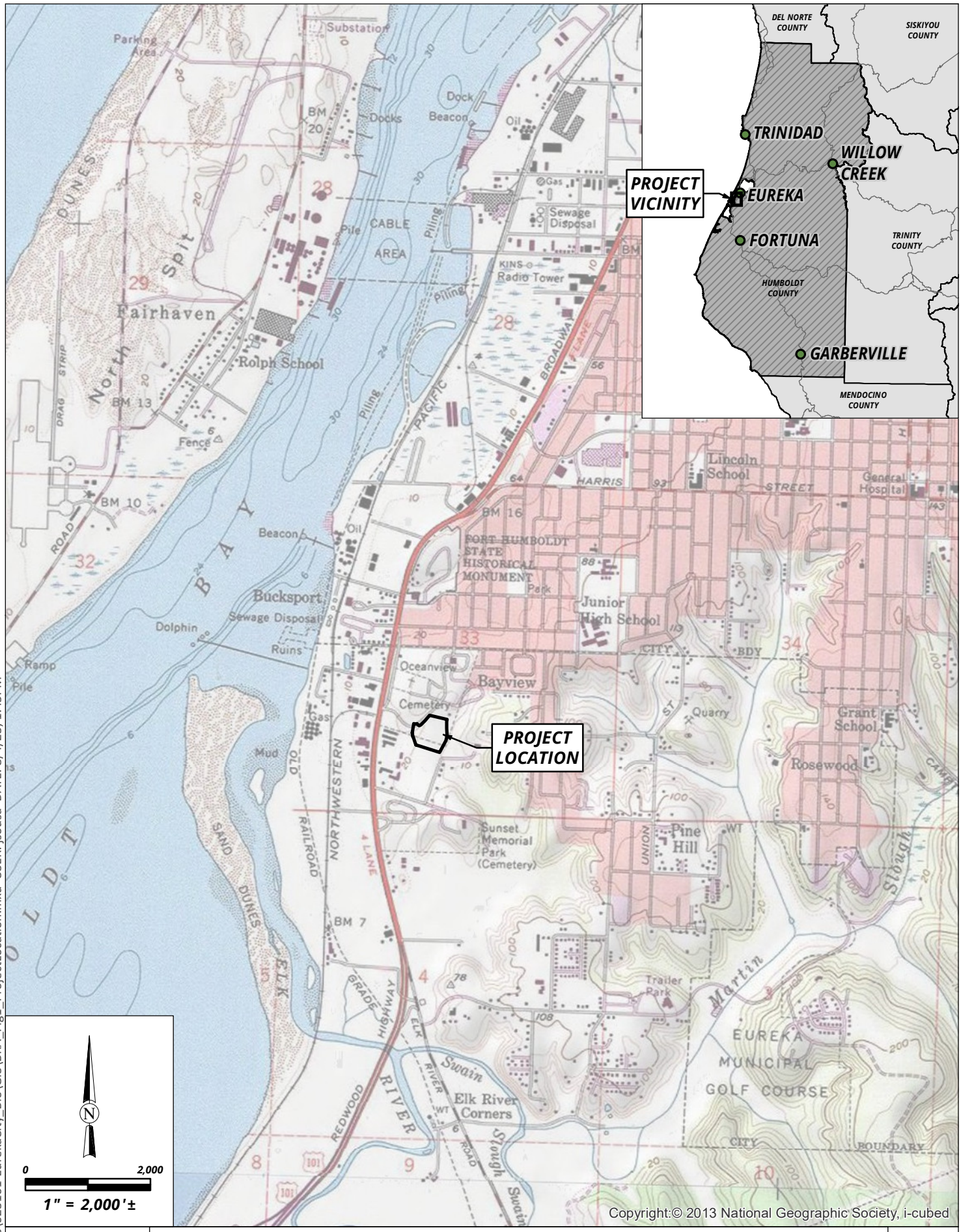
2.0 Methods

2.1 Literature Review

This Biological Resources Assessment includes a review of pertinent literature on habitat characteristics of the site, and a review of information related to special-status plant and animal species that could potentially use the described habitats.

The findings for this report are the result of several sources, including a review of existing literature regarding sensitive resources that have the potential to occur within the site. Resources for this determination included:

- California Natural Diversity Database (CNDDB) query for the Eureka and surrounding USGS 7.5-minute topographic quadrangles (Tyee City, Arcata North, Arcata South, Cannibal Island, Fields Landing, and McWhinney Creek; California Department of Fish and Wildlife [CDFW], 2023a; Appendix 2)
- Biogeographical Information and Observation System (BIOS; CDFW, 2023b)
- Electronic Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society, [CNPS], 2023) queried for a list of all plant species reported for the Eureka and surrounding USGS 7.5-minute topographic quadrangles



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Project Location

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Figure 1

- Special Vascular Plants, Bryophytes, and Lichens of California List (CDFW, 2023c)
- Special Animals of California List (CDFW, 2023d)
- United States Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) was queried for threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of the proposed project and/or may be affected by the proposed project (USFWS, 2023a; Appendix 3).
- United States Fish and Wildlife Service (USFWS) Critical Habitat Portal (USFWS, 2023b).
- National Wetlands Inventory (USFWS, 2023c).

An evaluation was conducted for the potential presence or absence of habitat for special-status plant and animal species. CNDDB RareFind (CDFW, 2023a), BIOS (CDFW, 2023b), and CNPS (CNPS, 2023) searches were completed for the 7.5-minute USGS Eureka quadrangle and all adjacent quadrangles. The aforementioned databases were queried for historical and existing occurrences of State and federally listed threatened, endangered, and candidate plant and animal species; species proposed for listing; and all plant species listed by the CNPS (Online 2023 inventory). In addition, a list of all federally listed species that are known to occur or may occur in the vicinity was obtained from the USFWS IPaC database (USFWS, 2023a).

Each species was evaluated for its potential to occur in the study area according to the following criteria:

- None. Species listed as having "none" are those species for which:
  - there is no suitable habitat present in the study area (that is, habitats in the study area are unsuitable for the species requirements [for example, elevation, hydrology, plant community, disturbance regime, etc.]).
- Low. Species listed as having a "low" potential to occur in the study area are those species for which:
  - there is no known record of occurrence in the vicinity, and
  - there is marginal or very limited suitable habitat present within the study area.
- Moderate. Species listed as having a "moderate" potential to occur in the study area are those species for which:
  - there are known records of occurrence in the vicinity, and
  - there is suitable habitat present in the study area.
- High. Species listed as having a "high" potential to occur in the study area are those species for which:
  - there are known records of occurrence in the vicinity (there are many records and/or records in close proximity), and
  - there is highly suitable habitat present in the study area.
- Present. Species listed as "present" in the study area are those species for which:
  - the species was observed in the study area.

From the database queries, a list of species potentially occurring within the study area was compiled. Table 1 in Appendix 2 includes all plant species reported from the queries, their preferred habitat, and if there is suitable habitat present within the study area for the species. Table 2 in Appendix 2 includes all animal species reported from the queries, their preferred habitat, and if there is suitable habitat present within the study area for the species. The potential for occurrence of those species included on the list were then evaluated based on the habitat requirements of each species relative to the conditions observed during the field surveys.

2.2 Field Observations and Studies

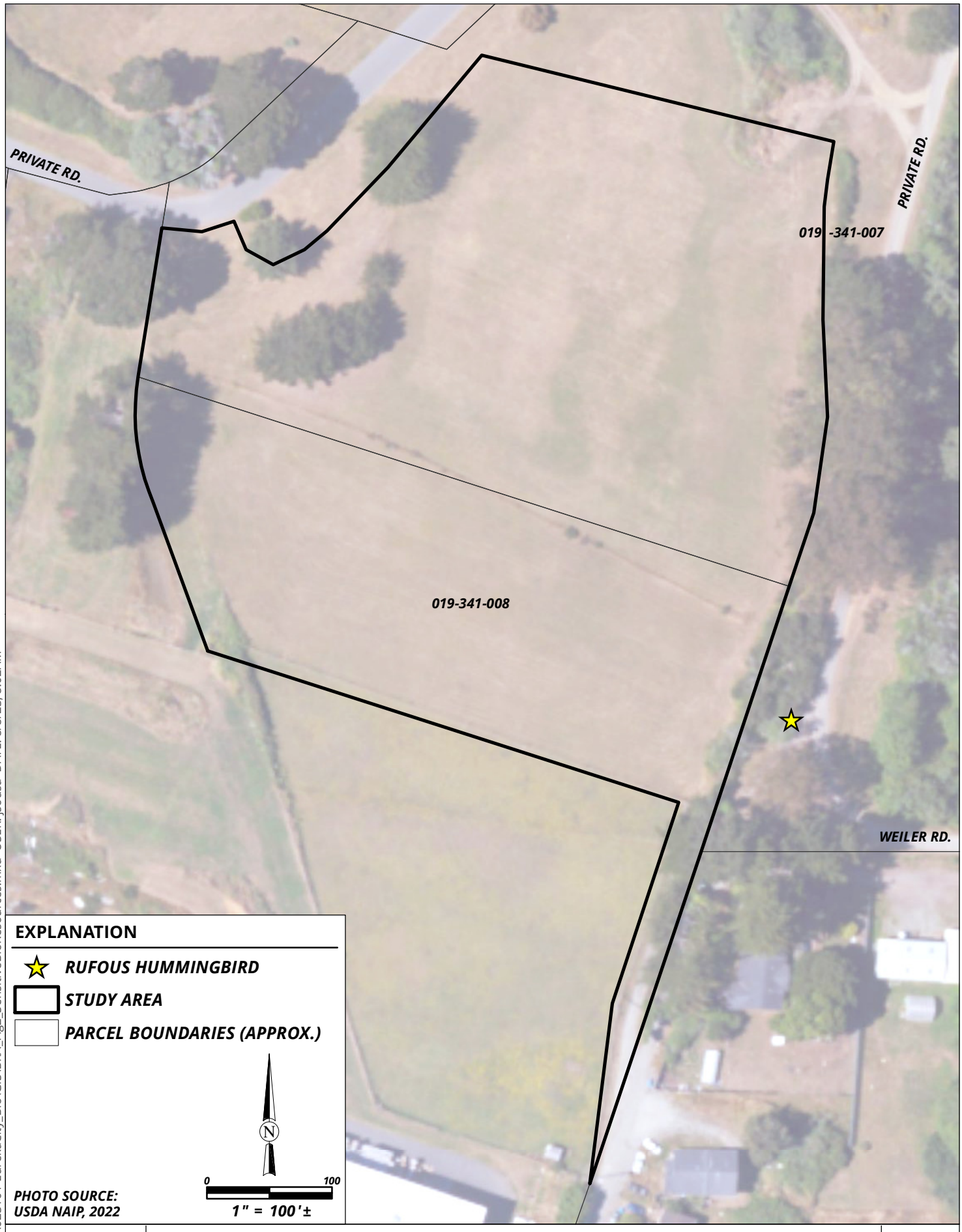
SHN's biologists conducted site visits on June 5 and July 14, 2023, for biological surveys and habitat assessments for a total of six hours of surveying. Surveys were conducted according to CDFW protocol as outlined in *Protocols for Surveying and Evaluating Impacts to Special-status Native Plant Populations and Sensitive Natural Communities* (CDFW, 2018a). Surveys were conducted with an attempt to identify all species present within the project-related study area, including possible species of special concern. In addition to surveying for target species, a list of all botanical and animal species encountered was compiled and is included in Appendix 4 (Tables 1 and 2). Plants were identified to the lowest taxonomic level possible to distinguish special-status species from others. Nomenclature for special-status animals conforms to CDFW guidelines (CDFW, 2023a, 2023d). Plant community names conform to *A Manual of California Vegetation, Second Edition* (Sawyer et al., 2009) and subsequent online updates (CNPS, 2023) as well as the VegCAMP (Vegetation Classification and Mapping Program) Natural Communities List (CDFW, 2018b). Botanical nomenclature of species in this assessment follows the *Jepson Manual* (Baldwin et al., 2012) and subsequent online revisions. The June and July site visits were conducted at seasonally-appropriate times to best detect mid- and late-blooming special-status plant species, such as those with moderate or high potential to occur within the study area, special-status animals, and a number of nesting bird species; however, an early season survey was not conducted. Analysis of the habitat and vegetation communities present within the study area during the site visits indicates that suitable habitat for several special-status plant and animal species exists onsite. The areas most likely to support special-status species include area with native vegetation, wet areas, and shrubby, early successional vegetation. All portions of the study area were investigated for the presence of special-status species and habitat availability for special-status species. Sensitive natural communities and special-status species were mapped as part of this report (Figure 2) and will be discussed further.

Photographs from the site visits are included in Appendix 1.

3.0 Environmental Setting

The study area is situated between approximately 29- to 41-foot elevation above mean sea level, with the highest elevations represented at the northeast portion of the project site and the lowest elevation at the southwest portion of the project site. The geology at the site is mapped as marine and non-marine sedimentary rocks (geologic map unit Qoa), which consists of alluvium, lake, playa, and terrace deposits–unconsolidated and semi-consolidated. Proximity to the coast indicates these are likely uplifted marine deposits (California Department of Conservation [CDC], 2023).

The underlying soils in the study area have the United States Department of Agriculture (USDA)-National Resources Conservation Service (NRCS) soil map unit designation 212—Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes (Appendix 5; USDA-NRCS, 2023). A review of historical photos shows that this site has been a managed field since at least 1990 (Google Earth, 2023).



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City of Eureka
Biological Resources Assessment, APN 019-341-007 & -008
Eureka, California

Sensitive Biological Resources

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Figure 2

The average 30-year precipitation data for this area is 40.33 inches (National Oceanic and Atmospheric Administration [NOAA] Eureka Station, 2023) with the majority of precipitation occurring between October and April. Temperatures in Eureka range from an average low of 41 degrees Fahrenheit (°F) in the winter to an average high of 64°F in the summer; extremes in temperatures are relatively uncommon due to the regional maritime influence.

3.1 Vegetation

Vegetation composition in the study area has the characteristically low diversity typically found in the suburban wildland interface in locations with persistent management and history of disturbance. Consequently, vegetation within the study area is composed primarily of non-native and invasive plant species with small patches of native plant dominance (Appendix 1, Photos 1-3 and 5-7). The study area is surrounded by Oceanview Cemetery, commercial businesses, and urban development to the north, west, and south, with some semi-natural habitat conditions to the east between the site and suburban development. The open field is dominated by non-native and invasive grasses such as sweet vernal grass (*Anthoxanthum odoratum*), hairy cat's ear (*Hypochaeris radicata*), sheep sorrel (*Rumex acetosella*), hairy oatgrass (*Rytidosperma penicillatum*), large quaking grass (*Briza maxima*), and creeping bentgrass (*Agrostis stolonifera*), among others. Within the non-native-dominated areas exist patches of native herbaceous species dominance including wild strawberry (*Fragaria vesca*; Appendix 1, Photo 6), west coast Canada goldenrod (*Solidago elongate*; Appendix 1, Photo 7), California oatgrass (*Danthonia californica*), and bracken fern (*Pteridium aquilinum* var. *pubescens*). Trees in the area are primarily non-native species that were likely planted, including Monterey pine (*Pinus radiata*), blue gum eucalyptus (*Eucalyptus globulus*), and Monterey cypress (*Hesperocyparis macrocarpa*). Shrub-dominated areas along the eastern boundary of the study area included a mix of native and non-native species such as coyote bush (*Baccharis pilularis ssp. consanguinea*), Scotch broom (*Cytisus scoparius*), and California blackberry (*Rubus ursinus*; Appendix 1, Photos 1 and 3).

Though the eastern edge of the study area contains relictual forest conditions (Appendix 1, Photo 3), many of the native plant species observed within the study area are considered characteristic of coastal prairie and coastal sand dune habitats. Given the study area's proximity to the shoreline and to the mouth of the Elk River, it is likely these native plants are relictual populations, or more recent introductions from those habitats, and have been able to persist due to the consistent mowing and maintenance of the non-native grassland. While these species exist within the study area, none of the native-dominated patches meet the definition for a sensitive vegetation community. Additional descriptions of the vegetation composition is included in Section 5.3 Special-status Natural Communities and Habitats.

A complete list of plants observed within the study area is compiled in Appendix 4, Table 1.

3.2 Wildlife Habitats

Common wildlife species expected within the study area are those typically associated with grasslands, urban settings, and forest openings of northwestern California. Although the project site is immediately adjacent to some areas of dense trees and shrubs that may provide food and shelter for animals, the site experiences frequent human disturbance and is surrounded by urban development and is in close proximity to the U.S. Highway 101 corridor. The dense vegetative cover along the eastern boundary provides the highest quality wildlife habitat within the study area, with connectivity to the surrounding forested area. Animal species observed during fieldwork are presented in Appendix 4, Table 2. Other

wildlife species are likely to inhabit the surrounding area, and it is expected that there are many other bird, mammal, and amphibian species that might use the study area, if only transitionally.

3.3 Wildlife Movement Corridors

Wildlife movement includes seasonal migration, inter-population movement (genetic flow), and small, daily travel pathways within an animal's territory. Although small travel pathways usually facilitate movement for daily home range activities (such as, foraging or escape from predators), they also provide connection between outlying populations and the main corridor, permitting an increase in genetic flow among populations.

Where patches of habitat are fragmented, the movement between wildlife populations is facilitated through habitat linkages, migration corridors, and movement corridors. Depending on the condition of the corridor, genetic flow between populations may be high in frequency, thus allowing high genetic diversity within the population, or may be low in frequency. Low-frequency genetic flow may potentially lead to complete isolation and, if pressures are strong, potential extinction (McCullough, 1996; Whittaker, 1998).

Heavy vegetative cover along the eastern boundary of the study area provides an adequate wildlife movement corridor past the project area (Figure 2; Appendix 1, Photo 3). The project site is mostly open with very little cover and does not provide movement corridor habitat for terrestrial animals. However, suitable resting, nesting, and foraging habitat is available for migratory birds.

3.4 Offsite Conditions

Offsite conditions include commercial business, residential development, and vegetated drainages within mixed conifer and deciduous woodland, surrounded by urban development, including major city streets and U.S. Highway 101 (Figure 1).

4.0 Regulatory Setting

Regulatory authority over biological resources is shared by federal, State, and local authorities under a variety of legislative acts. The following section summarizes the federal, State, and local regulations for special-status species, jurisdictional Waters of the U.S. and State of California, and other sensitive biological resources. This section provides a listing and overview of these federal, State and local laws; only select regulations will be applicable to this project.

4.1 Federal Laws

4.1.1 Clean Water Act Sections 404 and 401

Under Section 404 (33 U.S. Code (USC) 1344) of the Clean Water Act (CWA, United States Environmental Protection Agency [EPA], 2002), as amended, the U.S. Army Corps of Engineers (USACE) retains primary responsibility for permits to discharge dredged or fill material into Waters of the U.S (EPA, 1948). All discharges of dredged or fill material into jurisdictional Waters of the U.S. that result in permanent or temporary losses of Waters of the U.S. are regulated by the USACE. A permit from the USACE must be obtained before placing fill or grading in wetlands or other Waters of the U.S., unless the activity is exempt from CWA Section 404 regulation (for example, certain farming and forestry activities).

The USACE defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE Environmental Laboratory, 2008). In other words, the USACE defines wetlands by the presence of all three wetland indicators: hydrophytic vegetation, hydric soils, and wetlands hydrology.

Waters of the U.S. are defined at 33 Code of Federal Regulations (CFR) Part 328. They include traditional navigable waters; relatively permanent, non-navigable tributaries of traditional navigable waters, and certain wetlands. Following recent court cases, the EPA and USACE published a memorandum entitled "Clean Water Act Jurisdiction" (USACE/EPA, 2008) to guide the determination of jurisdiction over Waters of the U.S., especially for wetlands. The applicability of Section 404 permitting over discharges to wetlands is therefore, a two-step process: 1) determining the areas that are wetlands, and 2) where a wetland is present, assessing the wetland's connection to traditional navigable waters and non-navigable tributaries to determine whether the wetland is jurisdictional under the CWA. A wetland is considered jurisdictional if it meets certain specified criteria.

The USACE is required to consult with the USFWS and/or National Marine Fisheries Service (NMFS) under Section 7 of the Federal Endangered Species Act (FESA) if the action subject to CWA permitting could result in "Take" of federally listed species or an adverse effect to designated critical habitat (USACE/EPA, 1973). The project is within the jurisdiction of the Sacramento District of the USACE.

Section 401 of the CWA (33 USC 1341; EPA, 1977) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification from the state in which the discharge originates or would originate, or if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs). The project is within the jurisdiction of the North Coast RWQCB.

4.1.2 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (16 USC Sections 661-667e, March 10, 1934, as amended 1936, 1946, 1947, 1948, 1949, 1958, 1965, 1978, and 1995; USFWS, 1934) requires that whenever waters or channel of a stream or other body of water are proposed or authorized to be modified by a public or private agency under a federal license or permit, the federal agency must first consult with the USFWS and/or NMFS and with the head of the agency exercising administration over the wildlife resources of the state where construction will occur (in this case the CDFW), with a view to conservation of birds, fish, mammals, and all other classes of wild animals and all types of aquatic and land vegetation upon which wildlife is dependent.

If direct permanent impacts will occur to Waters of the U.S. from a proposed project, then a permit from USACE under CWA Section 404 is required for the construction of the proposed project. USACE is required to consult with USFWS and/or NMFS as appropriate regarding potential impacts to federally-listed species under FESA. Such action may prompt consultation with CDFW, which would review the project pursuant to California Endangered Species Act (CESA) and issue a consistency letter with USFWS and/or NMFS, if required.

4.1.3 Federal Endangered Species Act

The United States Congress passed the FESA in 1973 to protect species that are endangered or threatened with extinction. The FESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend and within which they live. The USFWS and the NMFS are the designated federal agencies responsible for administering the FESA.

The FESA prohibits the "Take" of endangered or threatened wildlife species. A "Take" is defined as harassing, harming (including significantly modifying or degrading habitat), pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species, or any attempt to engage in such conduct (16 USC 1531, 50 CFR 17.3; USFWS, 1973). An activity can be defined as a "Take" even if it is unintentional or accidental. Taking can result in civil or criminal penalties. Activities that could result in "Take" of a federally-listed species require an incidental "Take" authorization resulting from FESA Section 7 consultation or FESA Section 10 consultation (USACE/EPA, 1973). Plants are legally protected under the FESA only if "Take" occurs on federal land or from federal actions, such as, issuing a wetland fill permit.

A federal endangered species is one that is considered in danger of becoming extinct throughout all, or a significant portion, of its range. A federal threatened species is one that is likely to become endangered in the foreseeable future. The USFWS also maintains a list of species proposed for listing as threatened or endangered. Proposed species are those for which a proposed rule to list as endangered or threatened has been published in the Federal Register. In addition to endangered, threatened, and proposed species, the USFWS maintains a list of candidate species. Candidate species are those for which the USFWS has on file sufficient information to support issuance of a proposed listing rule.

Pursuant to the requirements of the FESA, an agency reviewing a proposed project within its jurisdiction must determine whether any federally-listed endangered or threatened species may be present in the study area and determine whether the proposed project will have a potentially significant impact on such a species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat designated or proposed to be designated for such species (16 USC 1536[3], [4]; USFWS, 1973). Project-related impacts to species on the FESA endangered or threatened list would be considered significant and thus, would require mitigation.

4.1.4 Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in CFR Part 10, including feather or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21; USFWS, 1918). The MBTA also prohibits disturbance and harassment of nesting migratory birds at any time during their breeding season. The USFWS is responsible for enforcing the MBTA (16 USC 703; USFWS, 1918). The migratory bird nesting season is generally considered to be between March 15 and August 15 within the study region.

4.2 State Laws

4.2.1 California Coastal Act

This project is located outside of the jurisdiction of the California Coastal Act.

4.2.2 Porter-Cologne Water Quality Control Act

The State and RWQCB also maintain independent regulatory authority over the placement of waste, including fill, into Waters of the State under the Porter-Cologne Water Quality Control Act (SWRCB, 1969). Waters of the State are defined by the Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The SWRCB protects all waters in its regulatory scope but has special responsibility for isolated wetlands and headwaters. These water bodies might not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCBs under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require an USACE 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 Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to Waters of the State, the RWQCBs have the option to regulate such activities under their state authority in the form of waste discharge requirements (WDRs) or certification of WDRs.

4.2.3 California Endangered Species Act

The State of California enacted the CESA in 1984. The CESA is similar to the FESA but pertains to state-listed endangered and threatened species. Under the CESA, the CDFW has the responsibility for maintaining a list of threatened and endangered species designated under state law (California Fish and Game Code [CFGC] 2070; CDFW, 1984). Section 2080 of the CFGC prohibits "Take" of any species that the commission determines to be an endangered or threatened species. "Take" is defined in Section 86 of the CFGC as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill."

The State and federal lists of threatened and endangered species are generally similar; however, a species present on one list may be absent from the other. CESA regulations are also somewhat different from the FESA in that the State regulations included threatened, endangered, and candidate plants on non-federal lands within the definition of "Take." CESA allows for "Take" incidental to otherwise lawful development projects.

Pursuant to the requirements of the CESA, an agency reviewing a proposed project within its jurisdiction must determine whether any state-listed endangered or threatened species may be present in the study area and determine whether the proposed project will have a potentially significant impact on such species. Project-related impacts to species on the CESA endangered or threatened list (or, in addition, designated by the CDFW as a "Species of Special Concern," which is a level below threatened or endangered status) would be considered significant and would require mitigation.

4.2.4 California Environmental Quality Act

California Environmental Quality Act (CEQA) Guidelines Sections 15125(c) and 15380(d) provide that a species not listed on the federal or State list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria (California Natural Resources Agency [CNRA], 1970). Thus, CEQA provides the ability to protect a species from potential project impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

The CNPS maintains a list of plant species native to California whose populations that are significantly reduced from historical levels, occur in limited distribution, or are otherwise rare or threatened with

extinction. This information is published in the Inventory of Rare and Endangered Plants of California (CNPS, 2020). Taxa with a California Rare Plant Rank (CRPR) of 1A, 1B, 2A, 2B, and 3 in the CNPS inventory consist of plants that meet the definitions of the CESA of the CFGC, are eligible for state listing, and meet the definition of Rare or Endangered under CEQA Guidelines Sections 15125(c) and 15380(d). Some taxa with a CRPR 4 may meet the definitions of the CESA of the CFGC. CRPR 4 populations may qualify for consideration under CEQA if they are peripheral or disjunct populations; represent the type locality of the species; or exhibit unusual morphology and/or occur on unusual substrates.

Additionally, CDFW maintains lists of special animals and plants. These lists include a species conservation ranking status from multiple sources, including FESA, CESA, and federal departments with unique jurisdictions, CNPS, and other non-governmental organizations. Based on these sources, CDFW assigns a heritage rank to each species according to their degree of imperilment (as measured by rarity, trends, and threats). These ranks follow NatureServe's Heritage Methodology, in which all species are listed with a G (global) and S (state) rank (NatureServe, 2023). Species with state ranks of S1-S3 are also considered highly imperiled.

CEQA Guidelines checklist IV(b) calls for the consideration of riparian habitats and sensitive natural communities. Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. Sensitive natural communities are usually identified in local or regional plans, policies, or regulations, or by CDFW (that is, the CNDDB and VegCAMP programs; CDFW, 2018b) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under CEQA (California Code of Regulations [CCR]: Title 14, Div. 6, Chap. 3, Appendix G; CNRA, 1970).

Although sensitive natural communities do not (at present) have legal protection, CEQA calls for an assessment of whether any such resources would be affected, and requires a finding of significance if there will be substantial losses. High-quality occurrences of natural communities with heritage ranks of three or lower are considered by CDFW to be significant resources and fall under the CEQA Guidelines for addressing impacts. Local planning documents (such as general plans) often identify these resources as well. Avoidance, minimizations, or mitigation measures should be implemented if project-affected stands of rare vegetation types or natural communities are considered high-quality occurrences of the given community.

As a trustee agency under CEQA, CDFW reviews potential project impacts to biological resources, including wetlands. In accordance with the CEQA thresholds of significance for biological resources, areas that meet the state criteria of wetlands and could be impacted by a project must be analyzed. Pursuant to CFGC Section 2785, CDFW defines wet areas as "lands which may be covered periodically or permanently with shallow water and which include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, fens, and vernal pools" (CDFW, 1998).

4.2.5 California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species are subject to jurisdiction by the CDFW under Sections 1600-1616 of the CFGC (CDFW, 1994). Any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or

lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake, generally requires a Streambed Alteration Agreement (SAA).

The term "stream," which includes creeks and rivers, is defined in the CCR as follows: "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." This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation (14 CCR 1.72; CNRA, 1987).

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. Riparian is defined as "on, or pertaining to, the banks of a stream"; therefore, 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" (CDFW, 1994). Removal of riparian vegetation also requires an SAA from the CDFW.

4.2.6 California Fish and Game Code Sections 3503 and 3513

According to Section 3503 of the CFGC it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows [*Passer domesticus*] and European starlings [*Sturnus vulgaris*]). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the "Take" or possession of any migratory non-game bird (CDFW, 1998). Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "Take" by the CDFW.

4.2.7 Fully Protected Species and Species of Special Concern

The classification of "fully protected" was the CDFW's initial effort to identify and provide additional protection to those animals that were rare or faced with possible extinction. Lists were created for fish, amphibians and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The CFGC sections (fish at Sec. 5515, amphibian and reptiles at Sec. 5050, birds at Sec. 3511, and mammals at Sec. 4700) dealing with "fully protected" species states that these species "…may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species," (CDFW, 1998) although "Take" may be authorized for necessary scientific research. This language makes the "fully protected" designation the strongest and most restrictive regarding the "Take" of these species. In 2003, the code sections dealing with fully protected species were amended to allow the CDFW to authorize "Take" resulting from recovery activities for state-listed species.

Species of special concern (SSC) are broadly defined as animals not listed under the CESA, but that are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist. This designation is intended to result in special consideration for these animals by the CDFW, land managers, consulting biologists, and others, and is intended to focus attention on the species to help avert the need for costly listing under CESA and cumbersome recovery efforts that might ultimately be required. This designation is also intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although the SSC designation provides no special legal status, they are given special consideration under CEQA during project review.

Table 2 in Appendix 2 includes potentially-occurring federal and State-listed species and SSC animals that may occur in the study area.

4.2.8 Native Plant Protection Act of 1973

The Native Plant Protection Act (NPPA) of 1973 (Sec.1900-1913 of the CFGC; CDFW, 1998) includes provisions that prohibit the taking of endangered or rare native plants from the wild and a salvage requirement for landowners. The CDFW administers the NPPA and generally regards as "rare" many plant species included on Lists 1A, 1B, 2A, 2B, 3, and 4 of the CNPS Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2023).

Table 1 in Appendix 2 includes potentially-occurring endangered or rare native plants that may occur in the study area (including CNPS lists).

4.2.9 Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) Act of 1991 is an effort by the State of California, and numerous private and public partners that is broader in its orientation and objectives than the CESA and FESA (refer to discussions above; CDFW, 1991). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP Act seeks to anticipate and prevent the controversies and gridlock caused by species listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

4.3 City of Eureka General Plan and Municipal Code

The City of Eureka General Plan (2018) and Municipal Code (2020) include policies and standards regarding the protection of open spaces, forests, habitat resources, and invasive species. Policies related to biological resources are provided for the purpose of, "Protection of sensitive biological resources on a sustainable basis to generate long-term public, economic, and environmental benefits" (City of Eureka, 2018). Below are several policies and standards from the General Plan and Municipal Code that are relevant to the proposed project (City of Eureka, 2018 and 2020).

- General Plan Policy NR-2.5 requires development in or adjacent to sensitive species habitats that may contain special-status species to be compatible with the long-term sustainability of the habitat, and (in discretionary projects) be conditioned to prevent significant habitat degradation or harm to rare, threatened, or endangered species.
- General Plan Policy NR-2.6 requires reasonably-sized buffers between sensitive habitat and adjacent urban uses. Buffers are to be recommended by a qualified professional ecologist.
- General Plan Policy NR-2.7 encourages the preservation of trees and native vegetation, promotes native plants, and prohibits the use of "highly invasive plants."
- Municipal Code Section 155.238.050 prohibits planting species with a "High" rating in the California Invasive Plant Council's (Cal-IPC) inventory of invasive plants.
- Municipal Code Section 150.200 requires review and approval of an Erosion Control Permit and Best Management Practices (BMP) Plan prior to the issuance of a building permit for a development project.

5.0 Results - Special-status Biological Resources

5.1 Special-status Botanical Species

Based on a review for special-status botanical species, 49 special-status botanical species have been reported from the region consisting of the Eureka quadrangle and the surrounding quadrangles (Appendix 2, Table 1). Of the special-status botanical species reported for the region, 40 botanical species are considered to have low or no potential to occur within the study area. Many of the species with low or no potential of occurrence are coastal strand or wetland species dependent on conditions found within close proximity to the active shoreline or within wetlands. Nine species have a moderate or high potential of occurring within the study area; species with a moderate or high potential for occurrence within the study area are listed below.

- Pacific gilia (*Gilia capitata* ssp. *pacifica*)
- perennial goldfields (*Lasthenia californica* ssp. *macrantha*)
- seaside pea (*Lathyrus japonicus*)
- Howell's montia (*Montia howellii*)
- Wolf's evening primrose (*Oenothera wolfii*)
- maple-leaved checkerbloom (*Sidalcea malachroides*)
- Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*)
- coast checkerbloom (*Sidalcea oregana* ssp. *eximia*)
- Scouler's catchfly (*Silene scouleri* ssp. *scouleri*)

The CNDDB has polygons for the marsh pea (*Lathyrus palustris*) and the western lily (*Lilium occidentale*) overlaying the study area. These polygons likely reflect the occurrence of suitable habitat nearby (Elk River estuary) or historical occurrences that no longer exist. No suitable habitat for these species exists within the study area, as such these species are anticipated to have a low potential of occurrence within the study area.

A total of 80 botanical species were observed within the study area and are recorded in Appendix 4, Table 1. Of the 80 botanical species, only 34 percent are native species, reflecting the regular maintenance, history of disturbance, and proximity to urban and suburban development. Mid- and late-season surveys of the study area did not locate any special-status botanical species. Marginal habitat exists within the study area for a number of the special-status botanical species documented as potentially occurring within the study area, including grassland, and degraded and managed coastal prairie. No special-status botanical species were observed, likely as a result of the marginal habitat conditions, regular maintenance, history of disturbance, and high cover by non-native species, or other reasons. The findings in this Assessment represent conditions at the time of the surveys and it is possible that false negative surveys for rare plant species could occur. This Assessment documents the 2023 field investigations, and the findings presented here are based on best professional judgment.

5.2 Special-status Animal Species

Based on a review of special-status animal species, 62 special-status animal species have been reported with the potential to occur in the project region consisting of the Eureka quadrangle and the surrounding quadrangles (Appendix 2, Table 2). Of the special-status animal species reported as potentially occurring in the region, 54 animal species are considered to have a no or low potential to occur at the project site and 7 species have a moderate to high potential to occur. Species with a moderate or high potential for occurrence within the study area are described below. One additional

species, Rufous hummingbird (*Selasphorus rufus*) was not reported on the CNDDB query list, however, it was observed during a site visit and is on the California Special Animals List (CDFW, 2023d) and therefore is included in the discussion below.

5.2.1 Birds

The Cooper's Hawk (*Accipiter cooperii*) occupies woodlands, open and interrupted and marginal habitats. Nests are primarily in riparian areas with deciduous trees, in canyons bottoms, and also among live oaks.

Status: Federal None, State None, Watch List, Global Rank Secure, State Rank Apparently Secure.

Although this species was not detected, suitable habitat exists for this species within the forested and forest edge portions of the study area. Avoidance and minimization measures for nesting birds prior to construction are included in Section 7.0 Recommendations.

White-tailed kite (*Elanus leucurus*) occur in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.

Status: Federal None, State Fully Protected, Global Rank Secure, State Rank Vulnerable/ Apparently Secure.

Although this species was not detected, suitable habitat exists for this species within the forested and patchy trees portions of the study area. Avoidance and minimization measures for nesting birds prior to construction are included in Section 7.0 Recommendations

Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) live in grasslands with few trees, tidal salt marshes and estuaries.

Status: Federal None, State None, Species of Special Concern, Global Rank Imperiled/Vulnerable, State Rank Imperiled/Vulnerable.

Although this species was not detected, suitable habitat exists within the study area for this species. Avoidance and minimization measures for nesting birds prior to construction are included in Section 7.0 Recommendations.

The black-capped chickadee (*Poecile atricapillus*) is a bird in the Paridae family. This species inhabits riparian woodlands in Del Norte and northern Humboldt Counties. It is mainly found in deciduous trees, especially willows and alders, along large or small watercourses. The chickadee excavates its nest cavity in rotten wood, or nests in old woodpecker holes.

Status: Federal None, State None, Watch List, Global Rank Secure, State Rank Vulnerable.

Although this species was not detected, suitable habitat exists within the study area for this species. Avoidance and minimization measures for nesting birds prior to construction are included in Section 7.0 Recommendations.

Rufous hummingbird (*Selasphorus rufus*) is a bird in the Trochilidae family. This species nests in open, shrubby areas, yards, parks, and forested areas. This species is typically seen during migration in Humboldt County and is a rare breeder locally.

Status: Federal None, State None, Global Rank Apparently Secure, State Rank Critically Imperiled/ Imperiled.

This species was not reported on the scoping list but was detected within the study area. Avoidance and minimization measures for nesting birds prior to construction are included in Section 7.0 Recommendations.

5.2.3 Fishes

No special-status fish species have a moderate or high potential to occur within the study area due to lack of surface water connectivity.

5.2.4 Insects

Obscure bumble bee (*Bombus caliginosus*) occurs along the coast, although populations have declined significantly. This species nests underground or above ground in abandoned bird nests. Habitats include open grassy coastal prairies and coast range meadows and whose food plants include *Ceanothus, Cirsium, Clarkia, Keckiella, Lathyrus, Lotus, Lupinus, Rhododendron, Rubus, Trifolium,* and *Vaccinium*. Dispersal occurs primarily in spring by queens while searching for suitable nest sites (NatureServe, 2023).

Status: Federal None, State None, Global Rank Apparently Secure, State Rank Critically Imperiled/Imperiled.

Although this species was not detected, suitable habitat may exist within the study area for this species. A single non-special-status bee was observed excavating a burrow on site near a location with existing insect burrows (Appendix 1, Photo 4). Avoidance and minimization measures for nesting special-status bees prior to construction are included in Section 7.0 Recommendations.

5.2.5 Mammals

Hoary bat (*Lasiurus cinereus*) prefers open habitats or habitat mosaics, access to trees for cover and open areas or habitat edges for feeding. It roosts in dense foliage of medium to large trees, feeds primarily on moths, and requires water.

Status: Federal None, State None, Global Rank Secure, State Rank Apparently Secure.

Although this species was not detected, suitable habitat may exist within the study area for this species. Avoidance and minimization measures for roosting bats prior to construction are included in Section 7.0 Recommendations.

Long-eared myotis (*Myotis evotis*) prefers coniferous woodlands and forests. They have nursery colonies in buildings, crevices, spaces under bark, and snags. Caves are used primarily as night roosts.

Status: Federal None, State None, Global Rank Secure, State Rank Imperiled/Vulnerable.

Although this species was not detected, suitable habitat may exist within the study area for this species. Avoidance and minimization measures for roosting bats prior to construction are included in Section 7.0 Recommendations.

5.2.6 Mollusks

No special-status mollusk species have a moderate or high potential to occur within the study area due to lack of suitable habitat available.

5.2.7 Reptiles

No special-status reptile species have a moderate or high potential to occur within the study area due to lack of suitable habitat available.

5.3 Special-status Natural Communities and Habitats

Sensitive natural communities are habitats that are generally defined by vegetation type and geographical location and are increasingly restricted in abundance and distribution. Recognition of natural communities is an ecosystem-based approach to maintaining biodiversity in California.

5.3.1 Natural Communities

Vegetation communities within the study area reflect the suburban wildland interface history of disturbance and ongoing regular maintenance of the area. No natural vegetation communities occur within the study area. Non-native herbaceous species are overwhelmingly dominant, and regular mowing for lawn-like conditions favors the persistence of their dominance in this location. Native plant dominance is restricted to isolated locations that do not constitute a vegetation community. Limited native plant dominance is provided by California oatgrass, wild strawberry, California blackberry, bracken fern, and sand aster (*Corethrogyne filaginifolia* var*. californica*). Individual occurrences of native species, while valuable within the urban/wildland interface, do not constitute a natural community, as such, no natural communities occur within the study area (Figure 2).

The majority of the study area is dominated by managed non-native grassland and trees along the edges of the study area and consist primarily of non-native species. See Appendix 1, Photos 1, 2, and 3-7) for representative photos of the study area and Appendix 4, Table 1 for a list of the botanical species occurring within the study area.

5.3.2 Wetlands and Riparian Habitats

A site-specific wetland delineation was not conducted as part of this Biological Resources Assessment. No streams or Ordinary High Water Marks were present within the study area and no wetland conditions were observed within the study area, which is characterized by well drained soils, gentle slopes, and upland species dominance. A wetland delineation of the area should be conducted within the study area, should the need for a comprehensive review of wetland conditions within the study area become necessary.

5.3.3 Designated Critical Habitat

The USFWS Critical Habitat Portal was queried for habitat designated as critical for species listed under the FESA (USFWS, 2023b). No critical habitat is designated within the study area. The nearest

designated critical habitat areas are for marine estuary species, the green sturgeon (*Acipenser medirostris*), 0.42 miles to the west, and the tidewater goby (*Eucyclogobius newberryi*), 1.12 miles southeast of the project site. The proposed project will not impact these critical habitats.

6.0 Conclusions

The purpose of this report was to assess the biological resources and habitat available within the study area, and to evaluate project-related impacts. The habitat value and availability were assessed for special-status species that could occur within the study area. See Section 7.0 Recommendations for avoiding and mitigating impacts.

6.1 Special-status Botanical Species

Of the 49 special-status botanical species potentially occurring in the Eureka and surrounding quadrangles, 40 are considered to have low or no potential to occur within the project area, and 9 are considered to have a moderate or high potential of occurrence. Site investigations were conducted during the appropriate seasonal window for detecting the species with moderate or higher potential for occurrence with the exception of Howell's montia. No special-status botanical species were observed within the study area during the surveys, nor is it likely that special-status botanical species occur within the project area due to historical and continued disturbance and use and the presence of non-native species. It is unlikely that any species were missed; however, the findings in this report represent conditions at the time of fieldwork and it is possible that false negative surveys for rare plant species could occur. This report documents the 2023 field investigations, and the findings presented here are based on best professional judgment.

No avoidance and minimization measures are recommended and no impacts to special-status botanical species are expected to occur as a result of this project.

6.2 Special-status Animal Species

Of the 62 special-status animal species reported from the Eureka and surrounding quadrangles, 54 animal species are considered to have a no or a low potential to occur within the study area and 8 species have a moderate to high potential of occurrence based on the available habitat. Considering the managed nature and surrounding human disturbance of the project site, special-status species are expected to choose less disturbed habitat for nesting and roosting. The project site is surrounded by urban development including city streets and U.S. Highway 101, with little cover for special-status animal movement into the project site. No special-status species were observed within or adjacent to the study area during site investigations. However, potential habitat exists for a small number of special-status animals. Therefore, avoidance and minimization measures are provided in Section 7.0 Recommendations. With the incorporation of these measures, no impacts to special-status animal species are expected to occur as a result of this project.

6.3 Sensitive Natural Communities

No natural communities or sensitive natural communities were observed within the study area. No avoidance and minimization measures are recommended and no impacts to sensitive natural communities are expected to occur as a result of this project.

6.4 Nesting Birds

All migratory birds are protected under the Migratory Bird Treaty Act. All locations with tall grasses or a shrub or tree canopy layer within the study area may provide suitable nesting habitat for a diverse assemblage of migratory birds. See Section 7.0 Recommendations for measures to minimize impacts to the nesting birds on the site.

6.5 Impacts on Wildlife Movement

Wildlife movement corridors within the study area are expected to be concentrated along shrubby and vegetated areas which run along the eastern boundary of the study area, adjacent to the access road. This project is not proposing encroachment into adjacent wildlife movement corridors. Therefore, it is unlikely that wildlife movement corridors will be significantly impacted by the project.

7.0 Recommendations

SHN recommends that the following measures be implemented at the project site to minimize the potential impacts to special-status plant and animal species, sensitive habitat, and waterways:

- To avoid potential impacts to wetlands and riparian habitats, a wetland delineation should be conducted prior to development.
- To avoid potential impacts to nesting birds, in accordance with the MBTA, one of the following shall be implemented:
    - Conduct vegetation removal and other ground-disturbance activities associated with any construction activities between late August and mid-March, when birds are not typically nesting, or
    - If vegetation removal or ground-disturbing activity is to take place during the nesting season (March 15 to August 15 for most birds), a qualified biologist shall conduct a pre-construction nesting bird survey. Pre-construction surveys for nesting pairs, nests, and eggs shall occur within the construction limits and within 100 feet (200 feet for raptors) of the construction limits. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist in consultation with the USFWS or CDFW, and implemented to prevent abandonment of the active nest.
- To avoid impacts to special-status maternity roosting bats, avoid tree removal in the maternity season (typically May 1 to August 31). When tree removal is conducted outside the maternity roosting season (September 1 to April 30), the following guidelines are recommended to slowly modify the temperature regime and discourage any potential roosting bats from returning to the roost during final removal:
    - Conduct a phased removal of trees where selected limbs and branches not containing cavities or peeled bark are removed on the first day (e.g. outer\upper smaller limbs) with the remainder of the tree (e.g. main trunk or larger branches) removed on the second day.
- To avoid impacts on nesting special-status bees, the following guidelines are recommended:

    - Clear vegetation during late fall to early spring months (October 1 to April 30) to avoid peak flight season, minimize impacts to floral resources, and reduce the potential for floral resources to draw bumble bees into the Project Area.

- During grubbing and other ground-disturbing activities that occur during the typical nesting bee active period (typically May 1 to September 30), a qualified biologist shall scout the area for bumble bees, with particular attention to potential floral resources and potential nest sites. If a special-status species is detected, the biologist shall notify CDFW immediately to determine appropriate avoidance and/or minimization measures.
    - If revegetation is needed as part of the project, native plant species should be used.
    - For habitat improvement purposes, invasive English ivy, cotoneaster species, Himalayan blackberry, and other invasive species should be removed.

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Site Photographs

1

Photo 1: Looking south from the northeastern edge of the study area. Note mowed landscape and shrubby boundary along the eastern edge of the field. Photo taken June 5, 2023.

Photo 2: Looking west across the study area. Note managed lawn conditions. Planted trees are located along the current Ocean View Cemetary entrance road. Photo taken June 5, 2023.

Photo 3: Looking south along the eastern edge of the study area and the eastern access road. Note natural conditions including red alder cover occur east of the access road and non-native planted trees and mowed conditions are west of the access road. The study area is located at the top of the slope in the right-hand corner of the photo. Photo taken June 5, 2023.

Photo 4: Native bee burrows in the northwest portion of the study area, under a grove of young non-native pines. Photo taken June 5, 2023.

Photo 5: Looking southeast across the study area within an area with native sand aster dominance. Photo taken July 14, 2023.

Photo 6: Looking southwest across a patch of native strawberry dominance. Note mowed conditions and non-native planted trees near the western edge of the study area. Photo taken July 14, 2023.

Photo 7: Looking southwest within the southern portion of the study area in an area with west coast Canada goldenrod dominance. Note mowed conditions. Photo taken July 14, 2023.

Species Scoping Lists

2

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Abronia umbellata var. *breviflora*	pink sand-verbena	Nyctagin-aceae	None	None	G4G5-T2	S1	1B.1	June-Oct.	Coastal dunes and coastal strand.	Foredunes and interdunes with sparse cover. Usually the plant closest to the ocean. 0-10 m.	None
Angelica lucida	sea-watch	Apiaceae	None	None	G5	S3	4.2	May-Sept.	Coastal strand	Coastal bluff scrub, coastal dunes, coastal scrub, coastal salt marshes. 0-150 m	None
Astragalus pycnostachyus var. *pycnostachyus*	coastal marsh milk-vetch	Fabaceae	None	None	G2T2	S2	1B.2	April-Oct.	Coastal dunes, marshes & swamps, coastal scrub.	Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m.	None
Astragalus rattanii var. *rattanii*	Rattan's milk-vetch	Fabaceae	None	None	G4T4	S4	4.3	April-July	Chaparral, cismontane woodland, lower montane conifer forest.	Open grassy hillsides, gravelly flats in valleys, and gravel bars of stream beds. 30-825 m.	Low
Cardamine angulata	seaside bittercress	Brassic-aceae	None	None	G5	S1	2B.1	Jan.-July	Lower montane, conifer forest, N. coast conifer forest, wetland	Wet areas, streambanks. 90-155 m.	None
Carex arcta	northern clustered sedge	Cyperaceae	None	None	G5	S1	2B.2	June-Sept.	Bogs and fens, north coast conifer forest.	Mesic sites. 60-1405 m.	None
Carex leptalea	bristle-stalked sedge	Cyperaceae	None	None	G5	S1	2B.2	March-July	Bogs and fens, meadows and seeps, marshes and swamps.	Mostly known from bogs and wet meadows. 3-1395 m.	None
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	None	None	G5	S3	2B.2	April-August	Marsh & swamp (brackish or freshwater).	0-200 m.	None

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Carex praticola	northern meadow sedge	Cyperaceae	None	None	G5	S2	2B.2	May-July	Meadows and seeps.	Moist to wet meadows. 15-3200 m.	None
Castilleja ambigua var. *humboldtiensis*	Humboldt Bay owl's-clover	Orobanch-aceae	None	None	G4T2	S2	1B.2	April-August	Marshes and swamps.	Coastal saltmarsh with Spartina, Distichlis, Salicornia, Jaumea. 0-20 m.	None
Castilleja litoralis	Oregon coast paintbrush	Orobanch-aceae	None	None	G3	S3	2B.2	June	Coastal bluff scrub, coastal dunes, coastal scrub.	Sandy sites. 5-255 m.	Low
Chloropyron maritimum ssp. *palustre*	Point Reyes salty bird's-beak	Orobanch-aceae	None	None	G4?T2	S2	1B.2	June-Oct.	Coastal salt marsh.	Usually in coastal salt marsh with Salicornia, Distichlis, Jaumea, Spartina, etc. 0-10 m.	None
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifrag-aceae	None	None	G5	S3	4.3	Feb.-June	North Coast coniferous forest, riparian forest	Streambanks, sometimes seeps, sometimes roadsides. 10-220 m.	None
Collinsia corymbosa	round-headed Chinese-houses	Plantagin-aceae	None	None	G1	S1	1B.2	April-June	Coastal Dunes	Coastal dunes from 10-30 m	Low
Eleocharis parvula	small spikerush	Cyperaceae	None	None	G5	S4	4.3	July-August	Marsh & swamp, salt marsh, wetland	In coastal salt marshes. 1-3020 m.	None
Erysimum menziesii	Menzies' wallflower	Brassic-aceae	E	E	G1	S1	1B.1	March-Sept.	Coastal dunes.	Localized on dunes and coastal strand. 0-35 m.	Low
Erythronium revolutum	coast fawn lily	Liliaceae	None	None	G4G5	S3	2B.2	March-August	Bogs & fens, broadleaf upland forest, north coast conifer forest.	Mesic sites; streambanks. 60-1405 m.	Low
Fissidens pauperculus	minute pocket moss	Fissident-aceae	None	None	G3?	S2	1B.2	Lichen	North coast coniferous forest, Redwood.	Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 10-1024 m.	Low

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Gilia capitata ssp. *pacifica*	Pacific gilia	Polemoni-aceae	None	None	G5T3	S2	1B.2	April-August	Coastal bluff scrub, chaparral, coastal prairie, valley & foothill grassland.	5-1345 m.	Moderate
Gilia millefoliata	dark-eyed gilia	Polemoni-aceae	None	None	G2	S2	1B.2	April-July	Coastal dunes.	1-60 m.	Low
Glehnia littoralis ssp. *leiocarpa*	American glehnia	Apiaceae	None	None	G5T5	S3	4.2	May-August	Coastal Dunes	0-20 m.	Low
Hesperevax sparsiflora var. *brevifolia*	short-leaved evax	Asteraceae	None	None	G4T3	S2	1B.2	March-June	Coastal bluff scrub, coastal dunes, coastal prairie.	Sandy bluffs and flats. 0-215 m.	Low
Hosackia gracilis	harlequin lotus	Fabaceae	None	None	G4	S3	4.2	March-July	Broadleaf upland forest, coast bluff scrub, coast prairie, coast scrub, closed-cone conifer forest, meadow, seep, marsh & swamp, N. coast conifer forest, valley & foothill grassland.	Wetlands and roadsides. 0-700 m.	Low
Lasthenia californica ssp. *macrantha*	perennial goldfields	Asteraceae	None	None	G3T2	S2	1B.2	Jan.-Nov.	Coastal bluff scrub, coastal dunes, coastal scrub.	5-185 m.	Moderate
Lathyrus glandulosus	sticky pea	Fabaceae	None	None	G3	S3	4.3	April-June	Cismontane woodland.	In oak woodlands upland from the coast redwood forests & along roadsides. 300-800 m.	Low
Lathyrus japonicus	seaside pea	Fabaceae	None	None	G5	S2	2B.1	May-August	Coastal dunes.	3-65 m.	Moderate

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Lathyrus palustris	marsh pea	Fabaceae	None	None	G5	S2	2B.2	March-August	Bogs & fens, lower montane conifer forest, marsh & swamp, north coast conifer forest, coastal prairie, coastal scrub.	Moist coastal areas. 2-140 m.	None
Layia carnosa	beach layia	Asteraceae	T	E	G2	S2	1B.1	March-July	Coastal dunes, coastal scrub.	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0-30 m.	Low
Lilium kelloggii	Kellogg's lily	Liliaceae	None	None	G3	S3	4.3	May-August	Lower montane conifer forest, N. coast conifer forest.	Gaps and roadsides in conifer forest. 3-1300 m.	None
Lilium occidentale	western lily	Liliaceae	E	E	G1	S1	1B.1	June-July	Coastal scrub, freshwater marsh, bogs & fens, coastal bluff scrub, coast prairie, N. coast conifer forest, marshes and swamps.	Well-drained, old beach washes overlain with wind-blown alluvium and organic topsoil; usually near margins of Sitka spruce. 3-110 m.	None
Listera cordata	heart-leaved twayblade	Orchidaceae	None	None	G5	S4	4.2	Feb.-July	Lower montane conifer forest, north coast conifer forest.	Bogs and fens, 5-1370 m.	None
Lycopodium clavatum	running-pine	Lycopodi-aceae	None	None	G5	S3	4.1	June-Sept.	Lower montane conifer forest, north coast conifer forest, marsh & swamp.	Forest understory, edges, openings, roadsides; mesic sites with partial shade and light. 45-1225 m.	None

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Mitellastra caulescens	leafy-stemmed mitrewort	Saxifrag-aceae	None	None	G5	S4	4.2	March-Oct.	Broadleaf upland forest, lower montane conifer forest, meadow & seep, N. coast conifer forest.	Mesic sites. 5-1700 m.	None
Monotropa uniflora	ghost-pipe	Ericaceae	None	None	G5	S2	2B.2	June-Sept.	Broadleaved upland forest, north coast conifer forest.	Often under redwoods or west hemlock. 15-855 m.	None
Montia howellii	Howell's montia	Montiaceae	None	None	G3G4	S2	2B.2	Feb.-May	Meadows and seeps, north coast coniferous forest, vernal pools.	Vernally wet sites; often on compacted soil. 10-1005 m.	Moderate
Oenothera wolfii	Wolf's evening-primrose	Onagraceae	None	None	G2	S1	1B.1	May-Oct.	Coastal bluff scrub, coastal dunes, coastal prairie, low montane conifer forest.	Sandy substrates; usually mesic sites. 0-125 m.	Moderate
Pityopus californicus	California pinefoot	Ericaceae	None	None	G4G5	S4	4.2	March-August	Broadleaf upland forest, upper montane and, N. coast conifer forest, low montane conifer forest.	Deep shade with few understory species, often under layer of duff, in rocky to clay loam soil. 15-2225 m.	None
Pleuropogon refractus	nodding semaphore grass	Poaceae	None	None	G4	S4	4.2	March-August	Meadow & seep, low montane conifer forest, N. coast conifer forest, riparian forest.	Mesic sites along streams, grassy flats in shaded redwood groves. 0-1600 m.	Low
Puccinellia pumila	dwarf alkali grass	Poaceae	None	None	G4?	SH	2B.2	July	Marshes and swamps.	Mineral spring meadows and coastal salt marshes. 1-10 m.	None
Ribes laxiflorum	trailing black currant	Grossulari-aceae	None	None	G5	S4	4.3	March-August	N. coast conifer forest, Redwood forests.	Grows over logs and stumps in moist, wet places. 5-1395 m.	Low

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Sidalcea malachroides	maple-leaved checkerbloom	Malvaceae	None	None	G3	S3	4.2	March-August	Broadleaf upland forest, coast prairie, coast scrub, N. coast conifer forest, riparian.	Woodlands and clearings near coast; often in disturbed areas. 0-730 m.	Moderate
Sidalcea malviflora ssp. *patula*	Siskiyou checkerbloom	Malvaceae	None	None	G5T2	S2	1B.2	May-August	Coastal bluff scrub, coastal prairie, north coast conifer forest.	Open coastal forest; roadcuts. 5-1255 m.	High
Sidalcea oregana ssp. *eximia*	coast checkerbloom	Malvaceae	None	None	G5T1	S1	1B.2	June-August	Meadow & seep, N. coast & low montane conifer forest.	Near meadows, in gravelly soil. 5-1805 m.	High
Silene scouleri ssp. *scouleri*	Scouler's catchfly	Caryophyll-aceae	None	None	G5T4 T5	S2S3	2B.2	June-August	Coastal bluff scrub, coastal prairie, valley and foothill grassland.	5-315 m.	High
Spergularia canadensis var. *occidentalis*	western sand-spurrey	Caryophyll-aceae	None	None	G5T4	S1	2B.1	June-August	Marshes and swamps (coastal salt marshes).	0-3 m.	None
Sulcaria spiralifera	twisted horsehair lichen	Parmeliaceae	None	None	G3G4	S2	1B.2	Lichen	Coastal dunes, N. coast conifer forest (immediate coast)	Usually on conifers. 0-90 m.	Low
Trichodon cylindricus	cylindrical trichodon	Ditrichaceae	None	None	G4	S2	2B.2	Moss	Broadleaved upland forest, upper montane coniferous forest.	In openings on sandy or clay soils on roadsides, stream banks, trails or in fields. 50-1500 m.	Low
Usnea longissima	Methuselah's beard lichen	Parmeli-aceae	None	None	G4	S4	4.2	Lichen	North coast coniferous forest, broadleaf upland forest.	In the "redwood zone" on tree branches of a variety of trees, incl. big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1465 m in California.	Low

Appendix 2 Table 1
Special Status Plant Species List CNDDB, CNPS, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	Family	FedList	CalList	GRank	SRank	RPlant Rank	Bloom Period	General Habitat	Micro-Habitat	Potential of Occurrence
Viola palustris	alpine marsh violet	Violaceae	None	None	G5	S1S2	2B.2	March-August4	Coastal scrub, bogs and fens.	Swampy, shrubby places in coastal scrub or coastal bogs. 0-150 m.	None

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)

C: candidate
CT: candidate threatened
D: delisted
DPS: distinct population segment
E: endangered
ESU: evolutionarily significant unit
FP: fully protected
PT: proposed threatened
SSC: species of special concern
T: threatened
WL: watch list

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)

G1/S1: critically imperiled
G2/S2: imperiled
G3/S3: vulnerable
G4/S4: apparently secure
G5/S5: secure

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Amphibians								
Ascaphus truei	Pacific tailed frog	None	None, SSC	G4	S3S4	Aquatic. Flowing waters. Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats.	Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	None. No suitable habitat present.
Rana aurora	northern red-legged frog	None	None, SSC	G4	S3	Flowing waters and ponds. Humid forests, woodlands, grasslands, & streamsides in NW California, usually near dense riparian cover.	Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Low. Suitable habitat adjacent.
Rana boylii	foothill yellow-legged frog	E (excluding North Coast Clade)	None, SSC	G3	S3	Partly-shaded, shallow streams & riffles with a rocky substrate in a variety of habitats. Lower montane conifer forest, meadow & seep, riparian forest and woodland.	Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	None. No suitable habitat present.
Rhyacotriton variegatus	southern torrent salamander	None	None, SSC	G3G4	S2S3	Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest.	Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rock within trickling water.	None. No suitable habitat present.
Birds								
Accipiter cooperii	Cooper's hawk	None	None, WL	G5	S4	Woodland, chiefly of open, interrupted or marginal type. Riparian forests.	Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Moderate. Suitable habitat adjacent.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Accipiter striatus	sharp-shinned hawk	None	None, WL	G5	S4	Ponderosa pine, black oak, riparian deciduous, mixed conifer & Jeffrey pine habitats. Prefers riparian areas.	North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.	None. No suitable habitat present.
Ardea alba	great egret	None	None, S	G5	S4	Brackish marsh, estuary, freshwater marsh, marsh & swamp, riparian forest, wetland. Colonial nester in large trees.	Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	None. No suitable habitat present.
Ardea herodias	great blue heron	None	None, S	G5	S4	Brackish marsh, estuary, freshwater marsh, marsh & swamp, riparian forest, wetland. Colonial nester in tall trees, cliffsides, and sequestered spots on marshes.	Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	None. No suitable habitat present.
Asio flammeus	short-eared owl	None	None, SSC	G5	S3	Found in swamp lands, both fresh and salt; lowland meadows; foothill grassland, wetland, irrigated alfalfa fields.	Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation.	None. No suitable habitat present.
Botaurus lentiginosus	American bittern	None	None	G4	S3S4	Freshwater and slightly brackish marshes. Also in coastal saltmarshes.	Dense reed beds.	None. No suitable habitat present.
Brachyramphus marmoratus	marbled murrelet	T	E	G3G4	S1	Lower montane conifer forest, Old growth Redwood Feeds near-shore; nests inland along coast from Eureka to Oregon border.	Nests in old-growth redwood-dominated forests, up to 6 mi. inland, often in Douglas-fir. Uses open ocean, uncommon in Humboldt Bay.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Chaetura vauxi	Vaux's swift	None	None, SSC	G5	S2S3	Redwood, Douglas-fir, & other coniferous forests. Old growth. Nests in large hollow trees & snags. Often nests in flocks.	Forages over most terrains and habitats but shows a preference for foraging over rivers and lakes.	None. No suitable habitat present.
Charadrius alexandrinus nivosus	western snowy plover	T	None, SSC	G3T3	S2S3	Sandy beaches, river bars, salt pond levees, wetlands & shores of large alkali lakes.	Needs sandy, gravelly or friable soils for nesting. Forages along river gravel bars and sandy beaches.	None. No suitable habitat present.
Charadrius montanus	mountain plover	None	None, SSC	G3	S2S3	Chenopod scrub. Valley and foothill short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms.	Short vegetation, bare ground & flat topography. Prefers grazed areas & areas with burrowing rodents.	None. No suitable habitat present.
Circus hudsonius	northern harrier	None	None, SSC	G5	S3	Coastal salt & fresh-water marsh, riparian scrub. Nest & forage in grasslands, from salt grass in desert sink to mountain cienagas.	Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Low. Suitable habitat nearby.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	T	E	G5T2T3	S1	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems.	Nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.	None. No suitable habitat present.
Contopus cooperi	olive-sided fly catcher	None	None, SSC	G4	S4	Nesting habitats are mixed conifer, montane hardwood conifer, Douglas-fir, redwood, red fir & lodgepole pine.	Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Coturnicops noveboracensis	yellow rail	None	None, SSC	G4	S1S2	Freshwater marsh Meadow & seep. Summer resident in eastern Sierra Nevada in Mono County.	Freshwater marshlands.	None. No suitable habitat present.
Egretta thula	snowy egret	None	None	G5	S4	Marsh, swamp, meadow, seep, riparian forest & woodland, wetland. Colonial nester, nest sites in beds of dense tules.	Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	None. No suitable habitat present.
Elanus leucurus	white-tailed kite	None	None, FP	G5	S3S4	Rolling foothills and valley margins w/scattered oaks & river bottomlands or marshes next to deciduous woodland.	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Moderate. Suitable habitat available.
Empidonax traillii	willow flycatcher	None	E	G5	S1S2	Meadow & seep, riparian scrub, riparian woodland, wetland. Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 ft elevation.	Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.	None. No suitable habitat present.
Falco columbarius	merlin	None	None, WL	G5	S3S4	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches.	Clumps of trees or windbreaks are required for roosting in open country.	Low. Suitable habitat adjacent.
Falco peregrinus anatum	American peregrine falcon	D	D, FP	G4T4	S3S4	Many open habitats, likely along coastlines, lake edges, mountain edges.Near wetlands, lakes, rivers, or other water; nests on cliffs, banks, dunes, mounds; also, human-made structures.	Nest consists of a scrape or a depression or ledge in an open site.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Haliaeetus leucocephalus	bald eagle	D	E, FP	G5	S3	Lower montane conifer forest, Old growth. Ocean shore, lake margins, & rivers for both nesting & wintering. Most nests within 1 mi of water.	Nests in large, old-growth, or dominant live tree w/open branches, especially ponderosa pine. Roosts communally in winter.	None. No suitable habitat present.
Numenius americanus	long-billed curlew	None	None, WL	G5	S2	Great Basin grassland Meadow & seep. Breeds in upland shortgrass prairies & wet meadows in northeastern California.	Habitats on gravelly soils and gently rolling terrain are favored over others.	None. No suitable habitat present.
Nycticorax nycticorax	black-crowned night heron	None	None	G5	S4	Marsh & swamp, riparian forest, riparian woodland, wetland. Colonial nester, usually in trees, occasionally in tule patches.	Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	None. No suitable habitat present.
Pandion haliaetus	osprey	None	None, WL	G5	S4	Ocean shore, riparian forest, bays, fresh-water lakes, and larger streams.	Large nests built in tree-tops or tall human-made structures within 15 miles of a good fish-producing body of water.	None. No suitable habitat present.
Passerculus sandwichensis alaudinus	Bryant's savannah sparrow	None	None, SSC	G5T2T3	S2S3	Agricultural fields, wet meadows, brackish marsh, low growing grasslands, low tidally influenced habitat and adjacent ruderal areas.	Moist grasslands within and just above the fog belt.	Moderate. Suitable habitat available.
Pelecanus occidentalis californicus	California brown pelican	D	D, FP	G4T3	S3	Estuaries and coastal marine habitat. Colonial nester on coastal islands just outside the surf line.	Nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Phalacrocorax auritus	double-crested cormorant	None	None, WL	G5	S4	Riparian forest, Riparian scrub, Riparian woodland. Colonial nester on coastal cliffs, offshore islands, & along lake margins in the interior of the state.	Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	None. No suitable habitat present.
Poecile atricapillus	black-capped chickadee	None	None, WL	G5	S3	Inhabits riparian woodlands in Del Norte and northern Humboldt counties.	Mainly found in deciduous tree-types, especially willows and alders, along large or small watercourses.	High. Suitable habitat available.
Rallus obsoletus obsoletus	California Ridgway's rail	E	E	G3T1	S2	Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	None. No suitable habitat present.
Riparia riparia	bank swallow	None	T	G5	S2	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert.	Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	None. No suitable habitat present.
Strix occidentalis caurina	northern spotted owl	T	SSC	G3T3	S2S3	Old-growth forests or mixed stands of old-growth & mature trees. Occasional in younger forests w/ patches of big trees.	High, multistory canopy dominated by big trees, many trees w/cavities or broken tops, woody debris & space under canopy.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Fish								
Acipenser medirostris pop. 1	green sturgeon - southern DPS	Threatened	None	G2T1	S1	Spawning site fidelity. In Sacramento, Feather and Yuba Rivers. Presence in upper Stanislaus and San Joaquin Rivers may indicate spawning. Non-spawning adults occupy marine/estuarine waters. Delta Estuary is important for rearing juveniles.	Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder.	None. No suitable habitat present.
Entosphenus tridentatus	Pacific lamprey	None	None	G4	S3	Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining.	Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	None. No suitable habitat present.
Eucyclogobius newberryi	tidewater goby	Endangered	None	G3	S3	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.	None. No suitable habitat present.
Lampetra richardsoni	western brook lamprey	None	None	G4G5	S3S4			None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Oncorhynchus clarkii clarkii	coast cutthroat trout	None	None	G5T4	S3	Small coastal streams from the Eel River to the Oregon border.	Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	None. No suitable habitat present.
Oncorhynchus kisutch pop. 2	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G5T2Q	S2	Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California.	State listing refers to populations between the Oregon border and Punta Gorda, California.	None. No suitable habitat present.
Oncorhynchus mykiss irideus pop. 48	steelhead - northern California DPS summer-run	Threatened	Endangered	G5T2Q	S2	Naturally spawning population of the stream-maturing summer-run ecotype. From Redwood Creek watershed south to and inclusive of Gualala River watershed. Distribution within range more limited.	Require cool water (<23C); holding habitat to withstand higher temps; lower flows in summer/fall; require loose gravels at pool tails for redd construction. Favor cool, clear, fast-flowing riffles, ample riparian cover, undercut banks and diverse prey.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Oncorhynchus mykiss irideus pop. 49	steelhead - northern California DPS winter-run	Threatened	None	G5T3Q	S3	Naturally spawning population of the ocean-maturing winter-run ecotype. From Redwood Creek watershed south to and inclusive of Gualala River watershed. Distribution throughout range.	Adults require high flows of 18-20 cm for passage and loose gravels at pool tails for red construction. Juveniles favor areas with cool (10-17 C), clear, fast-flowing riffles, ample riparian cover, undercut banks and diverse prey.	None. No suitable habitat present.
Spirinchus thaleichthys	longfin smelt	Candidate	Threatened	G5	S1	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.	Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	None. No suitable habitat present.
Thaleichthys pacificus	eulachon	Threatened	None	G5	S1	Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries.	Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	None. No suitable habitat present.
Insects								
Bombus caliginosus	obscure bumble bee	None	None	G4?	S1S2	Coastal areas from Santa Barbara county to north to Washington state.	Nests underground or above ground in abandoned bird nests. Food plant genera include *Baccharis, Cirsium, Lupinus, Lotus, Grindelia* and *Phacelia.*	Low to Moderate. Suitable habitat may be present if fields are left unmowed.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Bombus occidentalis	western bumble bee	None	None	G2G3	S1	Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Nest in cavities or abandoned burrows.	Low. Suitable habitat may be present if fields are left unmowed, although now uncommon on the coast.
Bombus crotchii	Crotch bumble bee	None	None	G3G4	S1S2	California, parts of Nevada. Warm, dry environments such as desert scrub.	Nests are often located underground in abandoned rodent nests.	None. Known only in Southern parts of the state.
Cicindela hirticollis gravida	sandy beach tiger beetle	None	None	G5T2	S2	Coastal dunes. Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.	Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	None. No suitable habitat present.
Danaus plexippus	monarch butterfly	Candidate	None	n/a	n/a	Canada to Mexico. Fields, roadside areas, open areas, wet areas or urban garden.	Milkweed and other flowering plants. They only lay eggs on milkweed.	Low. Possible temporary habitat for migrants, no milkweed present.
Scaphinotus behrensi	Behrens' snail-eating beetle	None	None	G2G4	S2S4	Coniferous forest Found in extreme NW CA along the coast.	Shaded, moist ground, occasionally tree trunks. Nocturnal, takes cover under fallen trees and leaf litter.	None. No suitable habitat present.
Mammals								
Aplodontia rufa humboldtiana	Humboldt mountain beaver	None	None, SSC	G5TNR	SNR	Coastal scrub, redwood forest, riparian forest. Coast Range in southwestern Del Norte County and northwestern Humboldt County.	Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	Low. Little suitable habitat available.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
Arborimus albipes	white footed vole	None	None, SSC	G3G4	S2	Mature coastal forests in Humboldt & Del Norte cos. Prefers areas near small, clear streams with dense alder & shrubs.	Occupies the habitat from the ground surface to the canopy. Feeds in all layers & nests on the ground under logs or rock	None. No suitable habitat present.
Arborimus pomo	Sonoma tree vole	None	None, SSC	G3	S3	N. coast fog belt from Oregon border to Sonoma Co. In Douglas-fir, redwood & montane hardwood-conifer forests. Old growth.	Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	None. No suitable habitat present.
Corynorhinus townsendii	Townsend's big-eared bat	None	None, SSC	G3G4	S2	Throughout California in a wide variety of habitats including montane forest, riparian woodland, chaparral, and grasslands. Most common in mesic sites.	Roosts in the open, hanging from walls & ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	None. No suitable habitat present and site is surrounded by human disturbance.
Erethizon dorsatum	North American porcupine	None	None	G5	S3	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges.	Wide variety of coniferous and mixed woodland habitat.	Low. Little habitat available and site is isolated surrounded by urban development.
Lasiurus cinereus	hoary bat	None	None	G5	S4	Broadleaved upland forest, cismontane woodland, lower montane and North coast conifer forests. Prefers open habitats or habitat mosaics, access to trees for cover and open areas or habitat edges for feeding.	Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	Moderate. Suitable habitat available.
Martes caurina humboldtensis	Humboldt marten	T	E, SSC	G5T1	S1	North coast conifer forest, old growth, Redwood forest. Occurs only in the coastal redwood zone from the	Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	None. No suitable habitat present.

Appendix 2 Table 2 Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles Biological Assessment 2023 City of Eureka, California								
Scientific Name	**Common Name**	**FedList**	**CalList**	**GRank**	**SRank**	**GenHab**	**MicroHab**	**Potential of Occurrence**
						Oregon border south to Sonoma County.		
Myotis evotis	long-eared myotis	None	None	G5	S3	Found in all brush, woodland & forest habitats from sea level to about 9000 ft. prefers coniferous woodlands & forests.	Nursery colonies in buildings, crevices, spaces under bark, & snags. Caves used primarily as night roosts.	Moderate. Suitable habitat available.
Pekania pennanti	fisher (west coast DPS)	None	None, SSC	G5T2-T3Q	S2S3	Intermediate to large-tree stages of conifer forests & deciduous-riparian areas with high percent canopy closure.	Uses cavities, snags, logs & rocky areas for cover & denning. Needs large areas of mature, dense forest. West Coast DPS refers to West Coast population excluding Southern Sierra Nevada DPS.	None. No suitable habitat present.
Mollusks								
Margaritifera falcata	western pearlshell	None	None	G4G5	S1S2	Aquatic.	Prefers lower velocity waters.	None. No suitable habitat present.
Reptiles								
Emys marmorata	western pond turtle	None	None, SSC	G3G4	S3	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.	Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	None. No suitable habitat present.
Chelonia mydas	Green sea turtle	Threatened	None	G3	S1	Marine	Marine species other than laying eggs in sandy coastal beaches in warm climates.	None. No suitable habitat present.

Appendix 2 Table 2
Special Status Terrestrial Animal Species List CNDDB, IPaC: Eureka and Surrounding 7.5-minute quadrangles
Biological Assessment 2023
City of Eureka, California

Scientific Name	Common Name	FedList	CalList	GRank	SRank	GenHab	MicroHab	Potential of Occurrence

1. Species indicator status as assigned by Federal Endangered Species Act (FESA), California Endangered Species Act (CESA), and California Department of Fish and Wildlife (CDFW)
   - C: candidate
   - CT: candidate threatened
   - D: delisted
   - DPS: distinct population segment
   - E: endangered
   - ESU: evolutionarily significant unit
   - FP: fully protected
   - PT: proposed threatened
   - SSC: species of special concern
   - T: threatened
   - WL: watch list

2. Species Heritage rank as assigned by California Department of Fish and Wildlife (CDFW)
   - G1/S1: critically imperiled
   - G2/S2: imperiled
   - G3/S3: vulnerable
   - G4/S4: apparently secure
   - G5/S5: secure

IPaC Resource List 3

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

Humboldt County, California

Local office

Arcata Fish And Wildlife Office

(707) 822-7201
(707) 822-8411

1655 Heindon Road

1033 Heindon Road
Arcata, CA 95521-4573

Endangered species

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

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

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

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

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

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

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

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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
Pacific Marten, Coastal Distinct Population Segment Martes caurina Wherever found There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet Brachyramphus marmoratus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl Strix occidentalis caurina 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	Threatened
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS

Green Sea Turtle Chelonia mydas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6199	Threatened

Fishes

NAME	STATUS
Tidewater Goby Eucyclogobius newberryi Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Western Lily Lilium occidentale Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/998	Endangered

Critical habitats

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

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Migratory birds

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

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

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

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- 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

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 This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Sep 30
Black Oystercatcher Haematopus bachmani This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Turnstone Arenaria melanocephala This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
California Gull Larus californicus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 1 to Jul 31
Cassin's Auklet Ptychoramphus aleuticus 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/6967	Breeds Mar 21 to Sep 21
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Evening Grosbeak Coccothraustes vespertinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere

Marbled Godwit Limosa fedoa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Olive-sided Flycatcher Contopus cooperi This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Rufous Hummingbird selasphorus rufus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds Jun 1 to Aug 10
Western Grebe aechmophorus occidentalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit Chamaea fasciata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

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.

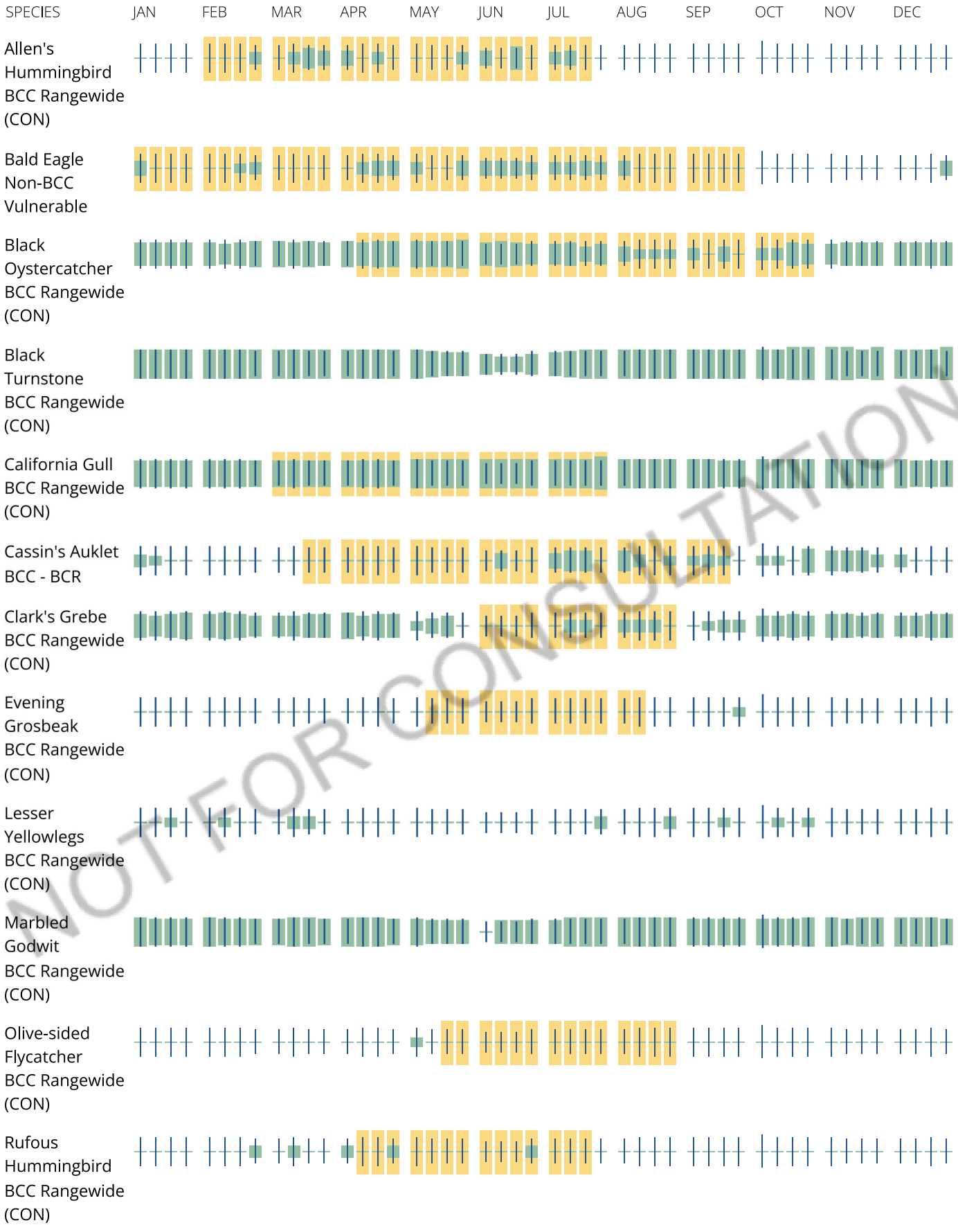
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

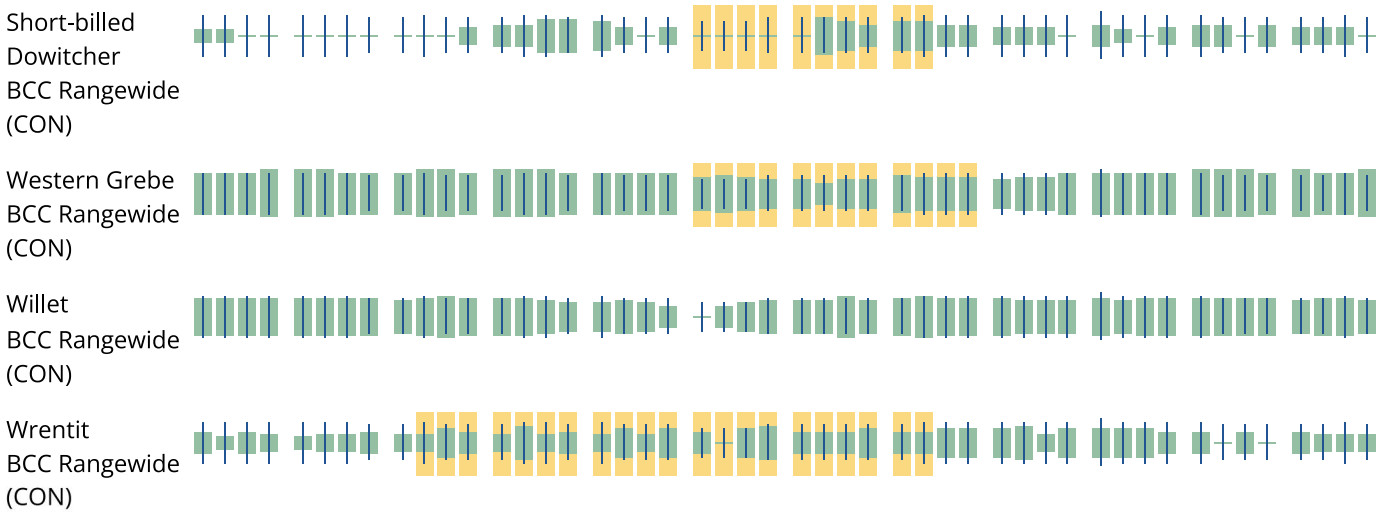
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.

▪ probability of presence ▪ breeding season | survey effort – no data





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

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

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

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

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

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

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.

Observed Species List

4

Table 1 Botanical Species Observed 6/5/2023 and 7/14/2023 City of Eureka Parcels, Eureka CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Trees			
Abies grandis	grand fir	Pinaceae	N[a]
Eucalyptus globulus	blue gum	Myrtaceae	I[b]
Fangula purshiana ssp. purshiana	cascara buckthorn	Rhamnaceae	Y[c]
Hesperocyparis macrocarpa	Monterey cypress	Pinaceae	N
Pinus radiata	Monterey pine	Pinaceae	N
Prunus cerasifera	wild plum	Rosaceae	I
Pseudotsuga menziesii var. *menziesii*	Douglas fir	Pinaceae	Y
Salix hookeriana	coastal willow	Salicaceae	Y
Shrubs			
Baccharis pilularis	coyote brush	Asteraceae	Y
Cotoneaster franchetii	cotoneaster	Rosaceae	I
Cotoneaster lacteus	milkflower cotoneaster	Rosaceae	I
Cotoneaster simonsii	Simon's cotoneaster	Rosaceae	N
Cytisus scoparius	Scotch broom	Fabaceae	I
Ilex aquifolium	holly	Aquifoliaceae	I
Lonicera involucrata var. *ledebourii*	coast twinberry	Caprifoliaceae	Y
Rosa gymnocarpa	baldhip rose	Rosaceae	Y
Rubus armeniacus	Himalayan blackberry	Rosaceae	I
Rubus ursinus	California blackberry	Rosaceae	Y
Sambucus racemosa var. *racemosa*	red elderberry	Viburnaceae	Y
Sedges and Rushes			
Carex pansa	sand dune sedge	Cyperaceae	Y
Ferns			
Polystichum munitum	sword fern	Dryopteridaceae	Y
Pteridium aquilinum var. *pubescens*	bracken fern	Dennstaedtiaceae	Y
Grasses			
Agrostis stolonifera	creeping bentgrass	Poaceae	I
Aira caryophyllea	silver hairgrass	Poaceae	N
Aira praecox	yellow hairgrass	Poaceae	N
Anthoxanthum odoratum	sweet vernal grass	Poaceae	I
Avena barbata	wild oat	Poaceae	I
Briza maxima	rattlesnake grass	Poaceae	I
Bromus catharticus	rescue grass	Poaceae	N
Bromus diandrus	ripgut brome	Poaceae	I
Bromus hordeaceus	soft chess	Poaceae	I
Bromus sitchensis var. *carinatus*	California brome	Poaceae	Y
Bromus vulgaris	common brome	Poaceae	Y

Table 1 Botanical Species Observed 6/5/2023 and 7/14/2023 City of Eureka Parcels, Eureka CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Dactylis glomerata	orchardgrass	Poaceae	I
Danthonia californica	California oatgrass	Poaceae	Y
Festuca arundinacea	reed fescue	Poaceae	I
Festuca myuros	six weeks grass	Poaceae	I
Festuca perennis	Italian rye grass	Poaceae	I
Festuca rubra	red fescue	Poaceae	Y
Hordeum marinum ssp. *gussoneanum*	barley	Poaceae	N
Hordeum murinum ssp. *glaucum*	smooth barley	Poaceae	I
Poa annua	annual blue grass	Poaceae	N
Rytidosperma penicillatum	hairy oatgrass	Poaceae	I
Herbs			
Acmispon parviflorus	hill lotus	Fabaceae	Y
Agapanthus praecox	African lily	Liliaceae	N
Aphanes occidentalis	ladies mantle	Rosaceae	Y
Bellis perennis	English lawn daisy	Asteraceae	N
Brodiaea terrestris ssp. *terrestris*	dwarf brodiaea	Themidaceae	Y
Cerastium fontanum ssp. *vulgare*	mouseear chickweed	Caryophyllaceae	N
Conium maculatum	poison hemlock	Apiaceae	I
Convolvulus arvensis	field bindweed	Convolvulaceae	N
Corethrogyne filaginifolia var. *californica*	California sandaster	Asteraceae	Y
Daucus carota	carrot	Apiaceae	N
Erodium moschatum	whitestem filaree	Geraniaceae	N
Fragaria vesca	wild strawberry	Rosaceae	Y
Galium aparine	cleaver plant	Rubiaceae	Y
Gamochaeta ustulata	featherweed	Asteraceae	Y
Geranium molle	crane's bill geranium	Geraniaceae	N
Glebionis segetum	corn daisy	Asteraceae	N
Hypochaeris radicata	hairy cats ear	Asteraceae	I
Linum bienne	flax	Linaceae	N
Matricaria discoidea	pineapple weed	Asteraceae	Y
Plantago lanceolata	English plantain	Plantaginaceae	I
Polygonum aviculare ssp. *aviculare*	prostrate knotweed	Polygonaceae	N
Rumex acetosella	Sheep sorrel	Polygonaceae	I
Sisyrinchium bellum	blue eyed grass	Iridaceae	Y
Solidago elongata	west coast Canada goldenrod	Asteraceae	Y
Solidago spathulata	dune goldenrod	Asteraceae	Y
Soliva sessilis	South American soliva	Asteraceae	N
Sonchus oleraceus	sow thistle	Asteraceae	N
Spergularia rubra	purple sand spurrey	Caryophyllaceae	N
Stellaria media	chickweed	Caryophyllaceae	N
Symphyotrichum chilense	Pacific aster	Asteraceae	Y
Trifolium dubium	shamrock clover	Fabaceae	N

Table 1 Botanical Species Observed 6/5/2023 and 7/14/2023 City of Eureka Parcels, Eureka CA			
Scientific Name	**Common Name**	**Family**	**Native?**
Trifolium subterraneum	subterranean clover	Fabaceae	N
Vicia sativa ssp. *nigra*	small common vetch	Fabaceae	N
Vicia sativa ssp. *sativa*	common vetch	Fabaceae	N
Vicia tetrasperma	four seeded vetch	Fabaceae	N
Vinca major	vinca	Apocynaceae	I
Vines			
Hedera helix	English ivy	Araliaceae	I
80 Species			**34% Native**

[a] N: Non-native species
[b] I: Invasive species
[c] Y: Native species

Appendix 4 Table 2 Animals Observed or heard 6/5/2023 Biological Resources Assessment, Eureka, CA				
Scientific Name	Common Name	Family	Breeding Habit	Status
Birds				
Salasphorus rufus	Rufous hummingbird	Trochilidae	Small nest of soft plant material in trees. Typically Oregon to Alaska	NL
Certhia americana	Brown creeper	Certhiidae	Mixed or coniferous forests. Usually nest in mature forests, especially conifers.	NL
Colaptes auratus	Northern flicker	Picidae	Generally nest in holes in trees. Occasionally they nest in old, earthen burrows vacated by Belted kingfishers or Bank swallows.	NL
Corvus corax	Common raven	Corvidae	On cliffs, in trees, and on human-made structures in a variety of habitats.	NL
Corvus brachyrhynchos	American crow	Corvidae	Near the tops of trees, primarily conifers in a variety of habitats	NL
Melospiza melodia	Song sparrow	Emberizidae	Nest usually on ground in a variety of open habitats, including grasslands, chaparral, agricultural fields, overgrown pastures, freshwater and tidal marsh, lake edges, forest edges, and suburbs. Also found in mixed woodlands.	NL
Zonotrichia leucophrys	White-crowned sparrow	Passerellidae	Nest of twigs and grasses in low shrubs in a variety of habitats	NL
Sitta canadensis	Red-breasted nuthatch	Sittidae	Nests in cavities of deciduous or coniferous trees	NL
Patagioenas fasciata	Band-tailed pigeon	Columbidae	Platform nest in trees.	NL
Poecile rufescens	Chestnut-backed chickadee	Paridae	Tree cavities or nest boxes. Inhabit moist coniferous or mixed forests.	NL
Bombycilla cedrorum	Cedar waxwing	Bombycillidae	Nest in the fork of a horizontal tree branch in woodlands especially near streams.	NL

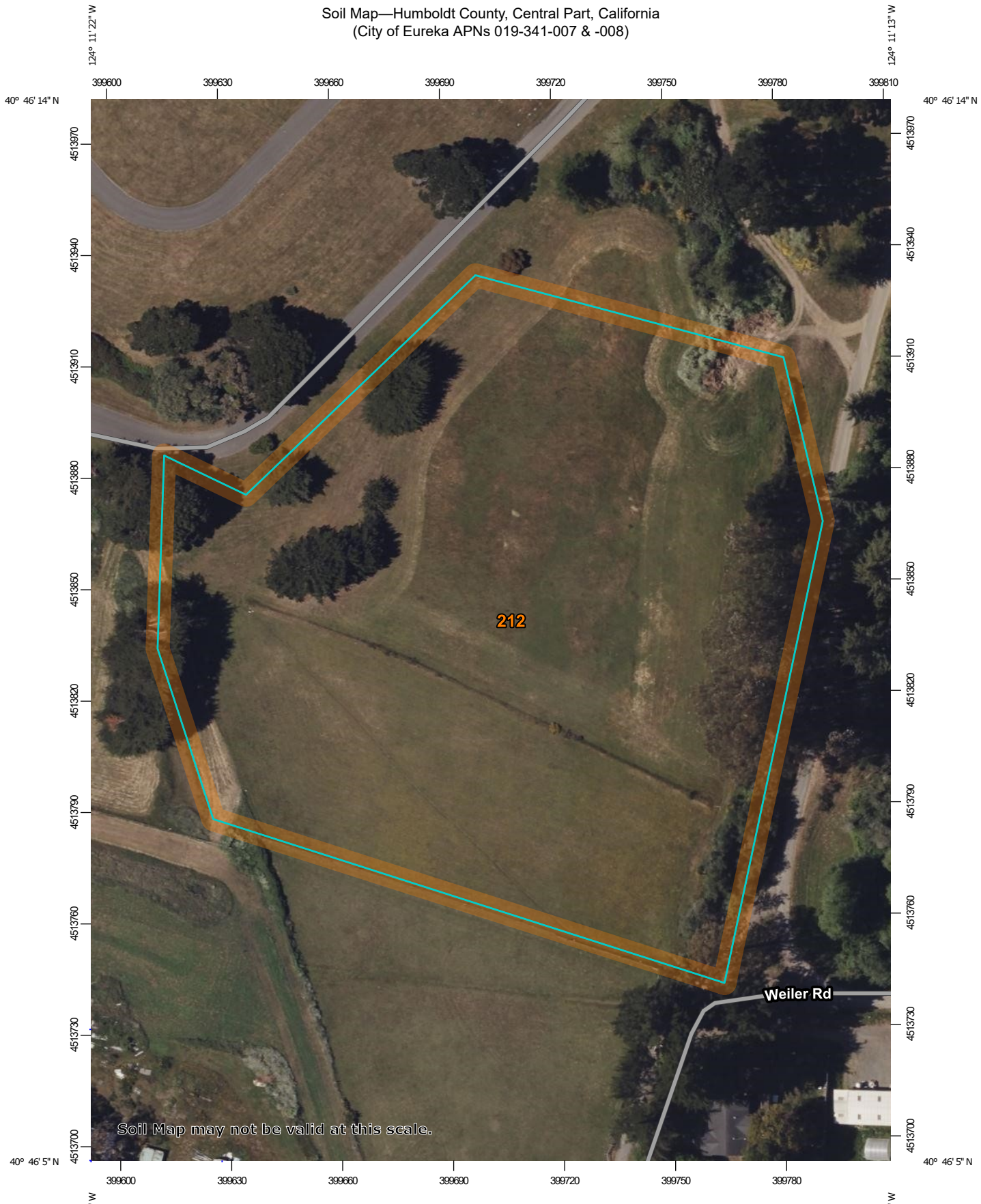
Appendix 4 Table 2 Animals Observed or heard 6/5/2023 Biological Resources Assessment, Eureka, CA				
Scientific Name	**Common Name**	**Family**	**Breeding Habit**	**Status**
Regulus satrapa	Golden-crowned kinglet	Regulidae	Nest in deciduous and mixed forests, wooded bogs, conifer plantations, hemlock groves, cottonwood-willow forests, and groves in parks and cemeteries.	NL
Cardellina pusilla	Wilson's warbler	Parulidae	Nest on the ground in dense clumps of grass or in shrubs	NL
Cathartes aura	Turkey vulture	Cathartidae	Scrape out a spot in soil or leaf litter on a cliff	NL
Spinus psaltria	Lesser goldfinch	Fringillidae	Nests in riparian trees	NL
Turdus migratorius	American robin	Turdidae	Nests in a variety of vegetation and human made structures	NL
Insects				
Bombus vosnesenksii	Yellow-faced bumblebee	Apidae	Underground, in colonies	NL
Mammals				
Tamiasciurus douglasii	Douglas squirrel	Sciuridae	Forks of limbs in trees in forested areas, parks, and suburbs.	NL
Thomomys bottae (mounds)	Botta's pocket gopher (sign)	Geomyidae	Mixed woodlands, hedgerows, grasslands, chaparral. Nest in underground burrows.	NL
Urocyon cinereoargenteus	Gray fox (sign)	Canidae	Shrublands and brushy woodlands in hilly and rough terrain. Usually near surface water.	NL

NL: Not Listed
SSC: Species of Special Concern
WL: Watch List

NRCS Soils Map

5

Soil Map—Humboldt County, Central Part, California
(City of Eureka APNs 019-341-007 & -008)



Map Scale: 1:1,390 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
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- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Humboldt County, Central Part, California
Survey Area Data: Version 9, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
212	Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes	6.0	100.0%
Totals for Area of Interest		**6.0**	**100.0%**

Eureka, CA | Arcata, CA | Redding, CA | Willits, CA | Fort Bragg, CA | Coos Bay, OR | Klamath Falls, OR

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Humboldt County, Central Part, California

August 18, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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212—Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes.....13
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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- Area of Interest (AOI)

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- Closed Depression
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- Gravelly Spot
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Web Soil Survey URL:
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Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
212	Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes	8.8	100.0%
Totals for Area of Interest		**8.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Humboldt County, Central Part, California

212—Urban land-Halfbluff-Redsands complex, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2w91b
Elevation: 10 to 150 feet
Mean annual precipitation: 35 to 80 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 275 to 330 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Urban land, residential: 65 percent
Halfbluff and similar soils: 15 percent
Redsands and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land, Residential

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Description of Halfbluff

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

A1 - 0 to 3 inches: fine sandy loam
A2 - 3 to 11 inches: fine sandy loam
Bw - 11 to 19 inches: sandy loam
C1 - 19 to 22 inches: sandy loam
C2 - 22 to 43 inches: loamy sand
C3 - 43 to 61 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)

Depth to water table: About 22 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F004BX118CA - Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy loam
Hydric soil rating: No

Description of Redsands

Setting

Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sandstone

Typical profile

A1 - 0 to 3 inches: fine sandy loam
A2 - 3 to 14 inches: fine sandy loam
C1 - 14 to 28 inches: sand
C2 - 28 to 31 inches: sand
C3 - 31 to 47 inches: sand
C4 - 47 to 54 inches: sand
C5 - 54 to 57 inches: sand
C6 - 57 to 61 inches: loamy sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 14 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F004BX118CA - Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy loam
Hydric soil rating: No

Minor Components

Millstreet

Percent of map unit: 3 percent
Landform: Terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Tepona

Percent of map unit: 2 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F004BX118CA - Sitka spruce-redwood/salal/western brackenfern, marine terraces, marine deposits, fine sandy loam
Hydric soil rating: No

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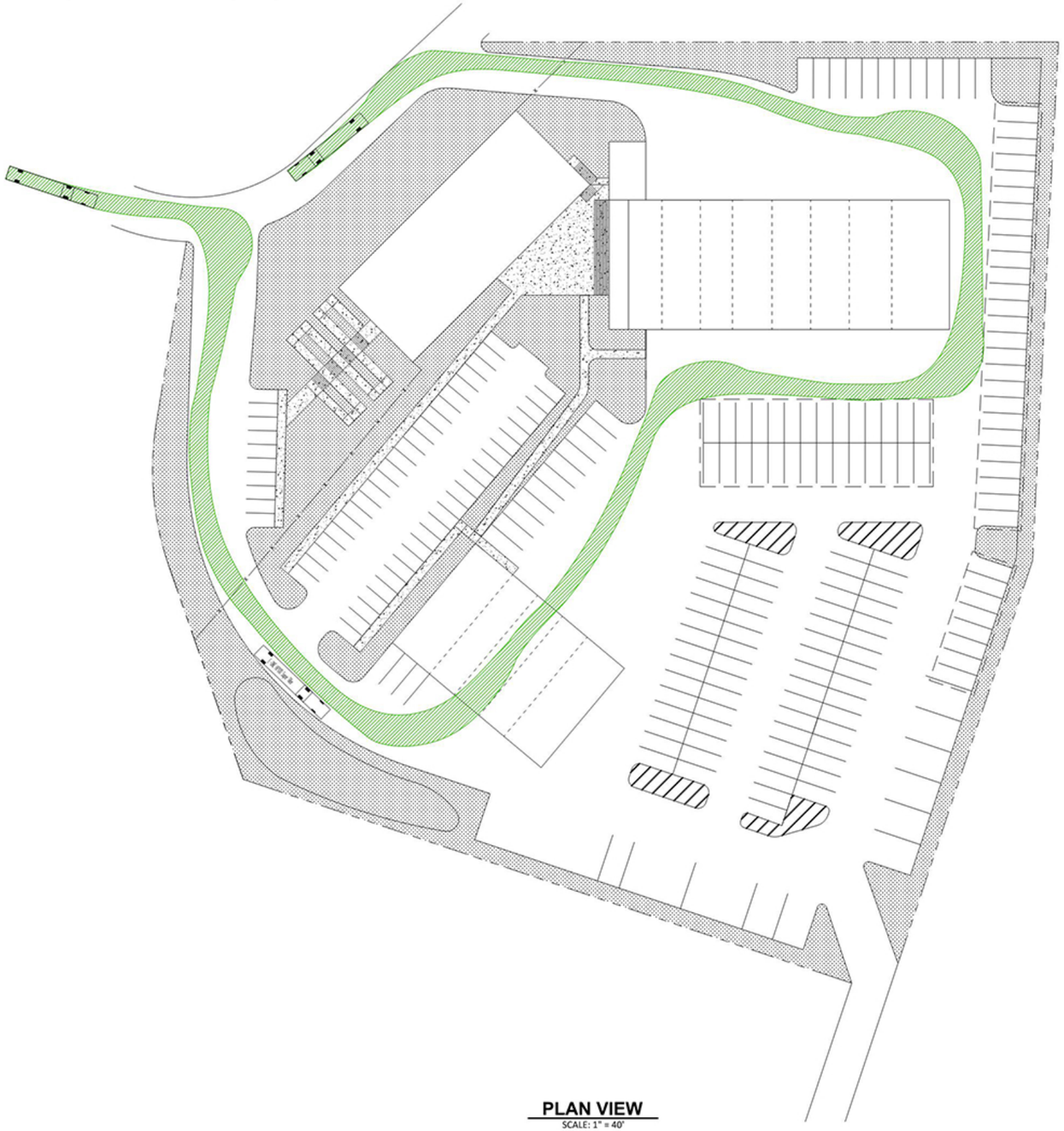
Appendix E

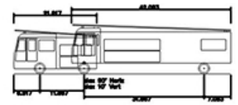
Vehicle and Equipment Space Allocation

SAMPLE STUDY - FOR REFERENCE ONLY



PLAN VIEW
SCALE: 1" = 40'

NOTES:



1	ONE HP100 Super Tiller	
2	Length	67.33Ft
3	Width	8.33Ft
4	Body Height	12.67Ft
5	Min Body Ground Clearance	1.83Ft
6	Track Width	8.33Ft
7	Lock-to-lock time	4.00s
8	Max Wheel Angle	45.00°

0 20 40 80
SCALE: 1" = 40'

N

P:\01-Portland\SEA (Scott Edwards Architecture)\SEA-166 (Eureka Public Works)\SEA166-DWGS\Exhibits\Truck Turning\TILLER TRUCK\ SEA166 TRUCK TURNING EXHIBIT TILLER TRUCK.dwg

DATE	NO.	DESCRIPTION

REVISIONS

DESIGNED: GLU
DRAWN: GLU
CHECKED: AJS
DATE: 8/28/2023

Harper Houf Peterson Righellis Inc.
ENGINEERS • PLANNERS
LANDSCAPE ARCHITECTS • SURVEYORS
205 SE Spokane Street, Suite 200, Portland, OR 97202
phone: 503.221.1131 www.hhpr.com fax: 503.221.1171

TRUCK TURNING EXHIBIT - TILLER TRUCK

EUREKA PUBLIC WORKS

EUREKA, CALIFORNIA

SHEET NO. EX-5

JOB NO. SEA-166

City of Eureka

Summary of vehicles and equipment that receive routine service/repair at the Fleet Maintenance Shop.

Space allocation analysis may include:

Entry and exit access for vehicles to Fleet Maintenance Shop,

Parking areas before and after maintenance service,

Circulation for drive lanes and ability for large vehicles to safely back-up or turn around.

	Service Truck/Car Small/Mid	Service Truck Large	Equipment Mid-Size	Vehicles/Equipment Oversized Large	Other: Generator, Pump, Chainsaw, Jackhammer	Total # of Units by Department
	parked 162SF Drive Aisle 24 FT	parked 225 SF Drive Aisle 40 FT	parked 225 SF Drive Aisle 40 FT	parked 300 SF Drive Aisle 40 FT	N/A	
Not Assigned	0	0	0	0	1	1
Building	2	0	0	0	0	2
Code Enforcement	5	0	0	0	0	5
Engineering	8	0	0	0	0	8
Facilities	4	6	0	0	1	11
Fire	3	1	8	11	9	32
Fleet Maintenance	5	1	2	1	1	10
Info Technology	2	0	0	0	0	2
Marina	0	4	7	3	2	16
Parks	3	8	14	2	8	35
Police	33	26	4	3	2	68
Recreation	3	0	0	0	0	3
Wastewater Collection	1	6	9	7	16	39
Wastewater Treatment	7	3	8	1	3	22
Streets	2	6	10	18	15	51
Uplift	6	3	0	0	0	9
Waster Distribution	4	4	3	7	12	30
Water Treatment	2	1	2	0	0	5
Zoo	1	0	3	0	2	6
Subtotal by Type	91	69	70	53	72	355

Appendix F

Geotechnical Investigation

LACO

August 7, 2023

8247.47

City of Eureka
531 K Street
Eureka, California 95501

Attention: Brian Gerving

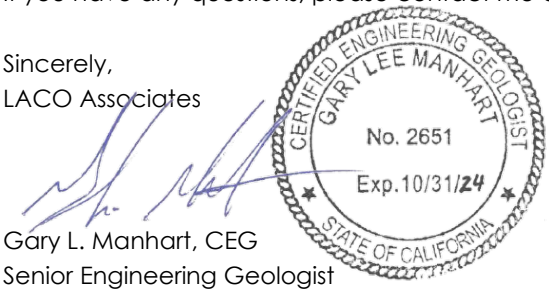
Subject: Geotechnical Exploration and Geohazard Report
City of Eureka New Operations Center, Eureka, California

Dear Mr. Gerving:

LACO Associates (LACO) is pleased to submit this report presenting the results of our Geotechnical Exploration and Geologic Hazards Evaluation for the proposed new development at the property identified as Assessor's Parcel Number (APN) 019-341-007, and -008, located east of Broadway Street and south of the Ocean View Sunset Memorial Cemetery in Eureka, California.

If you have any questions, please contact me at (707) 443-5054.

Sincerely,
LACO Associates



Gary L. Manhart, CEG
Senior Engineering Geologist
CEG No. 2651; Exp. 10/31/24

GLM:hjc

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Geotechnical Exploration and Geohazard Report

City of Eureka New Operations Center
Eureka, California

August 7, 2023

Prepared for:
City of Eureka

Prepared By:
LACO Associates, Inc.
21 W Fourth Street
Eureka, California 95501
707-443-5054

Project No. 8247.47

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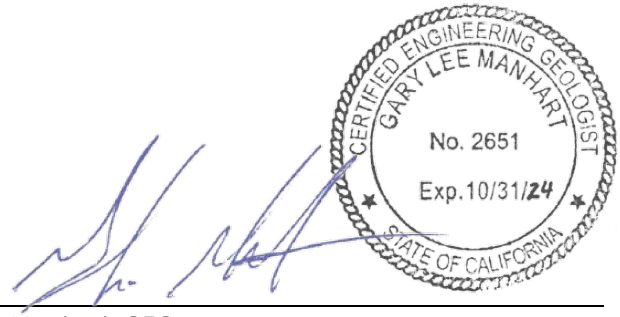

Gary L. Manhart, CEG
Senior Engineering Geologist
CEG No. 2651; Exp. 10/31/24

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Figure 2 Site Map
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Appendix 1

Boring Logs

Appendix 2

Laboratory Test Results

Appendix 3

Liquefaction Analysis

Appendix 4

ASFE Brochure

1.0 INTRODUCTION

This report presents the results of a Geotechnical Exploration and Geologic Hazards Evaluation, performed by LACO Associates, Inc. (LACO) for a proposed development at the property identified as Assessor's Parcel Numbers (APNs) 019-341-007, and -008, located east of Broadway Street and south of the Ocean View Sunset Memorial Cemetery in Eureka, California ("the Site", see Figure 1 – Location Map). The following Geotechnical Exploration and Geologic Hazards Evaluation Report has been prepared to support the design and construction of the proposed Site improvements.

The proposed development will include the construction of a 20,000-square foot (sf) two-story office building, a 21,000-sf one-story warehouse, a 10,000-sf one-story fleet building, and associated parking lots and driveways. The planned buildings will be of wood or light metal frame construction. To prepare the building, site cuts and fills of up to 5 feet are anticipated.

Our scope of services is based on correspondence with Katie Marsolan with the City of Eureka (Client).

1.1 Scope of Services

As described in the City of Eurekas Task Order dated May 31, 2023, our scope of services consisted of the following:

- Reviewing geologic soils reports and topographic maps as well as any additional information in LACO's database;
- Installation of up to two geologic borings to a maximum depth of 50 feet by a licensed drilling contractor under the supervision of a LACO-field geologist. LACO logged soils encountered during boring installation and obtain bulk soil samples for laboratory testing;
- Performing laboratory tests to assess soil classification, bearing capacity, strength, soil cohesion, and gradation of surface soils, as appropriate. Soil testing requirements were determined by a Professional Geologist, Certified Engineering Geologist, and/or Professional Engineer following field work and after examining soil samples in the lab;
- Performing engineering analyses to develop conclusions and recommendations regarding suitable foundation type(s), bearing capacity, estimates of foundation settlement, design criteria for the recommended foundation type, lateral earth pressures, drainage, and construction considerations that may include the following as applicable:
    - Suitability of on-site material for fill
    - Fill placement and restrictions
    - Cut and fill slopes
    - Quantitative liquefaction analysis if indicated based on drilling data
    - Seismic Coefficients as provided by Structural Engineers Association of California and OSHPD Seismic Design Maps
    - Construction consideration based on the preceding; and
- Recording the results of our exploration and analysis in this technical memorandum.

1.2 Field Exploration Program

Our initial engineering geologic reconnaissance was performed on June 27, 2023. Our subsurface exploration was performed on July 5, 2023, and included drilling, sampling, and logging of three exploratory borings at

the approximate locations shown on Figure 2 – Site Map. Borings were advanced with a hollow stem auger rig by Fisch Drilling to a maximum depth of 26.5 feet below ground surface (bgs).

Our geologist logged the borings and obtained samples of the materials encountered. Soils were logged in general accordance with the American Society for Testing and Materials (ASTM) Test Procedure D2488 Visual-Manual Procedures. The boring logs have been included in Appendix 1 and their location is shown in Figure 2.

Soil samples were collected with a 2-inch outside diameter (OD) Standard Penetration Test (SPT) sampler driven with a 140-pound auto-trip hammer falling 30 inches. The number of hammer blows required to drive the samplers is presented on the boring logs. Additional soil samples were collected by 30-inch Shelby tubes and grab sampling.

1.3 Laboratory Testing

Disturbed and undisturbed soil samples collected during the field exploration were submitted to LACO's materials testing laboratory. Laboratory tests consisted of the following:

- Particle Size Analysis – Finer than No. 200 Sieve (ASTM D1140)
- Direct Shear (ASTM D-3080)
- Sieve Analysis (ASTM C-136)
- Moisture Content (ASTM D-2216)
- In-Place Dry density (ASTM D-2937)

Laboratory test results are included as Appendix 2; they are summarized on the boring logs and in Table 1, below.

Table 1. Summary of Laboratory Test Results

Boring	Depth (feet bgs)	USCS Soil Type	ASTM D-1140	ASTM D-3080		ASTM C-136	ASTM D-2216	ASTM D-2937
			Fines Content (% finer than No. 200 sieve)	C-intercept Cohesion (psf)	Internal angle of Friction phi (degree)	Sieve Analysis (% finer than No. 200 sieve)	Moisture Content (%)	Dry Density pcf
GB-1	2.5	SP-SM	-	354	37.6	-	-	-
GB-1	5	SP	-	-	-	7.0	-	-
GB-1	10	SP-SM	13.3	-	-	-	-	-
GB-2	2.5	SP	-	-	-	-	9.3	93.2
GB-2	5	SP-SM	5.0	-	-	-	-	-
GB-3	7.5	SP-SM	-	-	-	-	10.0	93.7
GB-3	10	SP	-	-	-	3.4	-	-

USCS: Unified Soil Classification System
pcf: pounds per cubic foot
feet bgs: feet below ground surface

LACO will archive the soil samples collected for this project for 60 days following the issuance of this report. Unless directed otherwise by the Client, all samples will be discarded after the 60-day archive period.

2.0 SITE AND SUBSURFACE CONDITIONS

2.1 Topography and Site Conditions

The Site gently slopes to the west towards Broadway Street and is accessed by an unnamed road south of Ocean View Sunset Memorial Cemetery in Eureka, California (Figure 2- Site Map). The Site is bordered by mixed commercial properties to the west and south, and residential properties to the east. The Site is currently a grass-covered field with some scattered trees (Figure 2- Site Map).

2.2 Geologic Setting

The Site is located on an uplifted marine terrace in the Coast Ranges Geomorphic Province of Northern California (California Geologic Survey, CGS, 2002). According to published geologic maps (McLaughlin et al., 2000), the Site is underlain by Holocene-aged marine and non-marine alluvial deposits (Qal) comprising gravel, sand, silt, and clay deposited in marine and fluvial settings. A relevant portion of the geologic map is presented as Figure 3 - Geologic Map.

2.3 Seismicity

The Site is in a seismically active region where large earthquakes may be expected to occur during the economic life span (50 years) of the planned improvements. The seismicity of the area is dominated by the presence of the Cascadia Subduction Zone (CSZ) wherein oceanic crust of the Juan de Fuca/Gorda plate is being actively subducted beneath the leading edge of the North American plate. Plate convergence along the Gorda segment of the CSZ is occurring at a rate of about 30 to 40 millimeters per year (mm/yr) (Heaton and Kanamori, 1984), with a convergence rate of 35 mm/yr for the entire segment of the CSZ (Petersen et al., 1996). Upper plate crustal deformation associated with the subduction of the Gorda plate is expressed as a 90-kilometer (km)-wide fold and thrust belt that comprises the accretionary complex along the North American plate margin (Carver, 1987).

Convergence within the accretionary complex is accommodated by growth of the fold and thrust belt (Carver and McCalpin, 1996). Northwest-striking thrust faults, northeast-dipping thrust faults, and fault-related folds form imbricate thrust fans that merge into sole thrusts that extend into or near the interface between the Gorda and North American plates (Clarke and Carver, 1992). Where the fold and thrust belt extends on land between Cape Mendocino and Big Lagoon, a cumulative slip of greater than 15 km has been estimated from measured vertical separations of lower Pleistocene sediments across faults (Kelsey and Carver, 1988). Coupled with displacements of upper Pleistocene marine terraces, these relations indicate the fold and thrust belt is accommodating at least 20 mm/yr of northeast-southwest horizontal contraction (Clarke and Carver, 1992). The apparent youthfulness of these structures indicates the subduction zone is strongly coupled and compressive deformation within the North American plate margin is active (Clarke and Carver, 1992).

The closest active faults are the Little Salmon fault zone and the Fickle Hill fault, both located approximately 5 km south and 15 km north of the Site, respectively. Other potentially active faults in the vicinity of the Site include the Mad River fault zone (24 km) to the north and Cascadia megathrust, which is located approximately 65 km west of the Site (California Division of Mines and Geology, CDMG, 2000). The Site is not in a "Fault Rupture Hazard Zone" (Bryant and Hart, 2007), or within an area currently designated as a "Seismic Hazard Zone" by the State (CDMG, 2000).

3.0 SUBSURFACE CONDITIONS

Overall, soils encountered during our subsurface exploration were consistent with those anticipated based on our review of published geologic maps of the area (McLaughlin et al., 2000). Our exploration indicates that the Site is generally blanketed by a layer of topsoil, underlain by alluvial deposits to the total depth explored (26.5 feet bgs). Topsoil was observed to consist of approximately 2.5 feet of loose silt and sand. The underlying alluvial deposits were observed to consist of heterogeneous layers of medium dense to dense poorly graded sand with silt and poorly graded sand to the maximum depth explored. Fill was encountered in boring GB-3 to approximately 1.5 feet bgs.

3.1 Groundwater Conditions

Groundwater was encountered at the time of drilling in our borings at depths of between 14 and 21 feet bgs. Review of groundwater data at a location northeast of the Site found on the California Geotracker website, groundwater can get as high as 6 feet bgs seasonally.

4.0 GEOLOGIC HAZARD ASSESSMENT

Potential geologic and soil hazards assessed for the project Site include seismic ground shaking; liquefaction and related phenomena; settlement; and tsunami inundation. An assessment of these and other potential hazards is presented below.

4.1 Seismology and Seismic Ground Motions

As noted in Section 3.3 of this report, the Site is in a seismically active area. Given the proximity of the proposed structures to active seismic sources (Cascadia Subduction Zone and other active faults), there is a high probability that the Site will experience strong ground shaking during the economic lifespan of the proposed development. The spectral response accelerations for seismic analysis and design of the proposed structure, as prescribed by the 2019 California Building Code (CBC) and ASCE 7-16, are presented in Section 7.3 of this report.

4.1.1 Historic Seismicity

The project Site is in an area of historical seismic activity with a number of large earthquakes occurring during historic times. As cataloged by Toppozada and Branum (2002) and the United States Geologic Survey (USGS, 2019), the epicenters of 25 significant historic earthquakes greater than magnitude 6 are within 100 km of the Site.

Based on mapping by Toppozada et. al. (2000), the Site is within an area that has experienced one earthquake with a Modified Mercalli Intensity (MMI) of VII or greater between 1800 and 1999. This earthquake occurred on November 13, 1860, with a magnitude of 5.5. The epicenter was in the Samoa area, approximately 8 km southwest of the Site. The Humboldt Times reported that the earthquake resulted in the cracking of plaster walls and the settlement of chimneys in the Site vicinity.

4.2 Co-Seismic Ground Deformation

4.2.1 Surface Fault Rupture

The Site is not located within an Alquist-Priolo earthquake fault zone and, as such, does not require a trench-based fault rupture hazard evaluation (CDMG, 2000). Based on the distance between the Site and the closest known active fault, the potential for surface fault rupture to occur within the Site is low.

4.2.2 Liquefaction

To evaluate liquefaction potential, we followed the general guidelines presented in Special Publication 117A (CGS, 2008). The Site is located in an area considered to have a low liquefaction potential (CDMG, 1995)[1]. As discussed in Section 4.0 of this report, in general, the stratigraphy encountered consisted of medium dense to dense sand with silt and poorly graded sand. The Site and nearby topography are gently sloping but no slope breaks were observed. Based on groundwater data discussed in Section 3.1, we used 6 feet in the modeling for liquefaction.

SPT boring GB-1 data was used to evaluate the liquefaction potential, related dynamic settlement, and lateral spreading at the Site using the liquefaction analysis program CLiq Version 1.5.1.26 by Geologismiki. Table 2 presents the method and seismic parameters used in the liquefaction analysis.

Table 2. Liquefaction Analysis Input Parameters

Calculation Method	Boulanger & Idriss, 2014
Maximum Moment Magnitude (closest fault with largest magnitude)	9.0
PGA_M	1.33
Depth to Groundwater	6 ft

Liquefaction analysis results are presented in Appendix 3 and summarized in Table 3, below.

[1] A state of soil liquefaction occurs when, as a result of cyclic fluctuations in pore fluid pressure, sediment grains lose contact with one another, causing a momentary loss of effective stress and consequently of shear strength. Liquefaction is most commonly initiated by earthquake ground motions. Soils in a saturated, loose state and less than approximately 50 feet bgs are the most susceptible to liquefaction.

Table 3. Summary Results of Liquefaction Assessment GB-1

Depth	Blow Count (N)	Classification	Overall Probability of Liquefaction* (I_L)	Estimated Vertical Settlement if Liquefaction Occurs (inches)	Estimated Lateral Spreading (inches)
5	20	SP	Not Probable	0.0	0
10	20	SP-SM	Not Probable	0.0	0
15	18	SP	Not Probable	0.0	0
20	20	SP	Not Probable	0.0	0
25	20	SP	Not Probable	0.0	0
			Total anticipated settlement in GB-1	**0.0**	0

*Liquefaction potential according to Iwasaki (I_L)

4.3 Slope Instability/Landsliding

Given the relatively flat natural slopes on and in the vicinity of the Site, we consider the potential for conventional slope instability (i.e., non-liquefaction-induced lateral spreading) to adversely affect most of the proposed improvements to be negligible.

4.4 Flood Inundation

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps, Map Number 06023C0839G, effective June 21, 2017, the proposed development is outside of the Special Flood Hazard Area. Based on this FEMA flood hazard mapping and the Site elevation, the risk of flooding impacting the study area is low.

4.5 Tsunami Inundation

According to the CGS Tsunami Inundation Map for Emergency Planning: Eureka Quadrangle (CGS, 2021), the Site is not located in an area anticipated to experience inundation. Based on this mapping and the Site elevation, the risk of tsunami inundation is considered to be moderately low.

4.6 Expansive Soils

Expansive soils generally comprising cohesive, fine-grain clay soils represent a significant structural hazard to buildings founded on them, especially where seasonal fluctuations in soil moisture occur at the foundation-bearing depth. Soils encountered at the Site typically consist of poorly graded sands. As such, in our opinion, the risk of expansive soils detrimentally affecting the proposed development at the Site is low.

4.7 Shallow Groundwater

As noted in Section 3.1 of this report, our exploration indicates groundwater is 14 to 20 feet bgs. Data from a nearby environmentally regulated site indicates groundwater can get as high as 6 feet bgs seasonally. Shallow groundwater affecting the proposed development at the Site is considered low. However, if groundwater accumulates in foundation excavations, it should be removed prior to concrete placement.

5.0 CONCLUSIONS

Based on the results of our exploration program, we conclude the project is feasible from a geotechnical standpoint, provided the recommendations of this report are incorporated into the project design and construction. The primary geologic and geotechnical considerations affecting the planned improvements are as follows:

- The potential for strong seismic ground shaking at the Site; and
- The presence of loose soils blanketing the Site;

It will be necessary to design and construct the proposed improvements in strict adherence with the current standards for earthquake-resistant construction. The potential for strong ground shaking can be addressed by designing the planned improvements utilizing the seismic design parameters presented in Section 7.3 of this report. The structure should be designed to resist/accommodate the estimated total and differential static settlement.

We anticipate that the one-story and two-story buildings will be supported on a combination perimeter, reinforced concrete spread footing, and slab-on-grade foundation system. Foundation support for the planned new structures can be provided by the medium dense to dense poorly graded sand with silt or poorly graded sand underlying the Site. Concrete slabs and flatwork can be supported by an engineered fill pad detailed in the Site Preparation and Grading recommendations.

6.0 RECOMMENDATIONS

6.1 Site Preparation and Grading

Within the new building and exterior flatwork footprint and at least 5 feet beyond existing pavement, foundations, irrigation lines, and underground utilities not designated to remain should be properly demolished and removed from the Site. Areas should then be stripped of vegetation and topsoil containing organic material; bushes and designated trees should be removed, and their roots grubbed. These materials are not suitable for reuse as engineered fill in building areas. We estimate the depth of stripping will be approximately 12 inches. In areas to be graded weak/loose soil should also be removed. Prior to placing fill, the exposed soil excavation bottom should be observed by a qualified professional. The resulting subgrade should then be scarified to a depth of 6 inches, moisture conditioned, and compacted as described in Table 4 (below).

6.1.1 Utility Trench Backfill

Trench backfill quality and compaction should generally conform to the requirements of Section 6.1.2 of this report. Where trenches closely parallel a shallow foundation and the trench bottom is within a two horizontal to one vertical (2H:1V) plane projected outward and downward from the foundation, concrete slurry (2-sack minimum) should be used to backfill that portion of the trench below this plane. The use of slurry backfill is not required where a narrow trench crosses a footing at or near a right angle.

6.1.2 Structural Fill

Material used as fill should be free of organic or other deleterious material and rocks larger than 3 inches in greatest dimension, and conform to the following requirements:

Plasticity Index:	15 percent or less
Liquid Limit:	40 percent or less
Percent Passing No. 200 sieve:	50 maximum, 5 minimum

Our exploration indicates that most on-site materials are suitable for use as fill. Following excavation operations and prior to placement, material proposed for use as fill should be observed, tested, and approved by a qualified professional for conformance to these requirements. Fill should be placed in lifts no greater than 8 inches in loose thickness, moisture conditioned, and compacted as described in Table 4.

Table 4. Soil Compaction Recommendations

Fill Element	Relative Compaction*	Moisture Content*
General fill - raising of site grades	90 percent	2 percent wet of Optimum
Upper 6 inches of subgrade beneath hardscape	90 percent	2 percent wet of Optimum
Upper 6 inches of subgrade in pavement areas	95 percent	2 percent wet of Optimum
Aggregate base rock beneath hardscape	95 percent	Near Optimum
Pipe bedding and utility trench backfill	90 percent	Near Optimum

*****Relative compaction refers to the ratio of the in-place dry density of the soil to the maximum dry density as described in the latest edition of the ASTM D1557 compaction test procedure. Optimum moisture content is the water content as a percentage of the dry weight of the soil corresponding to the maximum dry density.

6.1.3 Surface Drainage

The Site should generally be graded to provide positive drainage away from foundations. A minimum gradient of 3 percent should be maintained for hardscape areas within 5 feet of a structure where this does not conflict with Americans with Disabilities Act (ADA) design requirements. A 5-percent gradient should be maintained for landscaped areas not designed to receive foot traffic within 5 feet of a structure. The grading or landscaping design and construction should not allow water to pond on the Site within a minimum of 10 feet from any engineered structure, nor to migrate beneath any structure. Runoff from hardscaped areas, roofs, patios, and other impermeable surfaces should be contained, controlled, and collected in a tight-line pipe that outlets into the Site storm drainage or infiltration system.

6.2 Foundations

Foundation design and construction details for the proposed building have not yet been developed nor provided to us for this project. We anticipate that the one-story or two-story buildings will be supported on a combination perimeter, reinforced concrete spread footing, and slab-on-grade foundation system. Individual spread footings may be needed at isolated locations within the interior of the building to support column and/or wall loads. This type of foundation system is deemed suitable for the Site soil conditions encountered, provided that it is designed and constructed in accordance with the minimum standards of the current edition of the CBC (2022), and the recommendations (including earthwork) contained herein. For design purposes, use the maximum allowable bearing pressures presented in Table 5.

Table 5. Maximum Allowable Bearing Pressures and Adhesion for Perimeter or Slab Foundations

Loading Condition	Maximum Allowable Bearing Pressure (psf)
Dead plus long-term live loads	2,000
Total, including Wind or Seismic	2,660

Lateral load resistance may be developed via: (1) skin friction between the footing bottoms and underlying soil; and (2) passive resistance between the vertical faces of footings. For design, use a coefficient of friction of 0.25 pounds per square foot (psf), and a passive pressure of 150 pounds per cubic foot (pcf) equivalent fluid pressure. Passive pressure should be neglected in the upper 1 foot of soil unless confined by concrete slabs or pavements. If friction and passive resistance are to be combined, reduce the lesser value by 50 percent.

In the event that the proposed building foundation is a concrete slab-on-grade with thickened edge, the floors should be a minimum thickness of 4 inches and should be reinforced and underlain by at least 4 inches of clean (less than 5 percent fines), 0.75-inch gravel (termed "slab base rock") to act as a capillary moisture break. The gravel should be overlain by a vapor retarder (Stego™ wrap or equivalent) to reduce the possibility of moisture migration through the concrete floor. Joints between membrane sheets and utility piping openings should be lapped and taped. Care should be taken during slab construction to protect the plastic membrane against punctures.

At the time of the writing of this report, anticipated building loads were not provided to us for this project. Therefore, we are assuming a relatively moderately loaded, two-story, concrete and wood-framed or light metal structure will be designed and supported on perimeter and spread footings or slab-on-grade foundation elements, static settlement should not be more than approximately 1 inch along a foundation element, with differential settlement over distances of 40 feet expected to be on the order of 0.5 inches.

Footings adjacent to existing utility trenches or other footings should be deepened enough to bear below a 1:1 (horizontal:vertical) plane extending upwards from the bottom edge of the utility trench or footing excavation. A qualified professional should observe the footing excavations prior to the placement of reinforcing steel and concrete forms to check that they are founded in suitable bearing materials and have been properly cleaned of loose soil.

6.3 Seismic Design Parameters

Earthquake design parameters presented herein are based on the CBC and the standard "Minimum Design Loads and Associated Criteria for Buildings and Other Structures," (ASCE 7-16), which, in turn, is based on a maximum considered earthquake ground motion, defined as the motion caused by an event with a 2-percent probability of exceedance within a 50-year period (recurrence interval of approximately 2,500 years). We used site parameters of location (40.76994946°, -124.18774649°), site class D, and risk level II as project input to Seismic Design Maps tool co-developed by the Structural Engineers Association of California (SEAOC) and California's Office of Statewide Health Planning and Development (OSHPD) (2022). Values of those inputs and model outputs are presented in Table 6.

We refer the building designer to the exemption listed in ASCE 7-16 Supplement 3 to determine whether a site-specific ground motion analysis is required.

Table 6. Seismic Design Parameters

Site Class	F_a	F_v	S_S	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}	Ts
D	1.0	1.7	2.712	1.09	2.712	1.853	1.808	1.235	0.683

* F_v, S_{M1}, and S_{D1} may only be used for calculation of T_s.

F_a – Short period coefficient to modify 0.2-second period of mapped spectral response accelerations for Site Class.
F_v – Long period coefficient to modify 1.0-second period of mapped spectral response accelerations for Site Class.
S_S – Mapped spectral response acceleration, 5 percent damped, at 0.2-second period for Site Class.
S_1 – Mapped spectral response acceleration, 5 percent damped, at 1.0-second period for Site Class (in %g).
S_{MS} – Maximum considered earthquake spectral response acceleration, 5 percent damped, at 0.2-second for Site Class effects (in %g).
S_{M1} – Maximum considered earthquake spectral response acceleration, 5 percent damped, at 1.0-second period for Site Class effects (in %g).
S_{DS} – Design spectral response acceleration, 5 percent damped, at 0.2-second period (in %g).
S_{D1} – Design spectral response acceleration, 5 percent damped, at 1.0-second period (in %g).
Ts – Transition period, ratio S_{D1}/S_{DS}.

6.4 Construction Considerations

6.4.1 Temporary Slopes and Trench Excavations

The contractor is responsible for the stability of temporary slopes and trenches excavated at the Site and the design and construction of any required shoring. Shoring and bracing should be provided in accordance with all applicable local, state, and federal safety regulations, including the current Occupational Safety and Health Administration's (OSHA) excavation and trench safety standards. Because of the potential for variable soil conditions, field modifications of temporary cut slopes may be required. Unstable materials encountered on the slopes during the excavation should be trimmed off, even if this requires cutting the slope back at flatter inclinations.

7.0 FUTURE GEOTECHNICAL SERVICES

7.1 Plan Review

To better assure conformance of the final design documents with the recommendations contained in this report, LACO's geotechnical department should review the completed project plans prior to construction. The plans should be made available for our review as soon as possible after completion so we can better assist in keeping your project schedule on track.

8.0 LIMITATIONS

This report has been prepared for the exclusive use of the Client, its design team, contractors, consultants, and appropriate public authorities for specific application to the proposed Site improvements. LACO has exercised a standard of care equal to that generated for this industry to ensure the information contained in this report is current and accurate. The opinions presented in this report are based upon information obtained

from subsurface excavations, a site reconnaissance, review of geologic maps and data available to us, and upon local experience and engineering judgment, and have been formulated in accordance with generally accepted geotechnical engineering practices that exist in California at the time this report was prepared. In addition, geotechnical issues may arise that are not apparent at this time. No other warranty, expressed or implied, is made or should be inferred. A brochure prepared by ASFE (Association of Firms Practicing in the Geosciences) has been included in Appendix 4 of this report. We recommend that all individuals reading this report also read this brochure.

Data generated for this report represents information gathered at that time and at the widely spaced locations indicated. Subsurface conditions may be highly variable and difficult to predict. As such, the recommendations included in this report are based, in part, on assumptions about subsurface conditions that may only be observed and/or tested during subsequent project earthwork. Accordingly, the validity of these recommendations is contingent upon review of the subsurface conditions exposed during construction in order to check that they are consistent with those characterized in this report. Upon request, LACO can discuss the extent of (and fee for) observations and tests required to check the validity of the recommendations presented herein.

The opinions presented in this report are valid as of the present date for the property evaluated. Changes in the condition of the property can occur over time, whether due to natural processes or the works of man, on this or adjacent properties. In addition, changes in applicable standards of practice can occur, whether from legislation or the broadening of knowledge. Accordingly, the opinions presented in this report may be invalidated, wholly or partially, by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years, nor should it be used, or is it applicable, for any property other than that evaluated. This report is valid solely for the purpose, site, and project described in this document. Any alteration, unauthorized distribution, or deviation from this description will invalidate this report. LACO assumes no responsibility for any third-party reliance on the data presented. Additionally, the data presented should not be utilized by any third party to represent data for any other time or location.

9.0 REFERENCES

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FIGURES

Figure 1 **Location Map**

Figure 2 **Site Map**

Figure 3a & b **Geologic Map**

LACO

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1-800-515-5054 www.lacoassociates.com

PROJECT	Geologic Soils Report	BY GLM	FIGURE 1
CLIENT	City Of Eureka	DATE 8/2/23	
LOCATION	Off Broadway, Eureka, California	CHECK	JOB NO. 8247.47
	Location Map	SCALE 1" = 2000'	

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EUREKA UKIAH SANTA ROSA CHICO

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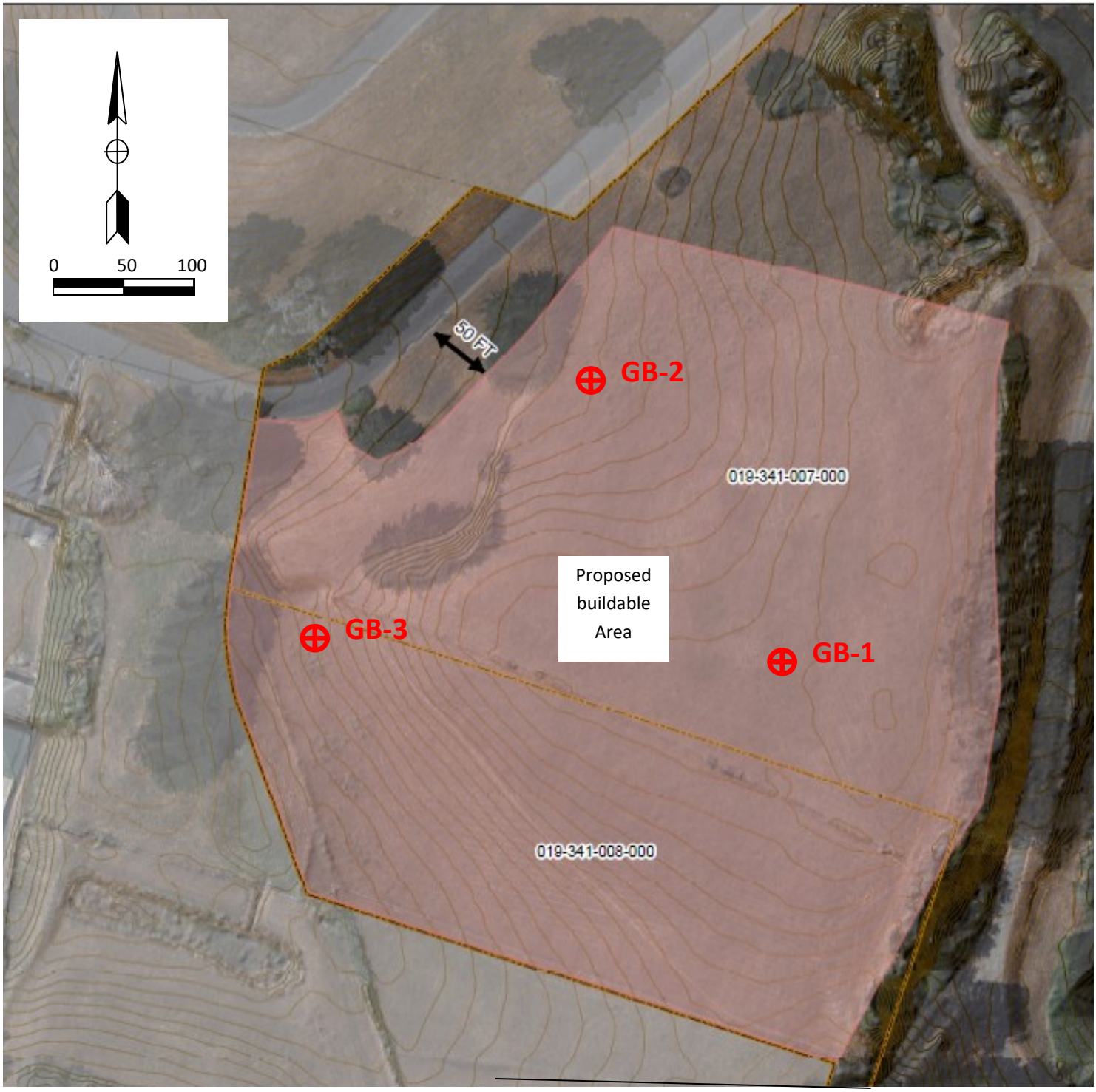
PROJECT	Geologic Soils Report	BY GLM	FIGURE 2
CLIENT	City Of Eureka	DATE 8/2/23	
LOCATION	Off Broadway, Eureka, California	CHECK	JOB NO. 8247.47
	Site Map	SCALE 1" = 100'	



Legend

GB-1 Boring Location

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PROJECT	Geologic Soils Report	BY GLM	FIGURE 3a
CLIENT	City Of Eureka	DATE 8/2/23	
LOCATION	Off Broadway, Eureka, California	CHECK	JOB NO. 8247.47
	Geologic Map	SCALE 1" = 4000'	

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PROJECT	Geologic Soils Report	BY GLM	FIGURE 3b
CLIENT	City Of Eureka	DATE 8/2/23	
LOCATION	Off Broadway, Eureka, California	CHECK	JOB NO. 8247.47
	Geologic Map Legend	SCALE None	

DESCRIPTION OF MAP UNITS

QUATERNARY AND TERTIARY OVERLAP DEPOSITS

- Qal — Alluvial deposits (Holocene and late Pleistocene?)
- Qm — Undeformed marine shoreline and aolian deposits (Holocene and late Pleistocene)
- Qt — Undifferentiated nonmarine terrace deposits (Holocene and Pleistocene)
- Qls — Landslide deposits (Holocene and Pleistocene)
- QTog — Older alluvium (Pleistocene and [or] Pliocene)
- QTw — Marine and nonmarine overlap deposits (late Pleistocene to middle Miocene)
- Ti — Volcanic rocks of Fickle Hill (Oligocene)

COAST RANGES PROVINCE

FRANCISCAN COMPLEX

-- Coastal Belt --

Coastal terrane(Pliocene to Late Cretaceous)

Sedimentary, igneous, and metamorphic rocks of the Coastal terrane (Pliocene to Late Cretaceous):

- co1 — Melange
- co2 — Melange
- co3 — Broken sandstone and argillite
- co4 — Intact sandstone and argillite
- cob — Basaltic Rocks (Late Cretaceous)
- cols — Limestone (Late Cretaceous)
- m — Undivided blueschist (Jurassic?)

King Range terrane (Miocene to Late Cretaceous)

- Krp — Igneous and sedimentary rocks of Point Delgada (Late Cretaceous)
- m — Undivided blueschist blocks (Jurassic?)

Sandstone and argillite of King Peak (middle Miocene to Paleocene[?]):

- krk1 — Melange and (or) folded argillite
- krk2 — Highly folded broken formation
- krk3 — Highly folded, largely unbroken rocks
- krl — Limestone
- krc — Chert
- krb — Basalt

False Cape terrane (Miocene? to Oligocene?)

- fc — Sedimentary rocks of the False Cape terrane (Miocene? to Oligocene?)

Yager terrane (Eocene to Paleocene?)

Sedimentary rocks of the Yager terrane (Eocene to Paleocene?):

- y1 — Sheared and highly folded mudstone
- y2 — Highly folded broken mudstone, sandstone, and conglomeratic sandstone
- y3 — Highly folded, little-broken sandstone, conglomerate, and mudstone
- Ycgl — Conglomerate

-- Central belt --

Melange of the Central belt (early Tertiary to Late Cretaceous):

Unnamed Metasandstone and meta-argillite (Late Cretaceous to Late Jurassic):

- cm1 — Melange
- cm2 — Melange
- cb1 — Broken formation
- cb2 — Broken formation
- cwr — White Rock metasandstone of Jayko and others (1989) (Paleogene and [or] Late Cretaceous)
- chr — Haman Ridge graywacke of Jayko and others (1989) (Cretaceous?)
- cfs — Fort Seward metasandstone (age unknown)
- cls — Limestone (Late to Early Cretaceous)
- cc — Chert (Late Cretaceous to Early Jurassic)
- bs — Basaltic rocks (Cretaceous and Jurassic)
- m — Undivided blueschist blocks (Jurassic?)
- gs — Greenstone
- c — Metachert
- yb — Metasandstone of Yolla Bolly terrane, undivided
- b — Melange block, lithology unknown

-- Eastern Belt --

Pickett Peak terrane (Early Cretaceous or older)

Metasedimentary and metavolcanic rocks of the Pickett Peak terrane (Early Cretaceous or older):

- ppsm — South Fork Mountain Schist
- mb — Chinquapin Metabasalt Member (Irwin and others, 1974)
- ppv — Valentine Springs Formation
- mv — Metabasalt and minor metachert

Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?)

Metasedimentary and metaigneous rocks of the Yolla Bolly terrane (Early Cretaceous to Middle Jurassic?):

- ybt — Taliaferro Metamorphic Complex of Suppe and Armstrong (1972) (Early Cretaceous to Middle Jurassic?)
- ybc — Chicago Rock melange of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)
- gs — Greenstone
- c — Metachert
- ybh — Metagraywacke of Hammerhorn Ridge (Late Jurassic to Middle Jurassic)
- c — Metachert
- gs — Greenstone
- sp — Serpentinite
- ybd — Devils Hole Ridge broken formation of Blake and Jayko (1983) (Early Cretaceous to Middle Jurassic)
- c — Radiolarian chert
- ybi — Little Indian Valley argillite of McLaughlin and Ohlin (1984) (Early Cretaceous to Late Jurassic)

Yolla Bolly terrane

- yb — Rocks of the Yolla Bolly terrane, undivided

GREAT VALLEY SEQUENCE AND COAST RANGE OPHIOLITE

Elder Creek(?) terrane

- ecms — Mudstone (Early Cretaceous)

Coast Range ophiolite (Middle and Late Jurassic):

- ecg — Layered gabbro
- ecsp — Serpentinite melange

Del Puerto(?) terrane

Rocks of the Del Puerto(?) terrane:

- dpms — Mudstone (Late Jurassic)

Coast Range ophiolite (Middle and Late Jurassic):

- dpt — Tuffaceous chert (Late Jurassic)
- dpb — Basaltic flows and keratophyric tuff (Jurassic?)
- dpd — Diabase (Jurassic?)
- dpsp — Serpentinite melange (Jurassic?)
- sp — Undivided Serpentinized peridotite (Jurassic?)

KLAMATH MOUNTAINS PROVINCE

Undivided Great Valley Sequence:

- Ks — Sedimentary rocks (Lower Cretaceous)

Hayfork terrane

Eastern Hayfork subterrane:

- eh — Melange and broken formation (early? Middle Jurassic)
- ehls — Limestone
- ehsp — Serpentinite

Western Hayfork subterrane:

- whu — Hayfork Bally Meta-andesite of Irwin (1985), undivided (Middle Jurassic)
- whwg — Wildwood (Chanchelulla Peak of Wright and Fahan, 1988) pluton (Middle Jurassic)
- whwp — Clinopyroxenite
- whji — Diorite and gabbro plutons (Middle? Jurassic)

Rattlesnake Creek terrane

- rcm — Melange (Jurassic and older)
- rcls — Limestone
- rcc — Radiolarian chert
- rcis — Volcanic Rocks (Jurassic or Triassic)
- rcic — Intrusive complex (Early Jurassic or Late Triassic)
- rcp — Plutonic rocks (Early Jurassic or Late Triassic)
- rcum — Ultramafic rocks (age uncertain)
- rcpd — Blocky peridotite

Western Klamath terrane

Smith River subterrane:

- srs — Galice? formation (Late Jurassic)
- srv — Pyroclastic andesite
- srgb — Glen Creek gabbro-ultramafic complex of Irwin and others (1974)
- srpd — Serpentinized peridotite

MAP SYMBOLS

- Contact
- Fault
- Thrust fault
- Trace of the San Andreas fault associated with 1906 earthquake rupture

Strike and dip of bedding:

- Inclined (10, 20)
- Vertical
- Horizontal
- Overturned (10, 20)
- Approximate (20)
- Joint (10)
- Strike and dip of cleavage (10)

Shear foliation:

- Inclined (10)
- Vertical

Folds:

- Synclinal or synformal axis
- Anticlinal or antiformal axis
- Overturned syncline
- Landslide (Qls)

Melange Blocks:

- Serpentinite
- Chert
- Blueschist
- Greenstone
- Fossil locality and number (10)

GEOLOGY OF THE CAPE MENDOCINO, EUREKA, GARBERVILLE, AND SOUTHWESTERN PART OF THE HAYFORK 30 X 60 MINUTE QUADRANGLES AND ADJACENT OFFSHORE AREA, NORTHERN CALIFORNIA (McLaughlin et al., 2000)

APPENDIX 1

Boring Logs

BORING NUMBER GB-1

LACO

CLIENT City of Eureka
PROJECT NAME Operations Building Geotech Evaluation
PROJECT NUMBER 8247.47
PROJECT LOCATION Eureka
DATE STARTED 7/5/23 **COMPLETED** 7/5/23
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR Fisch Drilling
GROUND WATER LEVELS:
DRILLING METHOD GeoProbe 6600 DT
▽ **AT TIME OF DRILLING** 24.00 feet Groundwater Encountered
LOGGED BY GLM **CHECKED BY** GLM
AT END OF DRILLING ---
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%) LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)
0		Sod											
		Topsoil, dark grayish brown, dry to moist, silt, sand loose											
		(SP-SM) Silty sand, moist, medium dense	SH	100		C = 354 Phi = 37.6							
5		Scattered coarse sand, fine gravel											
		(SP) Sand with silt and fine gravel, very plae brown with brownish yellow, moist, medium dense	SPT	89	2-6-14 (20)								7
10		(SP-SM) Silty sand with some scattered pebbles, yellow brown, moist, medium dense	SPT	100	5-10-10 (20)								13
15		Continues - no pebbles	SPT	100	5-8-10 (18)								
20			SPT	100	6-9-11 (20)								
	▽												
25		Saturated	SPT	89	5-8-12 (20)								
		Heaving sand											
		Bottom of borehole at 26.5 feet.											

BORING NUMBER GB-2

LACO

CLIENT City of Eureka
PROJECT NAME Operations Building Geotech Evaluation
PROJECT NUMBER 8247.47
PROJECT LOCATION Eureka
DATE STARTED 7/5/23 **COMPLETED** 7/5/23
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR Fisch Drilling
GROUND WATER LEVELS:
DRILLING METHOD GeoProbe 6600 DT
▽ **AT TIME OF DRILLING** 15.00 feet Groundwater Encountered
LOGGED BY GLM **CHECKED BY** GLM
AT END OF DRILLING ---
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%) LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)
0		Sod											
		Topsoil, very dark gray brown, silt, sand, moist, loose											
		(SP) Silty sand, light yellow brown, moist, medium dense	SH	111				93	9				5
5		(SP-SM) Sand with silt, some scattered fine gravel, light yellowish brown, moist, medium dense	SPT	100	3-13-18 (31)								
10		No fine gravel	SPT	39	5-7-11 (18)								
15		▽ Light gray	SPT	33	1-2-5 (7)								
20			SPT	0	5-5-7 (12)								

Bottom of borehole at 21.5 feet.

BORING NUMBER GB-3

LACO

CLIENT City of Eureka
PROJECT NAME Operations Building Geotech Evaluation
PROJECT NUMBER 8247.47
PROJECT LOCATION Eureka
DATE STARTED 7/5/23 **COMPLETED** 7/5/23
GROUND ELEVATION _____ **HOLE SIZE** inches
DRILLING CONTRACTOR Fisch Drilling
GROUND WATER LEVELS:
DRILLING METHOD GeoProbe 6600 DT
▽ **AT TIME OF DRILLING** 15.00 feet Groundwater Encountered
LOGGED BY GLM **CHECKED BY** GLM
AT END OF DRILLING ---
NOTES

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	TESTS AND REMARKS	Pocket Penetrometer (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS (%) LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	FINES CONTENT (%)
0		Fill											
		(SP-SM) Silty sand, yellow brown, loose											
5		(SP-SM) Silty sand, olive brown, moist, loose, silty sand, random fine gravel, light yellow brown, moist, loose	SPT		2-3-3 (6)								
		Scattered fine and medium gravel	SH	94				94	10				
10		(SP) Poorly graded sand, light olive brown, moist, medium dense, no gravel	SPT	89	4-7-8 (15)								3
15	▽	(SP) Poorly graded sand, brown, wet, medium dense	SPT	100	4-7-9 (16)								
20		Heaving sands	SPT		2-7-11 (18)								

Bottom of borehole at 21.5 feet.

APPENDIX 2

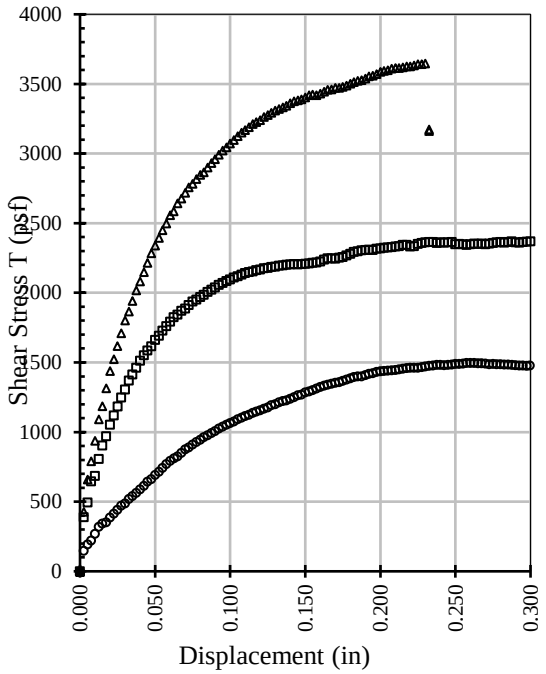
Laboratory Test Results

LACO

DIRECT SHEAR
ASTM D-3080

PROJECT	Operations Bldg Geotech Eval		JOB NO. 8247.47	SHEET	
CLIENT	City of Eureka		SAMPLE ID 23-056EK	1 of 1	
LOCATION	GB-1 at 2.5'	TEST BY AMC	DATE 7/25/23		
SOIL TYPE	Sand w/ fines	CHECKED BY	CHECK DATE		

Shear Stress -vs- Displacement



Sample Dimensions

Diameter (inch)	2.5
Height (inch)	1.0

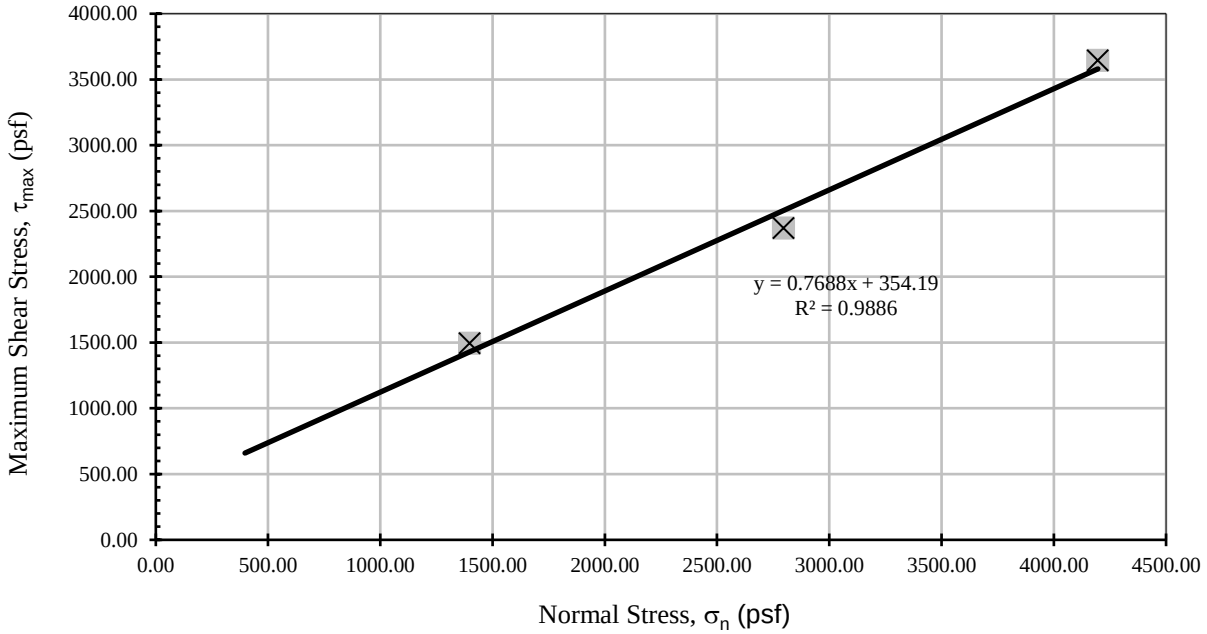
	Point 1	Point 2	Point 3	Average
Water Content (%)	11.6	10.9	11.2	11.3
Dry Density (pcf)	96.4	93.8	91.2	93.8
Void Ratio*	0.7	0.8	0.8	0.8
Peak Shear Stress (psf)	1495.1	2370.1	3646.4	

*Void ratio calculation assumes a specific gravity of 2.65

c - intercept (cohesion)	354
phi (internal friction angle)	37.6°

Notes: Undisturbed Shelby

Maximum Shear Stress -vs- Normal Stress



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MOISTURE / DENSITY
ASTM D-2216 / 2937

PROJECT	CoE Operations Bldg Geotech Eval			JOB NO. 8247.47	SHEET 1 of 1
CLIENT	City of Eureka			LAB ID 23-056EK	
LOCATION	Eureka, CA	TEST BY	AMC	DATE	7/20/23
SOIL TYPE	VARIOUS	CHECKED BY		CHECK DATE	

Sample Location	GB-3	GB-2						
Sample Depth (ft bgs)	7.5	2.5						
Soil Type (USCS)	VARIOUS	VARIOUS						
Moisture Content (%)	10.0	9.3						
Wet Density (pcf)	103.1	101.8						
Dry Density (pcf)	93.7	93.2						
Void Ratio*	0.8	0.8						
% Saturation	34.5	31.6						

*Void ratio calculation assumes a specific gravity of 2.65

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Ukiah: 311 South Main Street · Ukiah, California 95482 · 707-462-0222 · FAX 707-462-0223
800-515-5054 · www.lacoassociates.com

SIEVE ANALYSIS WORKSHEET (ASTM C-136)

Project No.	8247.47	Material Desc.	Sand	Tested By:	AMC	Date: 7/20/2023
Client:	City of Eureka	Manufacturer	Native	Checked By:		Date:
Sample ID:	23-056EK	Sample Location	GB-1 @ 5.0'	Total Sample Weight	208.7 grams	

	(37.5mm) Ret. 1 1/2	(37.5mm x 19mm) 1 1/2 x 3/4	(19mm x 4.75mm) 3/4 x #4	Pass (4.75mm) #4
Partial Weight (g)				208.7
% Used				100.00%
Size of Sample (g)				208.7

	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	**Combined Grading**	Specs.
(75mm) 3														
(62.5mm) 2 1/2														
(50mm) 2														
(37.5mm) 1 1/2														
(25mm) 1														
(19mm) 3/4														
(12.5mm) 1/2														
(9.5mm) 3/8														
(4.75mm) 4														
(2.36mm) 8										0.7 0.7	0.3	99.7	**100**	
(1.18mm) 16										0.1 0.8	0.4	99.6	**100**	
(600µm) 30										0.9 1.7	0.8	99.2	**99**	
(300µm) 50										93.0 94.7	45.4	54.6	**55**	
(150µm) 100										89.5 184.2	88.3	11.7	**12**	
(75µm) 200										9.8 194.0	93.0	7.0	**7**	
Wash Wt.										14.7 208.7	100.0	0	**0**	

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800-515-5054 · www.lacoassociates.com

SIEVE ANALYSIS WORKSHEET (ASTM C-136)

Project No.	8247.47	Material Desc.	Sand	Tested By:	AMC	Date: 7/20/2023
Client:	City of Eureka	Manufacturer	Native	Checked By:		Date:
Sample ID:	23-056EK	Sample Location	GB-3 @ 10.0'	Total Sample Weight	304.7 grams	

	(37.5mm) Ret. 1 1/2	(37.5mm x 19mm) 1 1/2 x 3/4	(19mm x 4.75mm) 3/4 x #4	Pass (4.75mm) #4
Partial Weight (g)				304.7
% Used				100.00%
Size of Sample (g)				304.7

	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret.	% Pass	**Combined Grading**	Specs.
(75mm) 3														
(62.5mm) 2 1/2														
(50mm) 2														
(37.5mm) 1 1/2														
(25mm) 1														
(19mm) 3/4														
(12.5mm) 1/2														
(9.5mm) 3/8														
(4.75mm) 4														
(2.36mm) 8										95.3				
										95.3	31.3	68.7	**69**	
(1.18mm) 16										35.8				
										131.1	43.0	57.0	**57**	
(600µm) 30										27.0				
										158.1	51.9	48.1	**48**	
(300µm) 50										55.0				
										213.1	69.9	30.1	**30**	
(150µm) 100										72.6				
										285.7	93.8	6.2	**6**	
(75µm) 200										8.7				
										294.4	96.6	3.4	**3**	
Wash Wt.										10.3				
										304.7	100.0	0	**0**	

LACO

FINER THAN #200 SIEVE
ASTM C117/ASTM D-1140

PROJECT	CoE Operations Bldg Geotech Eval			JOB NO. 8247.47	SHEET
CLIENT	City of Eureka			SAMPLE ID 23-056EK	1 of 1
LOCATION	Eureka, CA	TEST BY	AMC	DATE	7/20/23
SOIL TYPE	VARIOUS	CHECKED BY		CHECK DATE	

GB-1 @ 10.0'

(B)	Net sample (Dry)	201.2	gms
(C)	Dry sample after washing	174.5	gms
	Total Material finer than 200 sieve	26.7	gms
(A)	% Material finer than 200 sieve	**13.3%**	
	A=[(B-C)/B]X100		

GB-2 @ 5.0'

(B)	Net sample (Dry)	203.9	gms
(C)	Dry sample after washing	193.7	gms
	Total Material finer than 200 sieve	10.2	gms
(A)	% Material finer than 200 sieve	**5.0%**	
	A=[(B-C)/B]X100		

APPENDIX 3

Liquefaction Analysis

SPT BASED LIQUEFACTION ANALYSIS REPORT

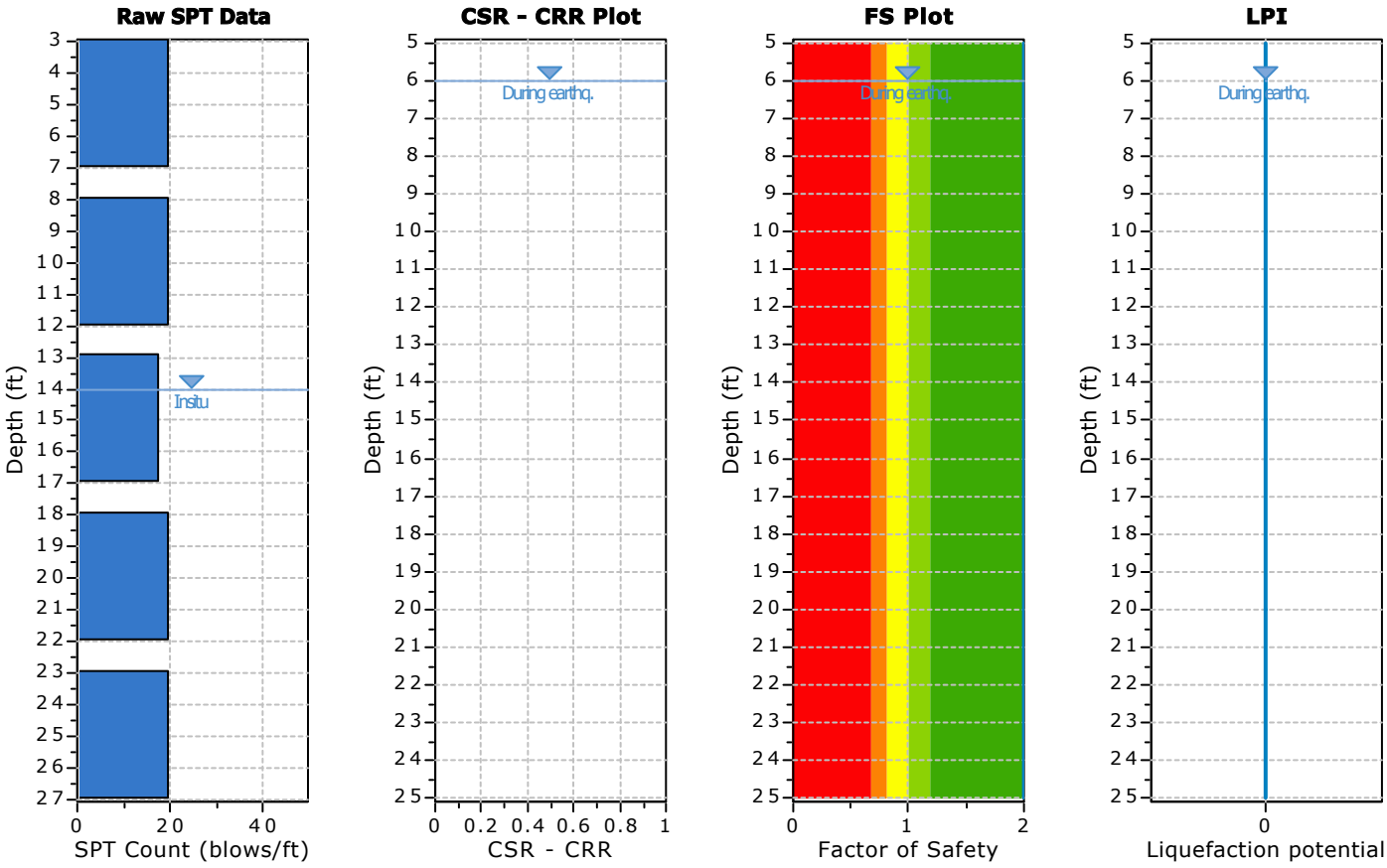
Project title : CoE Ops Center

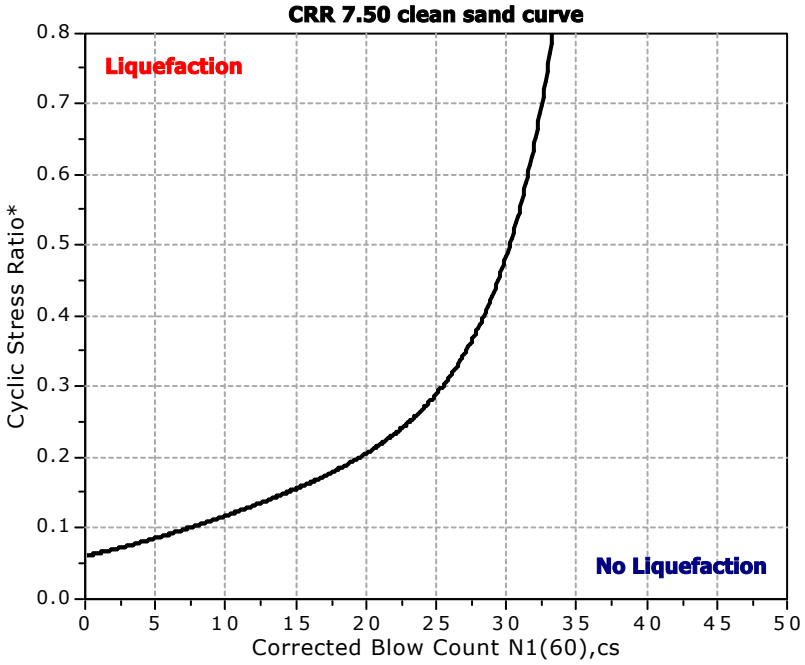
SPT Name: GB-1

Location : S. Broadway

:: Input parameters and analysis properties ::

Analysis method:	Boulanger & Idriss, 2014	G.W.T. (in-situ):	14.00 ft
Fines correction method:	Boulanger & Idriss, 2014	G.W.T. (earthq.):	6.00 ft
Sampling method:	Sampler wo liners	Earthquake magnitude M_w:	9.00
Borehole diameter:	200mm	Peak ground acceleration:	1.33 g
Rod length:	5.00 ft	Eq. external load:	0.00 tsf
Hammer energy ratio:	1.40		





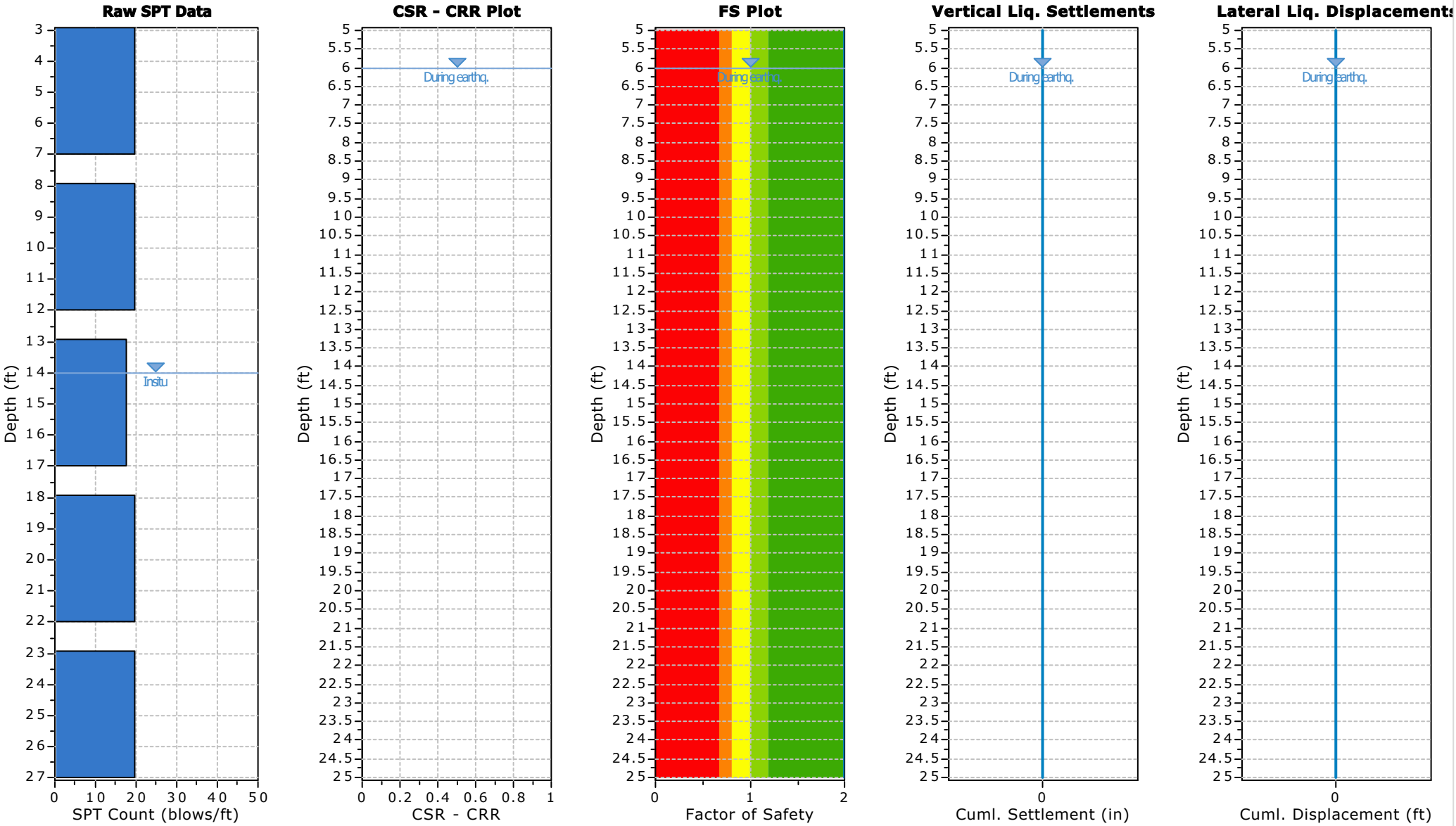
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

:: Overall Liquefaction Assessment Analysis Plots ::



:: Field input data ::

Test Depth (ft)	SPT Field Value (blows)	Fines Content (%)	Unit Weight (pcf)	Infl. Thickness (ft)	Can Liquefy
5.00	20	0.00	94.00	6.50	Yes
10.00	20	0.00	94.00	11.50	Yes
15.00	18	0.00	94.00	16.50	Yes
20.00	20	0.00	94.00	21.50	Yes
25.00	20	0.00	94.00	26.50	Yes

Abbreviations

Depth: Depth at which test was performed (ft)
SPT Field Value: Number of blows per foot
Fines Content: Fines content at test depth (%)
Unit Weight: Unit weight at test depth (pcf)
Infl. Thickness: Thickness of the soil layer to be considered in settlements analysis (ft)
Can Liquefy: User defined switch for excluding/including test depth from the analysis procedure

:: Cyclic Resistance Ratio (CRR) calculation data ::

Depth (ft)	SPT Field Value	Unit Weight (pcf)	σ_v (tsf)	u_o (tsf)	σ'_{vo} (tsf)	m	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60}$	FC (%)	$\Delta(N_1)_{60}$	$(N_1)_{60cs}$	$CRR_{7.5}$
5.00	20	94.00	0.23	0.00	0.23	0.26	1.49	1.40	1.15	0.80	1.20	46	0.00	0.00	46	4.000
10.00	20	94.00	0.47	0.00	0.47	0.29	1.26	1.40	1.15	0.85	1.20	42	0.00	0.00	42	4.000
15.00	18	94.00	0.70	0.03	0.67	0.31	1.15	1.40	1.15	0.95	1.20	38	0.00	0.00	38	4.000
20.00	20	94.00	0.94	0.19	0.75	0.29	1.11	1.40	1.15	0.95	1.20	41	0.00	0.00	41	4.000
25.00	20	94.00	1.18	0.34	0.83	0.30	1.08	1.40	1.15	0.95	1.20	39	0.00	0.00	39	4.000

Abbreviations

σ_v: Total stress during SPT test (tsf)
u_o: Water pore pressure during SPT test (tsf)
σ'_{vo}: Effective overburden pressure during SPT test (tsf)
m: Stress exponent normalization factor
C_N: Overburden corretion factor
C_E: Energy correction factor
C_B: Borehole diameter correction factor
C_R: Rod length correction factor
C_S: Liner correction factor
$N_{1(60)}$: Corrected N_{SPT} to a 60% energy ratio
$\Delta(N_1)_{60}$ Equivalent clean sand adjustment
$N_{1(60)cs}$: Corected $N_{1(60)}$ value for fines content
$CRR_{7.5}$: Cyclic resistance ratio for M=7.5

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\sigma_{v,eq}$ (tsf)	$u_{o,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF_{max}	$(N_1)_{60cs}$	MSF	$CSR_{eq,M=7.5}$	K_{sigma}	CSR*	FS	
5.00	94.00	0.23	0.00	0.23	1.00	1.00	0.868	2.20	46	0.50	1.727	1.10	1.570	2.000	●
10.00	94.00	0.47	0.12	0.35	1.00	1.00	1.183	2.20	42	0.50	2.352	1.10	2.139	2.000	●
15.00	94.00	0.70	0.28	0.42	1.01	1.00	1.444	2.20	38	0.50	2.873	1.10	2.611	2.000	●
20.00	94.00	0.94	0.44	0.50	1.01	1.00	1.624	2.20	41	0.50	3.230	1.10	2.936	2.000	●
25.00	94.00	1.18	0.59	0.58	1.01	1.00	1.754	2.20	39	0.50	3.490	1.10	3.172	2.000	●

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\sigma_{v,eq}$ (tsf)	$u_{b,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF_{max}	$(N_1)_{60cs}$	MSF	$CSR_{eq,M=7.5}$	K_{sigma}	CSR^*	FS

Abbreviations

$\sigma_{v,eq}$: Total overburden pressure at test point, during earthquake (tsf)
$u_{b,eq}$: Water pressure at test point, during earthquake (tsf)
$\sigma'_{vo,eq}$: Effective overburden pressure, during earthquake (tsf)
r_d: Nonlinear shear mass factor
α: Improvement factor due to stone columns
CSR : Cyclic Stress Ratio
MSF : Magnitude Scaling Factor
$CSR_{eq,M=7.5}$: CSR adjusted for M=7.5
K_{sigma}: Effective overburden stress factor
CSR^*: CSR fully adjusted
FS: Calculated factor of safety against soil liquefaction

:: Liquefaction potential according to Iwasaki ::

Depth (ft)	FS	F	wz	Thickness (ft)	I_L
5.00	2.000	0.00	9.24	5.00	0.00
10.00	2.000	0.00	8.48	5.00	0.00
15.00	2.000	0.00	7.71	5.00	0.00
20.00	2.000	0.00	6.95	5.00	0.00
25.00	2.000	0.00	6.19	5.00	0.00

Overall potential I_L : 0.00

I_L = 0.00 - No liquefaction
I_L between 0.00 and 5 - Liquefaction not probable
I_L between 5 and 15 - Liquefaction probable
I_L > 15 - Liquefaction certain

:: Vertical settlements estimation for dry sands ::

Depth (ft)	$(N_1)_{60}$	τ_{av}	p	G_{max} (tsf)	α	b	γ	ε_{15}	N_c	ε_{Nc} (%)	Δh (ft)	ΔS (in)
5.00	46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.50	0.000

Cumulative settlemetns: 0.000

Abbreviations

τ_{av}: Average cyclic shear stress
p: Average stress
G_{max}: Maximum shear modulus (tsf)
α, b: Shear strain formula variables
γ: Average shear strain
ε_{15}: Volumetric strain after 15 cycles
N_c: Number of cycles
ε_{Nc}: Volumetric strain for number of cycles N_c (%)
Δh: Thickness of soil layer (in)
ΔS: Settlement of soil layer (in)

:: Vertical & Lateral displ.acements estimation for saturated sands ::

Depth (ft)	$(N_1)_{60cs}$	γ_{lim} (%)	F_α	FS_{liq}	γ_{max} (%)	e_v (%)	dz (ft)	S_{v-1D} (in)	LDI (ft)
10.00	42	0.56	-0.96	2.000	0.00	0.00	11.50	0.000	0.00
15.00	38	1.30	-0.65	2.000	0.00	0.00	16.50	0.000	0.00
20.00	41	0.70	-0.88	2.000	0.00	0.00	21.50	0.000	0.00

:: Vertical & Lateral displ.acements estimation for saturated sands ::

Depth (ft)	$(N_1)_{60cs}$	γ_{lim} (%)	F_α	FS_{liq}	γ_{max} (%)	e_v (%)	dz (ft)	S_{v-1D} (in)	LDI (ft)
25.00	39	1.07	-0.73	2.000	0.00	0.00	26.50	0.000	0.00
					Cumulative settlements:			**0.000**	**0.00**

Abbreviations

γ_{lim}: Limiting shear strain (%)
F_α/N: Maximun shear strain factor
γ_{max}: Maximum shear strain (%)
e_v:: Post liquefaction volumetric strain (%)
S_{v-1D}: Estimated vertical settlement (in)
LDI: Estimated lateral displacement (ft)

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APPENDIX 4

ASFE Brochure

Important Information About Your

Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you —* should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you ASFE-member geotechnical engineer for more information.

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