Public Review Draft

Initial Study/Mitigated Negative Declaration

for the

Renaissance High School Water System Improvements Project

Prepared for:

Pajaro Valley Unified School District

Prepared by:

Denise Duffy & Associates, Inc.

July 2024

This Page Intentionally Left Blank

Table of Contents

Figures

Tables

Appendices

PAJARO VALLEY UNIFIED SCHOOL DISTRICT
Initial Study/Mitigated Negative Declaration
RENAISSANCE HIGH SCHOOL WATER SYSTEM IMPROVEMENTS PROJECT

1. Project Title

Renaissance High School Water System Improvements Project

2. Lead Agency Name and Address

Pajaro Valley Unified School District
Renaissance High School
Herlindo Fernandez, Director of Maintenance, Operations & Facilities
11 Spring Valley Road
La Selva Beach, CA 95076
831-750-7192
herlindo_fernandez@pvusd.net

3. Project Location

The project is located in La Selva Beach in unincorporated Santa Cruz County. The project consists of consolidating Renaissance High School's existing water system with Soquel Creek Water District's (Soquel Creek Water or SqCWD) water system. The proposed water main would be located entirely within the public right-of-way of San Andreas Road. A domestic water line and an irrigation line would connect to the water main within the public right-of-way and would pass under the railroad tracks located just north of San Andreas Road on APN 046-021-09. These lines would extend to the Renaissance High School campus located on APN 046-021-08. Water meter boxes, backflow prevention assemblies, booster pumps, pressure tanks, and associated appurtenances would also be located along the project alignment. See **Figure 1. Regional Location Map** and **Figure 2. Project Location**.

Regional access to the project site is provided from Highway 1 via the Buena Vista Drive exit. The project is surrounded primarily by agriculture and open space. The project area consists of paved road right-of way (San Andreas Road), a railroad easement, and irrigated turf on the Renaissance High School campus.

4. General Plan Designation

San Andreas Road: P; R-R; Public right-of-way (Public Facility/Institutional; Rural Residential; no designation)
Railroad Parcel: AG; P (Agriculture; Public Facility/Institutional)
Renaissance High School Parcel: P (Public Facility/Institutional)

5. Zoning Designation

San Andreas Road: Public right-of-way (no designation)
Railroad Parcel: PF (Public and Community Facilities)
Renaissance High School Parcel: PF (Public and Community Facilities)

6. Project Description

The primary sources for the project description are provided below:

- Draft Engineering Report for Renaissance High School, prepared by Weber, Hayes & Associates, dated March 10, 2023;
- 90% Design Plans for the Renaissance High School Water System Consolidation Project, prepared by Weber, Hayes & Associates, dated December 31, 2023;
- Email correspondence from Weber, Hayes & Associates in April 2023, January and February 2024;
- Phase 1 Cultural Resource Inventory for the Renaissance High School Water Systems Project, prepared by Albion, dated June 2023; and
- Biological Resources Report for Renaissance High School Project, prepared by Denise Duffy & Associates, dated July 10, 2023.

6.1 INTRODUCTION

This Initial Study has been prepared to evaluate the potential environmental effects associated with the Renaissance High School Water System Improvements Project (project or proposed project), located in unincorporated Santa Cruz County. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code §21000 et. seq., and the State CEQA Guidelines, California Code of Regulations (CCR) §15000 et. seq.

An Initial Study is an informational document prepared by a Lead Agency to determine if a project may have a significant effect on the environment (CEQA Guidelines §15063, subd. (a)). If there is substantial evidence that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) must be prepared, in accordance with CEQA Guidelines §15064(a). However, if the Lead Agency determines that revisions in the project plans or proposals made by or agreed to by the applicant to mitigate the potentially significant effects to a less than significant level, a Mitigated Negative Declaration (ISMND) may be prepared instead of an EIR (CEQA Guidelines §15070, subd. (b)). The Lead Agency prepares a written statement describing the reasons a proposed project would not have a significant effect on the environment and, therefore, why an EIR need not be prepared. This ISMND conforms to the content requirements under CEQA Guidelines §15071.

The Pajaro Valley Unified School District (PVUSD) is acting as the Lead Agency pursuant to CEQA Guidelines §15050(a). As the Lead Agency, PVUSD prepared this ISMND pursuant to CEQA Guidelines §15063, §15070, and §15152. This ISMND will be circulated for agency and public review during a 30-day public review period pursuant to CEQA Guidelines §15073. Comments received by the PVUSD on this ISMND will be reviewed and considered as part of the deliberative process in accordance with CEQA Guidelines §15074.

The following section is consistent with the requirements of CEQA Guidelines §15124 to the extent that it is applicable to the project. This section contains a detailed description of the project location, historical background and context, project components and relevant project characteristics, project goals and objectives, and applicable regulatory requirements.

6.2 PROJECT LOCATION

The proposed project, described below, is located in the community of La Selva Beach in unincorporated Santa Cruz County. The project components are within the San Andreas Road right-of-way, within a railroad easement under the jurisdiction of Santa Cruz County Regional Transportation Commission (SCCRTC), and on the Renaissance High School campus (see **Figure 1. Regional Location Map** and **Figure 2. Project Location**). The proposed project would be located on the following assessor's parcels:

- 046-021-08, referred to as the School parcel
- 046-021-09, referred to as the railroad parcel

Regional access to the project site is provided from Highway 1 via the Buena Vista Drive exit and San Andreas Road. The proposed project is surrounded primarily by agriculture and open space. The project area consists of paved road right-of way (San Andreas Road), a railroad easement, and irrigated turf (on the School campus).

6.3 EXISTING GENERAL PLAN LAND USE DESIGNATION

The entire proposed project area is governed by the 1994 County of Santa Cruz General Plan and Local Coastal Program. The Renaissance High School campus is designated as Public Facility/Institutional (P), the railroad easement is designated as Agriculture (AG) and Public Facility/Institutional (P), and the San Andreas Road portion is designated as Public Facility/Institutional (P), Rural Residential (R-R), and within the public right-of-way (no designation). The proposed project area is within the La Selva Planning Area. (Santa Cruz County, 1994). See **Figure 3. Land Use Map** and **Figure 4. Zoning Map**.

6.4 PROJECT BACKGROUND

Renaissance High School (School) is a continuation high school in the Pajaro Valley Unified School District (PVUSD) and is located in La Selva Beach in unincorporated Santa Cruz County, California. The School's single existing active water supply well, designated Well-2, draws water from the Pajaro Valley Groundwater Basin. The Department of Water Resources (DWR) classified the Basin as a high-priority groundwater basin in critical overdraft due to the ongoing threat of further seawater intrusion into Basin groundwater supplies. Seawater intrusion is a major issue in the Pajaro Valley Groundwater Basin. Soquel Creek Water District staff consider the new well and the treatment system options unfeasible because it leaves a coastal groundwater well in place, which is subject to (and contributes to) sea-water intrusion (i.e., high chloride / salinity levels in groundwater).

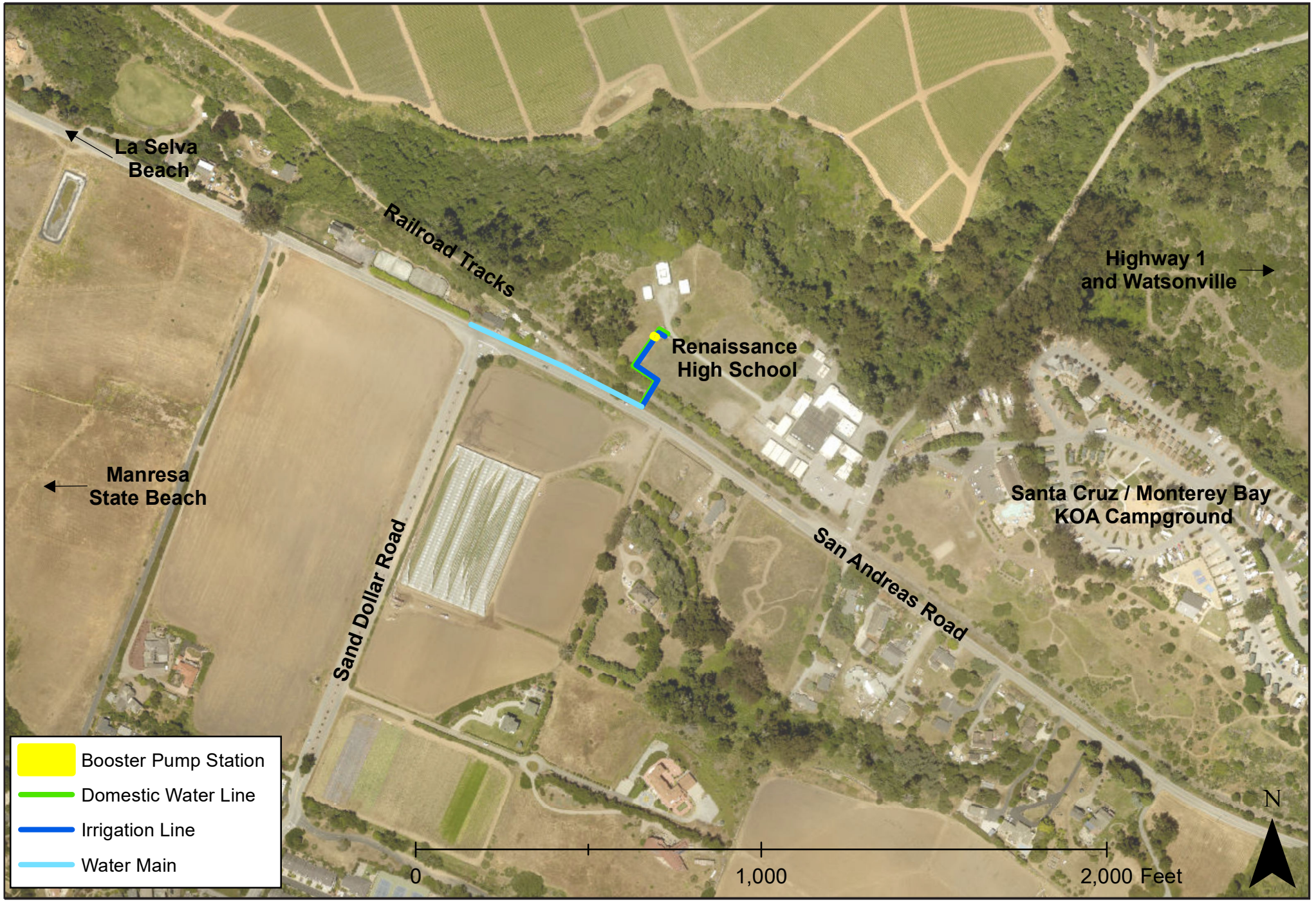
The School has its own water system (No. CA4400758), which is designated as a Non-Transient Non-Community (NTNC) public water system. The Santa Cruz County Health Services Agency, Environmental Health Division has authority over the School's water system.

The School's water system has had a known issue with elevated hexavalent chromium concentrations since at least January 2015. The concentration of hexavalent chromium (hex-chromium) in the School's water has ranged from 20 to 23 micro-grams per Liter (µg/L).

Regional Location Map

Renaissance High School Project
Initial Study
May 2023

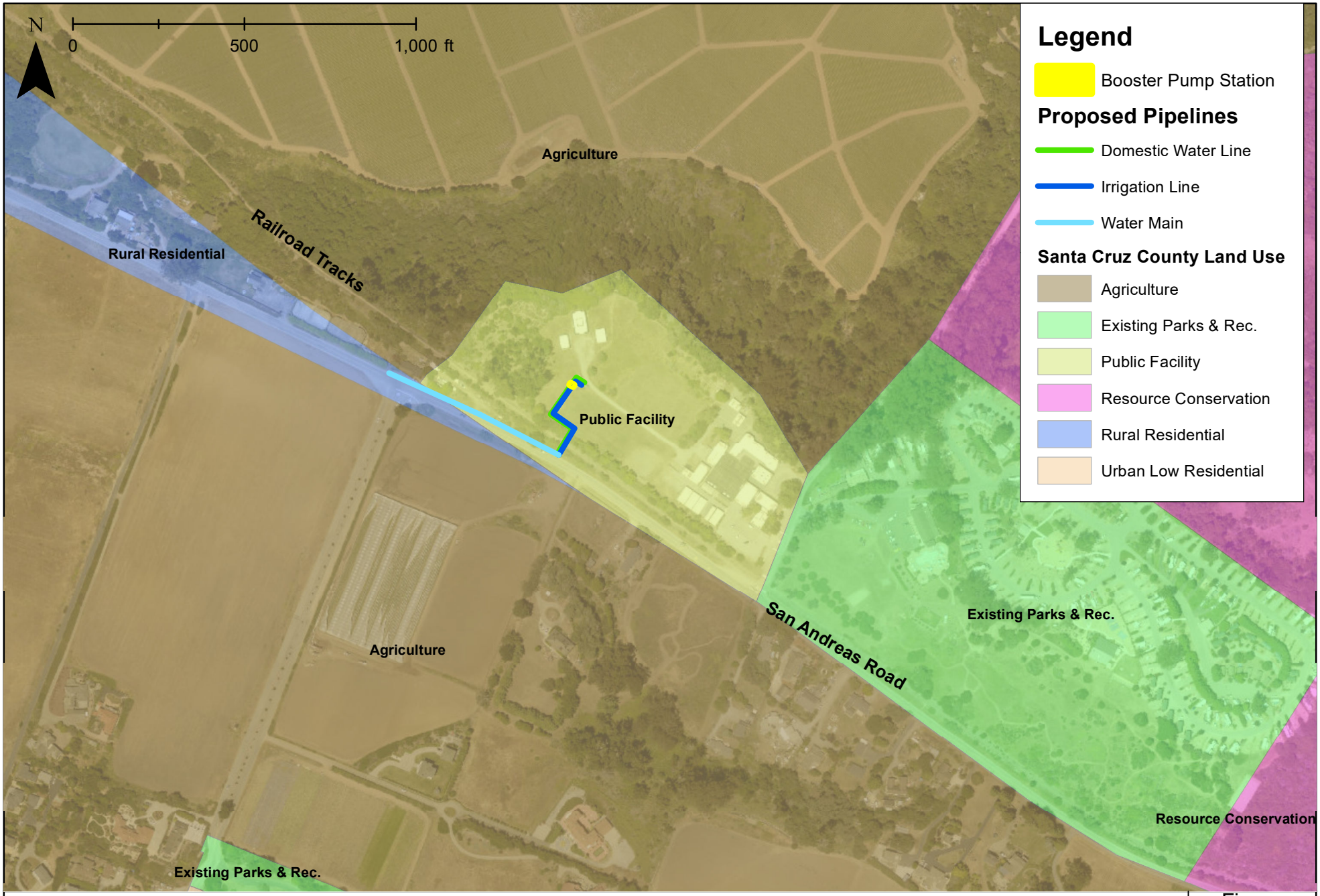
Figure
1



Project Location Map

Renaissance High School Project
Initial Study
May 2023

Figure 2

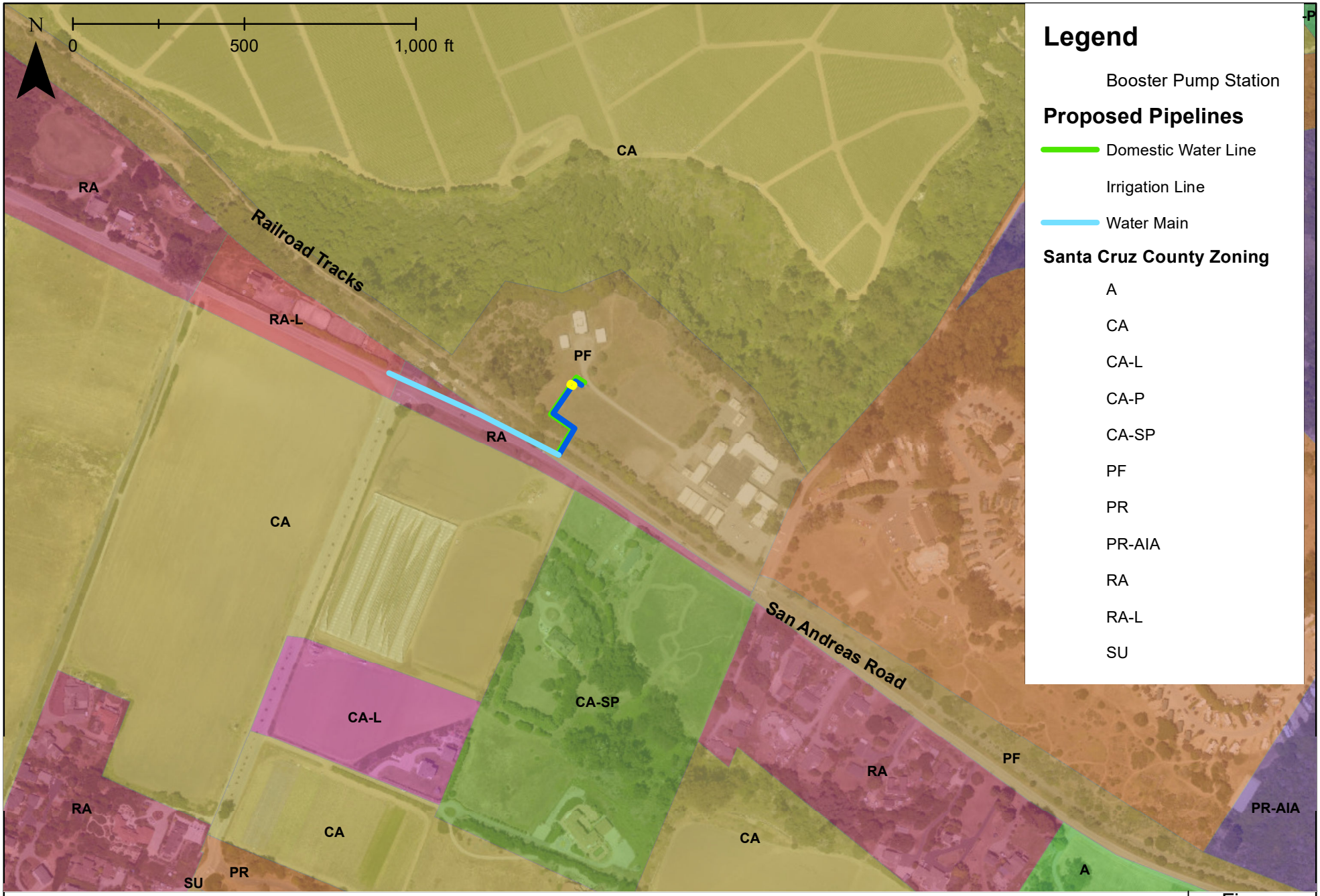


Land Use Map

Renaissance High School Project
Initial Study
December 2023

Figure 3

Path: C:\GIS\GIS_Projects\2022-75 Renaissance HS\Map Products\TL Maps\Land Use Map.mxd



Zoning Map

Renaissance High School Project
Initial Study
December 2023

Figure
4

Path: C:\GIS\GIS_Projects\2022-75 Renaissance HS\Map Products\TL Maps\Zoning Map.mxd

In 2014, the State Water Resource Control Board (SWRCB) established a hex-chromium Maximum Contaminant Level (MCL) of 10 µg/L. This MCL was later disputed and is not currently enforced. In March 2022 the SWRCB issued a hex-chromium MCL "Draft" containing a proposed MCL of 10 µg/L with additional supporting documentation. Due to the "Draft" status of the MCL, there is not a legally enforceable regulatory directive in place requiring the School to resolve the elevated hex-chromium issue; however, it is prudent to resolve the issue now while funding is available and before the "Draft" MCL becomes an enforceable regulation. Based on these challenges, Renaissance High School received a Technical Assistance Grant to help bring their water system into regulatory compliance.

Renaissance High School is currently served by a single active well, designated Well-2. A decommissioned, inactive well, Well-1 exists at the site and would be properly destroyed in addition to Well-2 following consolidation. The School utilizes untreated groundwater as its drinking water source. The capacity of their single well was noted at approximately 150+ gallons per minute (gpm) in a Santa Cruz County field inspection dated January 11, 2015. The groundwater is pumped from the well via a submersible pump to seven pressure tanks. The submersible pump and the pressure tanks pressurize the School's water distribution system. Near the well, there are two backflow prevention assemblies – one for domestic water and one for irrigation water. The domestic water line (2-inch galvanized steel) runs to the northwest side of Building E, where it connects to the School buildings. The irrigation water line (1-inch galvanized steel) runs to the nearby irrigation system sprinklers. A schematic of the current system is provided in **Figure 5. Existing Water System.** Photos of the site location and project components are provided in **Figure 6. Site Photos**.

The School's well was installed in July 2013. The pressure tanks, distribution system piping, and other appurtenances near the well head appear older than 2013 and may be near the end of their useful life span. School staff has indicated that these components are at least 20-years old; the precise age of these components is unknown. Based on the appearance of the pressure tanks, it can be assumed that they are near or beyond their usable life span. Well-2 would be property destroyed in accordance with California Department of Water Resources California Well Standards and the County of Santa Cruz Guidelines as a part of the project.

Weber Hayes Associates (WHA) prepared an Engineering Report (**Appendix A. Draft Engineering Report for Renaissance High School**) during project development, which explored several alternative methods of supplying potable water to the area. The project alternative to connect the School to the existing SqCWD water system was selected as the alternative addresses the primary problem of elevated hex-chromium concentrations and SqCWD delivers water that does not contain elevated hex-chromium or other contaminants. In addition, it was selected because it provides a reliable long-term drinking water source for the School and reduces monthly Operations and Maintenance (O&M) water system costs for the School since SqCWD would supply domestic and irrigation water to the School. The site plan for the proposed project is provided in **Figure 7. Site Plan**

Existing Water System

Source: Weber, Hayes, and, Associates

Renaissance High School Project
Initial Study
May 2023

Figure
5

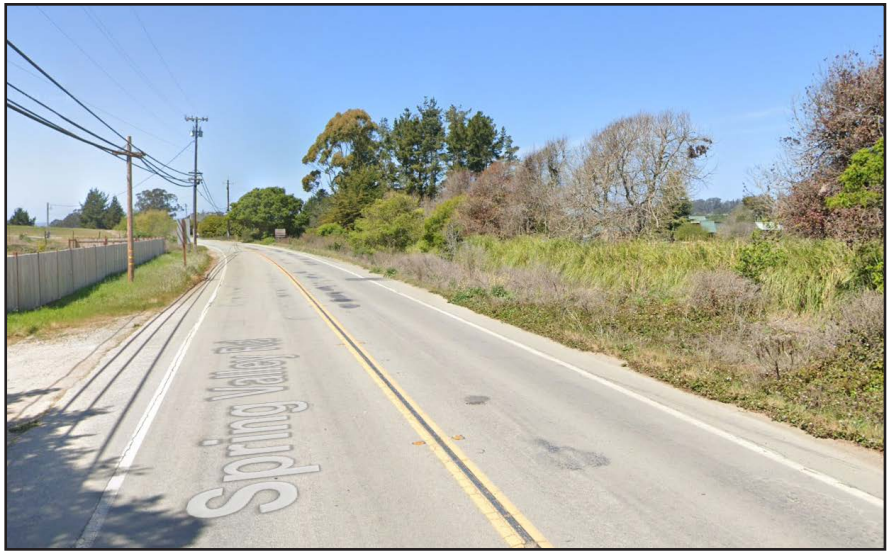


Photo #1: Northwest facing view of San Andreas Road to the south of Renaissance High School.
Source: Google Maps - April 2021

Photo #2: Northwest facing view of railroad track and Renaissance High School on San Andreas Road and Spring Valley Road.
Source: Google Maps - May 2011

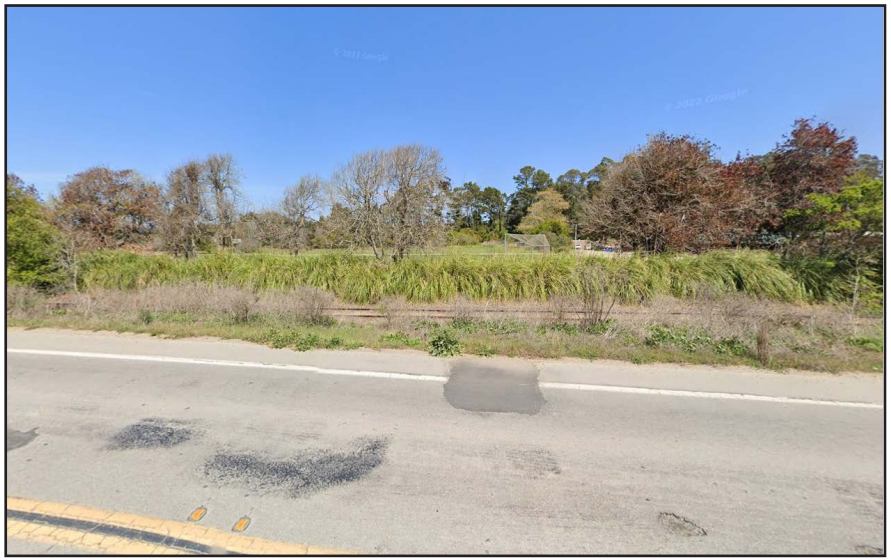


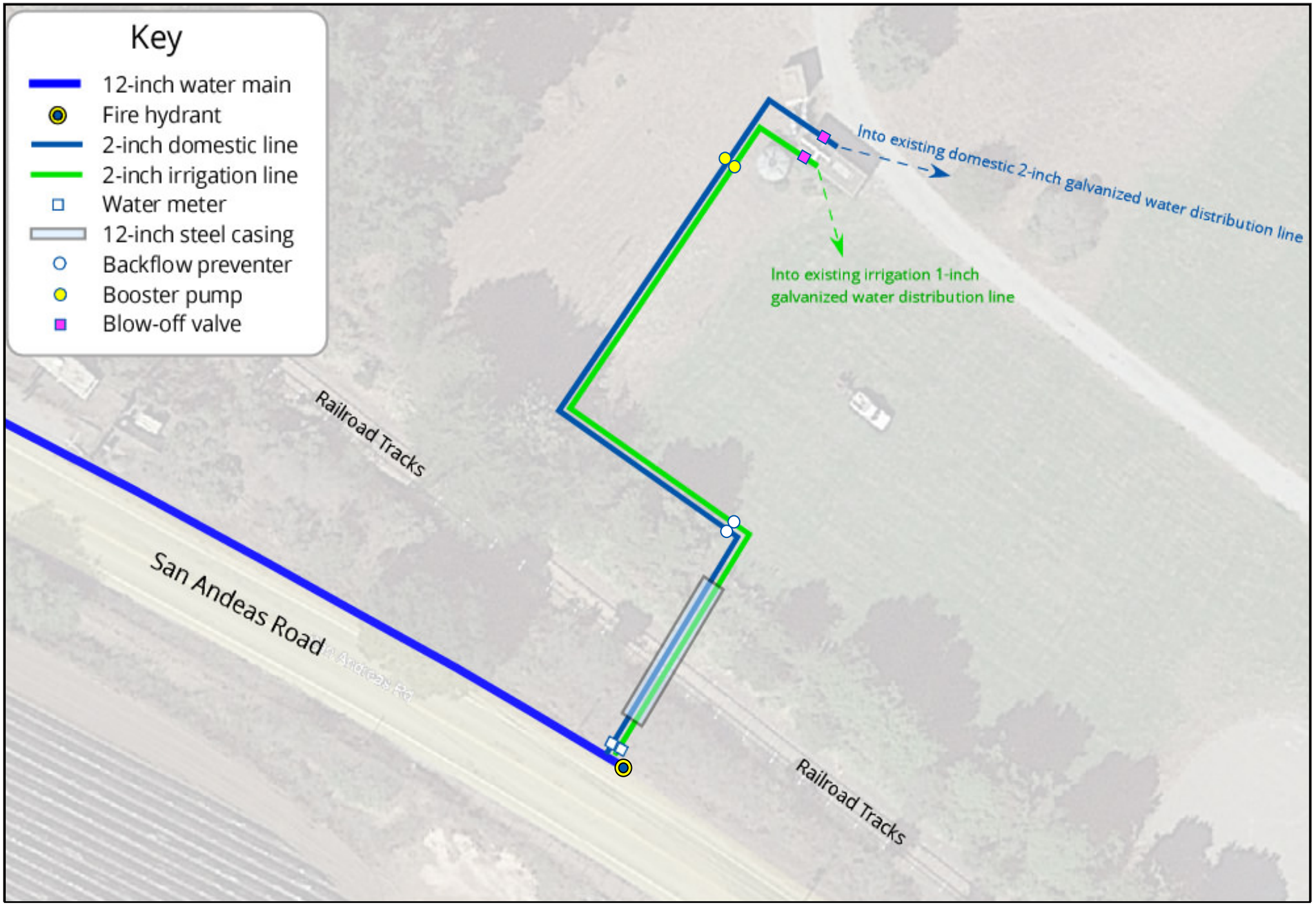
Photo #3: North facing view of the anticipated crossing location of the railroad and water distribution line on San Andreas Road.
Source: Google Maps - April 2021

Photo #4: East facing view of intersection of San Andreas Road and Sand Dollar Drive.
Source: Google Maps - April 2021

Site Photos

Renaissance High School Project
Initial Study

Figure
6



Site Plan

Source: Weber, Hayes, and, Associates

Renaissance High School Project
Initial Study
May 2023

Figure
7

6.5 PROJECT CHARACTERISTICS

6.5.1 Project Objectives

The primary project goal is to provide Renaissance High School with safe and reliable drinking and irrigation water. To best meet the primary goal, the project's key objectives are:

- Supply safe and reliable drinking water;
- Comply with regulatory requirements;
- Meet the water system's O&M needs;
- Be financially viable;
- Satisfy public concerns; and
- Meet environmental requirements.

6.5.2 Project Components

The proposed project consists of consolidating Renaissance High School's existing water system with SqCWD's water system. The proposed project consists of a 540-foot water main, a 400-foot domestic water line, a 310-foot irrigation line, and a booster pump station. In total, these components include approximately 1,250 linear feet (0.24 miles) of new pipelines and a 112 square foot booster pump station. These components are explained in more detail below. These components are shown in **Figure 7. Site Plan**.***Water Main***

The proposed project includes the extension of the existing SqCWD water main currently located in San Andreas Road southeast to service the School. The existing SqCWD water main currently terminates near the intersection of San Andreas Road and Sand Dollar Drive. A new, 12-inch diameter PVC C900 water main would extend from this intersection southeast approximately 540 feet along San Andreas Road. Two fire hydrants are proposed along San Andreas Road. A fire hydrant would be placed near the southernmost point of the water main to allow periodic flushing of the water main.

6.5.2.2 Distribution Lines

The proposed water main would terminate in front of the School property on San Andreas Road. A pair of 2-inch diameter water distribution lines (domestic & irrigation) would extend perpendicularly from the water main toward the School property. The initial reach of the distribution lines would be under the railroad tracks. On the San Andreas Road-side of the railroad tracks, two water meter boxes and two backflow prevention assemblies would be installed on school property, downstream of the steel casing underneath the railroad tracks (i.e., one water meter box and one backflow prevention assembly for the domestic water line and one for the irrigation line). The 12-inch water main would terminate approximately 4-feet southeast of the two water distribution line connection points. A 12-inch blind flange would be placed on the southeast end of the 12-inch water main, which would help facilitate a water main extension at some point in the future.

For the portion of the alignment under the railroad tracks, the two water distribution lines would be encased in a protective 62-feet long, 12-inch diameter steel casing that is centered on (and perpendicular to) the railroad tracks.

As the two water distribution lines exit the far side of the steel casing, they would extend onto the School property. The domestic distribution line would extend approximately 400 feet and tie into the School's

existing domestic water system located near the northwest side of Building E. The irrigation distribution line would extend approximately 310 feet and tie into the School's existing irrigation system. A blow-off valve assembly would be installed near the end of each of the distribution lines, to facilitate periodic flushing.

6.5.2.3 Booster Pump Station

Booster pumps would be placed on the distribution lines to boost the water pressure up from approximately 40-psi to approximately 90-psi, which is the average pressure required to operate the irrigation system. The two pumps as well as two pressure tanks would be housed in a small, 112 square foot (16 feet x 7 feet) structure (booster pump station). The structure would consist of a foundation and a weather enclosure; the booster pump station would not be suitable for human occupancy.

6.5.3 Project Construction

6.5.3.1 Site Preparation and Trenching

The project site is generally flat and consists of existing road right-of-way and public uses. The proposed project includes trenching of approximately 2,685 square feet (0.06 acres). Site preparation activities are anticipated to be completed within approximately five days and trenching activities are anticipated to be completed within 30 days. The proposed project involves approximately 650 cubic yards of cut and the same amount of fill. This estimate includes the water main, distribution lines, and booster pump station. The project would require some import or export of cut and fill materials. Sand would be imported for the utility trenches and a minimal amount of material would be exported. The water main trench would be approximately 36 inches wide; and the domestic and irrigation line trenches will be approximately 18 inches wide.

6.5.3.2 Jack and Bore

As mentioned above, a portion of the distribution lines would cross the railroad tracks. This portion of the lines would be incased in a steel casing under the tracks and would be installed using "jack and bore" methods. Jack and bore is a trenchless installation method that utilizes pits and specialized equipment. This method consists of excavating one pit on each side of the railroad tracks spaced about fifty feet apart (one "sending" and one "receiving" pit). The sending pit is anticipated to be approximately 10 feet long and 24 feet wide; the receiving pit is anticipated to be approximately eight feet long and 12 feet wide. Based on these dimensions, the total area of disturbance is anticipated to be 336 square feet (0.01 acres). The "jack and bore machine," placed in the sending pit, cuts a horizontal boring underground from the sending pit to the receiving pit, without disturbing the surface above. As the machine drills the hole, it also functions like a jack hammer to push the steel casing into place. The steel casing would be installed horizontally approximately six feet below the railroad tracks. Once the steel casing is installed, then the two water distribution lines would be placed inside the steel casing, and the annular space between the water lines and the steel casing would be properly sealed at each end of the steel casing. The steel casing is designed to protect both the water distribution lines and the railroad tracks. The jack and bore method of pipeline installation described above is required by the SCCRTC.

The project proposes to retain a qualified environmental professional to conduct soil sampling and analysis for hazardous materials in the area of excavation near the existing railroad line to determine if such chemicals (e.g., heavy metals, petroleum products) are present above applicable regulatory environmental screening levels. If the results indicate soil concentrations above the environmental

screening levels, a Site Management Plan (SMP) will be prepared that identifies remedial measures and/or soil management practices to ensure public safety. The soil sampling and SMP would be conducted in consultation and under the direction of the Santa Cruz County Regional Transportation Commission (SCCRTC).

6.5.3.3 Schedule

Construction is anticipated to occur over the course of approximately 40 days. Construction is expected to begin as early as Fall 2024. Construction activities would include site preparation, trenching, and paving. The anticipated schedule of these construction activities is as follows:

1. Site Preparation: This construction phase would last approximately 5 days.
2. Trenching: This construction phase would last approximately 30 days.
3. Paving: This construction phase would last approximately 5 days.

The construction contractor will determine the precise sequencing of the construction phase above. Due to the linear nature of the proposed project, it is probable that multiple construction phases will occur simultaneously. Construction would occur only during daylight hours and no nighttime construction is anticipated.

6.5.3.4 Construction Circulation and Access

The project site is within La Selva Beach and is located on Spring Valley Road and San Andreas Road (access to the school is via Spring Valley Road). During construction, the project site would be accessed by San Andreas Road or Spring Valley Road. There would also be traffic control required in San Andreas Road and Sand Dollar Drive during construction activities associated with water main installation, and along San Andreas Road during construction activities associated with distribution installation and jack and bore steel casing installation. It is anticipated that construction would generate approximately 10 trips per day. The exact location of the project's staging area is unknown and would be defined closer to the commencement of construction. The staging area would be located within the School parcel, within the railroad parcel, or within the right-of-way of San Andreas Road.

6.5.4 Project Operation

With the exception of fire hydrants, backflow prevention assemblies, and the booster pump station, the proposed project would be underground after construction is complete. It is not expected that operation of the proposed project would require maintenance by SqCWD on a regular basis. It is not anticipated that SqCWD would need to hire additional employees to accommodate the additional connection generated by the proposed project. The proposed project would require very few vehicle trips during operation for maintenance.

Once operational, the Renaissance High School water system will no longer exist, the School will receive all water directly from SqCWD.

7. Surrounding Land Uses and Setting

North: Agricultural
South: Agricultural
East: Open Space, Recreational
West: Agricultural

8. Other Public Agencies Whose Approval is Required

State

- State Water Resources Control Board – State Revolving Fund Financing Approval
- Division of Drinking Water – Potable Water System Amendment

Regional/Local

- County of Santa Cruz – Coastal Development Permit
- County of Santa Cruz – Level 5 Administrative Permit (Coastal Zone project)
- County of Santa Cruz – Encroachment Permit
- Local Agency Formation Commission (LAFCO) of Santa Cruz County – Extraterritorial Service Approval
- Soquel Creek Water District – Infrastructure Agreement and Will Serve Approval from SqCWD Board of Directors

This Page Intentionally Left Blank

9. CEQA Checklist

1. AESTHETICS

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

SETTING:

The proposed project is located within the La Selva planning area of the County of Santa Cruz. The unincorporated town of La Selva Beach is located approximately 1 mile to the northwest of the proposed project area. The project site is located within a County-designated scenic area and a portion is within the right-of-way of San Andreas Road, a County-designated scenic road. There are no State-designated scenic highways located within the vicinity of the proposed project, the nearest State-designated scenic highway is U.S. Route 101 which is designated as eligible for scenic highway status and is located approximately one (1) mile to the north (Caltrans, 2023).

The northern portion of the proposed project area is within school property and the southern portion of the proposed project area is within a paved road right-of-way. The lands surrounding the project components are public facility/institutional and rural residential. Additionally, the lands surrounding the project parcels are primarily agricultural, rural residential, and open space/recreation. See **Figure 3. Land Use Map**. The aesthetic quality of the site has previously been altered by the current uses described above. Vehicle traffic on San Andreas Road is the primary source of public viewership for the proposed project. See **Figure 6. Site Photos**. The topography of the proposed project site and surrounding area is essentially flat.

Construction of the proposed project will include trenching with the use of heavy equipment. Construction of the proposed project would not require any nighttime construction, and, therefore, construction activities would not result in any new nighttime lighting or glare. Construction is anticipated to last approximately 40 days.

Once operational, the pumps would be housed in a small, 48 square foot structure (6 feet x 8 feet), referred to as the booster pump station, and the water main and distribution pipelines would be entirely underground.

IMPACT DISCUSSION:

a. The majority of the project site is located within existing rights-of-way and disturbed areas. With the exception of the booster pump station, all the project components would be underground and would not be visible after construction is complete. The booster pump station would be visually screened from San Andreas Road by existing trees. Construction of the project may be temporarily visible from a small number of private residences and vehicles traveling on San Andreas Road. Impacts to private views in a project's immediate vicinity are not considered under CEQA. The proposed project would have a ***less than significant impact*** on scenic vistas.

b. The project does not propose to damage or remove trees or damage rock outcroppings or historic buildings within a state scenic highway. The project would not be able to be seen from the nearest State-designated scenic highway (U.S. Route 101) which is located approximately one (1) mile to the north If tree removal is required during construction, appropriate actions will be undertaken to minimize impacts to resources. Construction and operation of the project would result in a ***less than significant impact*** to scenic resources.

c. The existing visual character of the project site is comprised of rural land uses, including agriculture, residential and open space/recreation. The site's overall visual quality is considered low due to the surrounding agricultural open space and public institutional use. The residential land within the vicinity of the project site does not enhance the area's aesthetic value. Construction impacts would include the presence of construction vehicles, equipment and materials, stockpiles, and exposed soils. These impacts would be temporary in nature. Once the proposed project is completed, the land would be restored to its pre-construction condition. For these reasons, the proposed project would result in ***a less than significant impact*** on the existing visual character or quality of public views of the site and its surroundings.

d. The proposed project does not propose any new sources of light or glare, as the new water main and distribution lines will be underground and therefore would not include nighttime lighting. The above-ground booster pump station would not include nighttime lighting. Construction will not occur at night; therefore, no safety lighting will be needed. The proposed project would have ***no impact*** resulting from light and glare.

2. AGRICULTURE AND FOREST RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California

Department of Forestry and Fire Protection. These resources include the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project, and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	■
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	■
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	■
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	■
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	■	☐

SETTING:

Agriculture has played an important role in the economy and development of the La Selva region of the County of Santa Cruz. A significant portion of land in the La Selva planning area and near the project site includes active agricultural land uses.

Areas to the north and south of the proposed project area are currently utilized for agriculture. A portion of the proposed project area is zoned as PF (Public and Community Facilities), and the remainder is within the right-of-way. The proposed project area is not under a Williamson Act contract, nor is it zoned for an agricultural use. The parcels to the north and south of the project parcel are designated as Type 3/AG-3 (Viable Ag Land Within Coastal Zone). Neither construction nor operation of the proposed project would encroach into agricultural land. The project area consists of paved road right-of way (San Andreas Road), a railroad easement, and irrigated turf (on the Renaissance High School campus), and the project components would be primarily underground; therefore, the project would not conflict with the 200-foot buffer area between commercial agricultural and non-agricultural land uses per Policy 5.13.23 of the 1994

General Plan and Local Coastal Program for the County of Santa Cruz. See **Figure 8. Important Farmlands**.

According to California Public Resources Code (PRC) Section 12220(g), forest land is defined as land that can support 10% native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is defined as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection, as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. The project site does not support any forest land or timberland.

IMPACT DISCUSSION:

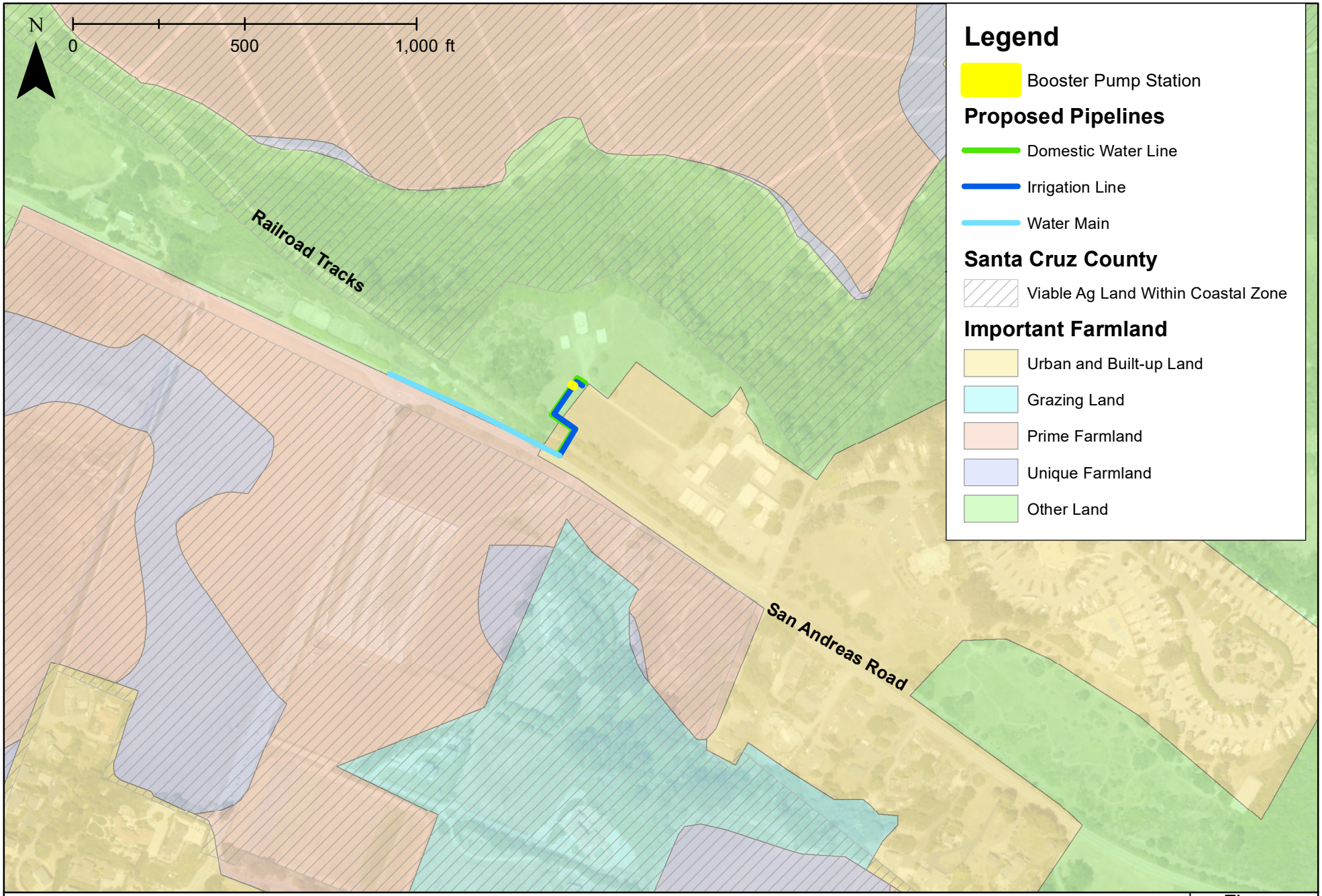
a. The project site includes lands designated as "Urban and Built-Up," and "Other Land," on the Important Farmlands Map for Santa Cruz County prepared by the Farmland Mapping and Monitoring Program of the California Resources Agency (California Department of Conservation. 2020). The water main would be located within the San Andreas Road right-of-way, and the domestic water line and irrigation line would connect to the water main within the public right-of-way and would pass under the railroad tracks located just north of San Andreas Road. Land designated as "Prime Farmland" is located to the south of the project across San Andreas Road, however, these areas are not part of the proposed project and therefore will not be encroached upon. The proposed project would have ***no impact*** resulting from the conversion of prime farmland, unique farmland, or farmland of statewide importance.

b. The project site is not located on or near land enrolled under the Williamson Act. For this reason, the proposed project would have ***no impact*** resulting from a conflict with existing zoning for agricultural use, or a Williamson Act contract.

c. The project site does not contain any forest land as defined in Public Resources Code Section 12220(g), timberland as defined by Public Resources Code Section 4526, or property zoned for Timberland Production as defined by Government Code Section 51104(g). The proposed project would have ***no impact*** resulting from a conflict in zoning for these land uses.

d. As mentioned above, there is no forest land within the project vicinity. ***No impact*** would result from the conversion of forest land to a non-forest use.

e. The proposed project would not involve changes in the existing environment, which could result in conversion of farmland or agricultural land due to their location or nature. Construction impacts adjacent to agricultural resources would occur within existing disturbed areas and would be temporary in nature. The proposed project is a water system improvement project and would not convert any land for other use. For these reasons, this is considered a ***less than significant impact***.



Important Farmlands

Renaissance High School Project
Initial Study
December 2023

Figure 8

Path: E:\GIS\GIS_Projects\2022-75 Renaissance HS\Map Products\TL Maps\Important Farmlands Map.mxd

3. AIR QUALITY

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

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	■	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is 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?	☐	☐	■	☐

SETTING:

The project lies within the North Central Coast Air Basin (NCCAB). The Monterey Bay Air Resources District (MBARD) is the local agency authorized to regulate stationary air quality sources in the project area. The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these Acts, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) have established ambient air quality standards for specific "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_X), particulate matter (PM_{10}), sulfur dioxide (SO_2), and lead (Pb). Secondary criteria pollutants include ozone (O_3), and fine particulate matter ($PM_{2.5}$).

The EPA administers National Ambient Air Quality Standards (NAAQS) under the Federal Clean Air Act. The EPA sets the NAAQS and determines if areas meet those standards. Violations of ambient air quality standards are based on air pollutant monitoring data and evaluated for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard.

The MBARD monitors air pollutant levels to ensure that air quality standards are met and, if not met, develop strategies to meet the standards. Depending on whether or not the standards are met or exceeded, the NCCAB is classified as being in “attainment” or as “non-attainment.” See **Table 1. North Central Coast Air Basin Attainment Status** below for a summary of the attainment status for NCCAB.

Table 1.
North Central Coast Air Basin Attainment Status

Pollutant	State Designation	National Designation
Ozone (O_3)	Nonattainment-Transitional	Attainment
Inhalable Particulates (PM_{10})	Nonattainment	Attainment
Fine Particulates ($PM_{2.5}$)	Attainment	Attainment
Carbon Monoxide (CO)	Unclassified (Santa Cruz County)	Attainment
Nitrogen Dioxide (NO_2)	Attainment	Attainment
Sulfur Dioxide (SO_2)	Attainment	Attainment
Lead	Attainment	Attainment

Source: MBARD 2012-2015 Air Quality Management Plan, https://www.mbard.org/air-quality-plans

Plans to attain these standards already accommodate the future growth projections available at the time these plans were prepared. Any development project capable of generating air pollutant emissions exceeding regionally established criteria is considered significant for purposes of CEQA analysis, whether or not such emissions have been accounted for in regional air planning. Any project that would directly cause or substantially contribute to a localized violation of an air quality standard would generate substantial air pollution impacts. The same is true for a project that generates a substantial increase in health risks from toxic air contaminants or introduces future occupants to a site exposed to substantial health risks associated with such contaminants.

The 2012-2015 Air Quality Management Plan is the seventh triennial update to the initial state Air Quality Management Plan (AQMP) (MBARD, 2017). MBARD's 2012-2015 AQMP serves as an important regulatory tool to maintain attainment status and address the many factors that threaten to increase regional NO_x and volatile organic compounds (VOC) emissions in the future. To be determined to be consistent with the current air quality attainment plan (2012-2015 AQMP), the project's direct and indirect emissions must be accounted for in the growth assumptions in the 2012-2015 AQMP, and the project must be consistent with the policies adopted in the 2012-2015 AQMP.

Common sources of odors and odor complaints include wastewater treatment plants, transfer stations, coffee roasters, painting/coating operations, and landfills. The proposed project is located at an education facility in a rural residential/agricultural area and would not generate significant odors during construction or operation.

Sensitive receptors are more susceptible to the effects of air pollution than the general population. Land uses that are considered sensitive receptors include residences, schools, and health care facilities. Sensitive receptors in the vicinity of the project consist of Renaissance High School and residences on San Andreas Road.

IMPACT DISCUSSION:

a) CEQA Guidelines §15125(b) requires that a project be evaluated for consistency with applicable regional plans. The MBARD AQMP is the applicable air quality plan for the proposed project site. The California Clean Air Act (CCAA) required MBARD to prepare an AQMP in 1991, with subsequent updates every three years. The most recent update (2012-2015) is the seventh update to the 1991 AQMP. It shows that the region continues to make progress toward meeting the state ozone standard. The project does not include new housing or commercial development,

and operation and maintenance of the project components would not require new employees. Due to the lack of operational emissions, the project would not cause any long-term adverse air quality affects. As a result, the project would result in ***a less than significant impact*** resulting from conflicts with and/or otherwise obstruct the implementation of MBARD's AQMP.

b. The NCCAB is currently designated "attainment" for federal air quality standards, designated "nonattainment" for state standards for inhalable particulate matter (PM_{10}) and designated "transitional nonattainment" for the state ozone standard.

Construction Emissions

Based on the 60% Design Plans, Draft Engineering Report, and information provided by WHA, short-term construction emissions associated with the proposed project were estimated using the California Emission Estimator Model (CalEEMod).

MBARD has established quantitative thresholds of significance for short-term air pollutant emissions. MBARD's Guidelines for Implementing the California Environmental Quality Act (MBARD, 2016) implements a 137 pounds/day significance threshold for construction emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_X), as well as other criteria emissions with the exception of sulfur dioxide (SO_2). A comparison of estimated construction emissions and applicable MBARD-recommended thresholds are provided in **Table 2. Construction Air Pollutant Emissions for the Renaissance High School Water System Improvements Project** below.

Table 2.
Construction Air Pollutant Emissions for the Renaissance High School Water System Improvements Project

	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Significance Threshold (MBARD)	137	137	550		82	55
Estimated Project Emissions	0.03	0.87	0.94		6.08	0.64
Exceed Threshold?	No	No	No		No	No

[1] Emissions shown in pounds per day
Source: Summary of Air Quality Modeling for Renaissance High School Water System Improvements Project, Denise Duffy and Associates, 2024.

Construction of the project would emit relatively small amounts of the pollutants included in **Table 2. Construction Air Pollutant Emissions for the Renaissance High School Water System Improvements Project** above. The project would not result in the exceedance of any short-term construction threshold as recommended by MBARD. The project would implement vehicle speed reduction and dust control measures, as required for all projects involved in earthmoving activities regardless of the significance of the fugitive dust impacts, therefore resulting in a ***less than significant impact***. These measures are identified below:

1. During construction, use water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the site. At a minimum, this should include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency should be required whenever the wind speed exceeds 15

miles per hour. Reclaimed water should be used whenever feasible. However, reclaimed water should not be used in or around crops for human consumption.

2. Minimize amount of disturbed area and reduce on site vehicle speeds to 15 miles per hour or less on unpaved areas.

3. If importation, exportation, and/or stockpiling of fill material is involved, soil stockpiled for more than two days shall be covered, kept moist, or treated with soil binders to prevent dust generation. Trucks transporting fill material to and from the site shall be tarped from the point of origin.

4. Gravel pads shall be installed at all access points to prevent tracking of mud onto public roads.

5. After clearing, grading, earth moving or excavation is completed, treat the disturbed area by watering, or revegetating, or by spreading soil binders until the area is paved or otherwise developed so that dust generation will not occur.

6. The contractor or builder shall designate a person or persons to monitor the dust control program and to order increased watering, as necessary, to prevent transport of dust offsite. Their duties shall include holiday and weekend periods when work may not be in progress. The name and telephone number of such persons shall be provided to the MBARD prior to grading/building permit issuance and/or map clearance.

Operational Emissions

Operation of the proposed project would not result in a significant impact due to air pollution emissions since the only operational effects would be related to minimal vehicle trips to the site for maintenance activities. In addition, the proposed project would not require any new staff. There would be an incremental increase in the amount of power required by the SqCWD water system to serve the new connections. This would result in a nominal increase in emissions related to electricity production.

Based on the above analysis, the project would have a ***less than significant impact*** resulting from a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.

c. Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with a margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, such as children under 14; the elderly over 65; persons engaged in strenuous work or exercise; and people with cardiovascular and chronic respiratory diseases. CARB identifies sensitive receptors as “land uses where sensitive individuals are most likely to spend time,” such as “schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities” (CARB. 2005). Because the project includes the installation of new water connections, construction will occur within the immediate vicinity of Renaissance High School and near residences along San Andreas Road.

Implementation of the project would result in short-term emissions of fugitive dust associated with construction activities. However, as noted in **Table 2. Construction Air Pollutant Emissions for the Renaissance High School Water System Improvements Project**, above, the project would

not result in emissions that would exceed MBARD's significance thresholds. Applicable MBARD thresholds are designed to be protective of public health. Compliance with applicable MBARD regulations would minimize potential nuisance impacts to occupants of nearby land uses. For these reasons, construction activities would be considered to have a ***less than significant impact*** on nearby sensitive residential receptors.

d. There may be intermittent odors from construction associated with diesel exhaust that could be noticeable at times to residences in close proximity. However, given the limited construction duration, potential intermittent odors are not anticipated to result in odor complaints and would not affect a substantial number of people. Any individual receptor at any location within the project area would be exposed to project construction for only a few days. Following construction, the project would not generate any long-term criteria pollutants. Therefore, the project would have a ***less than significant impact*** related to odors.

4. BIOLOGICAL RESOURCES

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife 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 Wildlife or U.S. Fish and Wildlife Service?	☐	■	☐	☐
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	■
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	■	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	☐	☐	☐	■

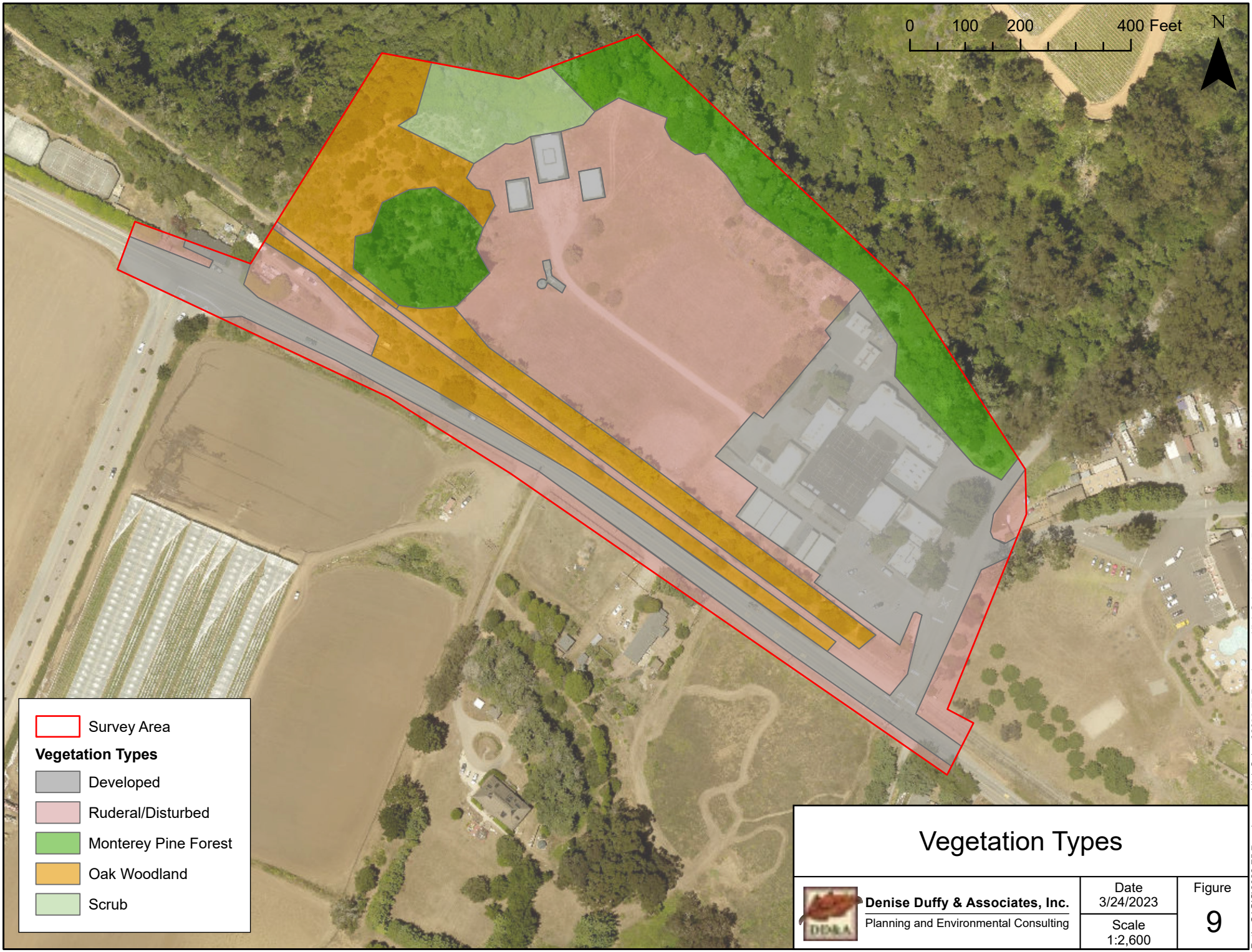
SETTING:

Denise Duffy & Associates ("DD&A" or "DDA") Natural Resources Division prepared a Biological Resources Report for the project, contained in **Appendix B. Renaissance High School Project Biological Resource Report**. The report describes the existing biological resources within and adjacent to the project site, including any special-status species or sensitive habitats known or with the potential to occur within and adjacent to the site. This report also assesses the potential impacts to biological resources that may result from the project, and recommends appropriate avoidance, minimization, and mitigation measures necessary to reduce those impacts to a less-than-significant level in accordance with CEQA (DDA, 2023).

The project is located in La Selva Beach in unincorporated Santa Cruz County. The proposed project components are located within the right-of-way along San Andreas Road, within a railroad easement, and on the Renaissance High School campus.

Four vegetation types were mapped within the survey area: ruderal/disturbed, Monterey pine forest, oak woodland and scrub. Approximately 6.3 acres of the survey area is classified as developed. Six special-status species have the potential to occur within the survey area based on appropriate habitat: California Tiger Salamander (CTS), Santa Cruz Long-Toed Salamander (SCLTS), California Red-Legged Frog (CRLF), San Francisco dusky-footed woodrat, Pallid bat, and Townsend's big-eared bat. Woodrat nests were observed within the vicinity of the project. Raptors and other avian species protected under the California Fish and Wildlife Code have the potential to nest within trees present within and adjacent to the survey area and project site. All other species evaluated have a low potential to occur, are assumed unlikely to occur, or were determined not present within the survey area.

The survey results include mapping and quantification of the acreage of four vegetation types within the survey area, as shown in **Figure 9. Vegetation Types**. **Table 3. Summary of Vegetation Types in the Survey Area** provides a summary of the acreage of each area:



Vegetation Types

Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

Date
3/24/2023

Scale
1:2,600

Figure
9

Path: C:\GIS\2022-75 Renaissance High School\2022-75 Renaissance High School.aprx

Table 3.
Summary of Vegetation Types in the Survey Area

Vegetation Type	Acreage
Ruderal / Disturbed	9.3
Monterey Pine Forest	3
Oak Woodland	3.6
Scrub	0.9

There are no adopted Habitat Conservation Plans (HCP) or Natural Community Conservation Plans (NCCP) associated with the project site.

Vegetation Types

Ruderal/Disturbed

Ruderal and disturbed areas are those areas which have been subject to historic and ongoing disturbance by human activities and are devoid of vegetation or dominated by non-native and/or invasive weed species. Ruderal areas within the survey area include the school field and garden, the Union Pacific railroad tracks adjacent to the school, landscaped areas, and other disturbed areas These areas are dominated by non-native weedy species, are regularly maintained, or are devoid of vegetation. Dominant species observed include slender wild oat (*Avena barbata*), red-stemmed filaree (*Erodium cicutarium*), ribwort plantain (*Plantago lanceolata*), soft chess (*Bromus hordeaceus*), hairy cats-ear (*Hypochaeris radicata*), velvet grass (*Holcus lanatus*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), Bermuda buttercup (*Oxalis pes-caprae*), and bur clover (*Medicago polymorpha*). Approximately 9.3 acres of ruderal and disturbed habitat is present within the survey area.

Ruderal and disturbed areas provide only low-quality habitat for plants and wildlife. Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), western fence lizard (*Sceloporus occidentalis*), and rock dove (*Columba livia*). Protected avian species, including raptors, may nest within trees present throughout this habitat type. CTS may utilize ruderal areas as upland habitat where small mammal burrows are present, and CRLF have the potential to disperse through ruderal areas.

Monterey Pine Forest

Monterey pines occur in three disjunct populations throughout California: southern San Mateo County, the Monterey Peninsula, and the Cambria-San Simeon area; however, this species is widely planted throughout California. Monterey pine forest habitat in the survey area is comprised of a closed canopy of Monterey pine (*Pinus radiata*) with a limited understory due to a thick layer of duff and fallen trees on the forest floor. Where present, understory vegetation includes coast live oak (*Quercus agrifolia*) seedlings, and non-native annual plant species such as Italian thistle (*Carduus pycnocephalus*) and annual grasses. Blue gum (*Eucalyptus globulus*) trees are present on the edges of Monterey pine forest habitat. Approximately 3.0 acres of Monterey pine forest habitat is present within the survey area.

Monterey pine forest habitat may provide suitable habitat for black-tailed deer (*Odocoileus hemionus columbianus*), raccoon, red-tailed hawk (*Buteo jamaicensis*), scrub jay, chestnut-backed chickadee

(*Poecile rufescens*), and American robin (*Turdus migratorius*). Monterey pine forest habitat may provide upland habitat for SCLTS and roosting habitat for special-status bat species. Multiple woodrat nests were observed within this habitat during the March 2023 reconnaissance level survey.

Monterey pine is a CNPS List 1B species and Monterey pine forest is a sensitive habitat as identified on CDFW's *California Natural Communities List*; however, the survey area is outside the native range of the species. Monterey pine forest located outside of the native range are typically not given the same management considerations and therefore are not considered sensitive.

Oak Woodland

Coast live oak woodlands occur in the more mesic areas of coastal California from Sonoma County south into Baja California. They are dominated by open to nearly closed canopies of coast live oak. The oak woodland habitat within the survey area consists of a relatively open canopy of coast live oak with Monterey pine and golden wattle (*Acacia longifolia*) scattered throughout. Non-dominant plant species present within this habitat include coyote brush (*Baccharis pilularis*) and coffee berry (*Frangula californica*). The oak woodland habitat on either side of the Union Pacific railroad tracks is highly disturbed by the presence of non-native species including jubata grass (*Cortaderia jubata*) and golden wattle. Approximately 3.6 acres of coast live oak woodland is present within the survey area.

Oak woodland is an important habitat for many wildlife species. Oaks provide nesting sites for many avian species and cover for a variety of mammals. Acorns provide an important food source for acorn woodpecker (*Melanerpes formicivorus*), western scrub jay, and black-tailed deer. Other common wildlife species found in coast live oak woodland are Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Coast live oak woodland habitat may provide upland habitat for SCLTS and roosting habitat for special-status bat species. Multiple woodrat nests were observed within this habitat during the March 2023 reconnaissance level survey. Coast live oak woodlands are not considered sensitive on the *California Natural Communities List;* however, this habitat is considered sensitive under the County's Sensitive Habitat Protection Ordinance (SCCC Chapter 16.32.40). Coast live oak woodland within the project site occurs within the Coastal Zone and, therefore, is considered ESHA.

Scrub

The structure of plant associations that comprise scrub habitat typically consist of low to moderate-sized shrubs with sclerophyllous leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system. Dominant species within scrub habitat in the survey area include coyote brush, coffee berry, and poison oak (*Toxicodendron diversilobum*). The understory vegetation includes mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), and Italian thistle. Approximately 0.9 acres of scrub habitat occur within the survey area.

Though vegetative productivity is lower in scrub habitat than in adjacent chaparral habitats associated with it, scrub habitat appears to support roughly the same number of vertebrate species. Common wildlife observed within scrub habitat include scrub jay, chestnut-backed chickadee, western fence lizard, and brush rabbit (*Sylvilagus bachmani*). Scrub habitat within the survey area may provide upland habitat for SCLTS and roosting habitat for special-status bat species. Multiple woodrat nests were observed within this habitat during the March 2023 reconnaissance level survey.

Developed

Approximately 6.3 acres of the survey area is developed, including paved roads, parking areas, and structures. No special-status wildlife species were observed within the developed areas; however, raptors and other protected avian species may nest within trees present in developed areas.

Sensitive Habitats

The eastern half of the survey area lies within Critical Habitat Mapping Unit SCZ-2 for CRLF, which the Service designated on April 13, 2006 (71 FR 19244-19346) and revised on March 17, 2010 (75 FR 12816- 12959). Additionally, coast live oak woodland is considered a sensitive habitat under SCCC Section 16.32.040. Development within this habitat is subject to the approval of the County. Coast live oak woodland within the project site occurs within the Coastal Zone and, therefore, is considered ESHA.

Special-Status Species

Published occurrence data within the proposed project areas and surrounding USGS quadrangles were evaluated to compile a table of special-status species known to occur in the vicinity of the survey area. Each of these species was evaluated for their likelihood to occur within and immediately adjacent to the survey area. The special-status species that are known to or have been determined to have a moderate to high potential to occur within or immediately adjacent the survey area are discussed below. All other species within the table are assumed “unlikely to occur” or have a low potential to occur for the species-specific reasons presented in **Appendix B. Renaissance High School Project Biological Resource Report**.

California Tiger Salamander (CTS)

The CTS is a federal and state threatened species. The CTS is a large, stocky salamander most commonly found in annual grassland habitat, but also occurring in the grassy understory of valley-foothill hardwood and chaparral habitats, and uncommonly along stream courses in valley-foothill riparian habitats. Adults spend most of their lives underground, typically in burrows of ground squirrels and other animals. The California tiger salamander has been eliminated from an estimated 55 percent of its documented historic breeding sites. Currently, about 150 known populations of California tiger salamanders remain. The CTS persists in disjunct remnant vernal pool complexes in Sonoma County and Santa Barbara County, in vernal pool complexes and isolated stockponds scattered along a narrow strip of rangeland on the fringes of the Central Valley from southern Colusa County south to northern Kern County, and in sag ponds and human maintained stockponds in the coast ranges from the San Francisco Bay Area south to the Temblor Range.

The California Natural Diversity Database (CNDDB) reports 36 occurrences of CTS within the seven quadrangles evaluated. The nearest CNDDB occurrence is located approximately 0.3 miles from the survey area in Ellicott Pond, a known CTS breeding resource. Ellicott Pond is located within Ellicott Slough National Wildlife Refuge, which is located adjacent to the survey area and is managed for the protection of multiple special-status species, including CTS. One additional occurrence is located within the known dispersal distance for this species (1.4 miles) of the survey area, located approximately 1.3 miles from the survey area. No suitable breeding habitat is present within the survey area; however, suitable upland habitat for CTS is present within all undeveloped areas of the survey area where small mammal burrows are present. Therefore, this species has a moderate potential to occur within the survey area.

Santa Cruz Long-Toed Salamander (SCLTS)

The SCLTS is listed as a federal and state Endangered species and is also a California fully protected species. The SCLTS is a subspecies of long-toed salamander (*Ambystoma macrodactylum*) that occurs in a small number of restricted localities in Santa Cruz and Monterey Counties. This subspecies is known to use several different plant community types for upland habitat, including riparian, willow thickets, coast live oak woodlands, dense coastal scrub, coastal chaparral, and Monterey pine forest. For much of the year SCLTS find refuge in cool, moist places, such as small mammal burrows or under decayed wood piles, logs, or thick leaf litter. The upland habitat must also support an abundance of prey. Adult and sub-adult SCLTS eat a variety of invertebrates, including earthworms, slugs, isopods, beetles, and spiders.

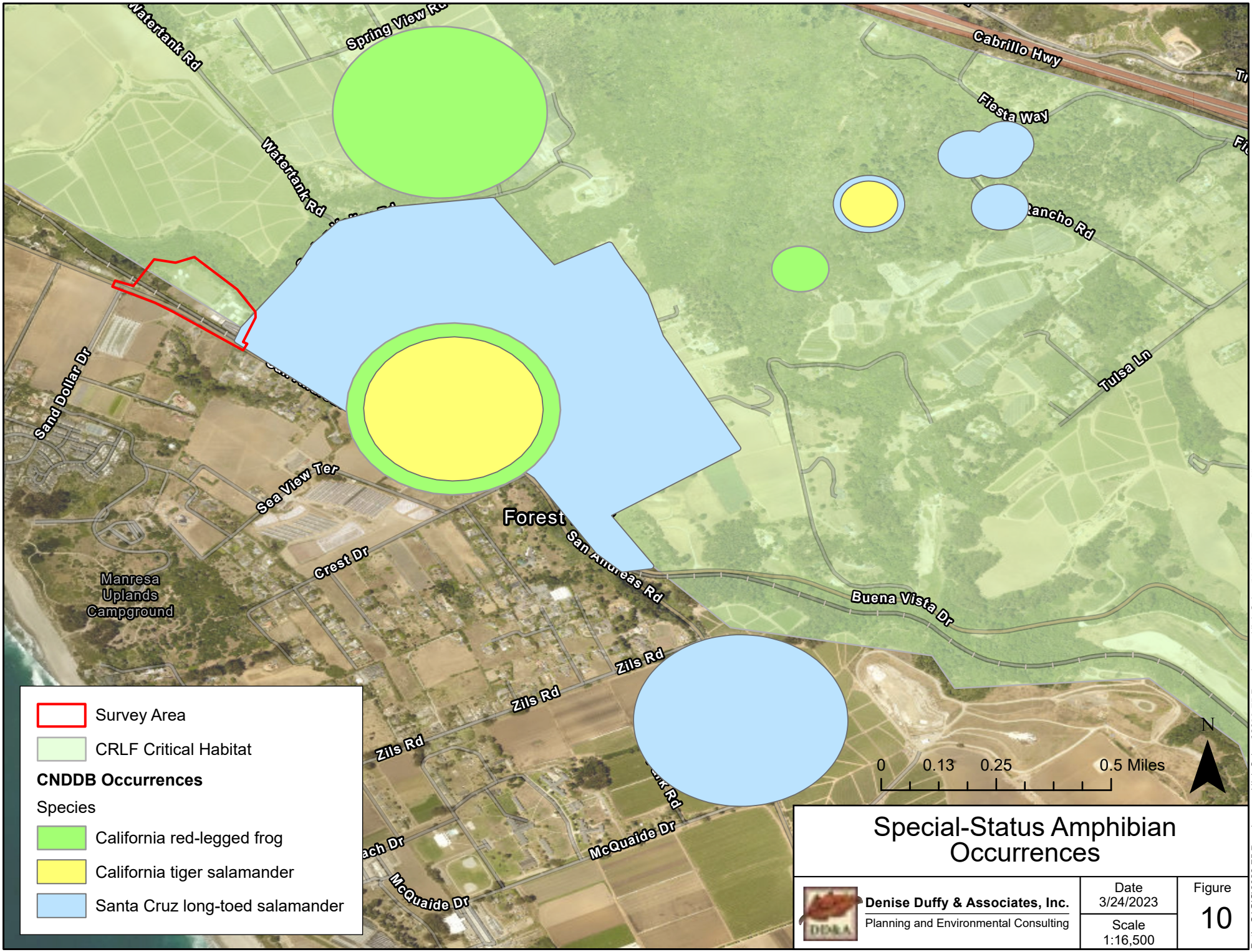
The CNDDB reports 26 occurrences of SCLTS within the quadrangles reviewed, one of which overlaps the eastern boundary of the survey area. This occurrence is mapped generally as the Ellicott Slough National Wildlife Refuge, which was established in 1975 to protect habitat for this species and includes two of the 24 known breeding populations of this species. SCLTS is known to occur in Ellicott Pond, which is located approximately 0.5 miles from the survey area and is within the known dispersal distance for this species (1.0 miles). Two additional CNDDB occurrences are located within the dispersal distance of this species. No suitable breeding habitat is present within the survey area; however, suitable upland habitat for SCLTS is present within the oak woodland, scrub, and Monterey pine habitats within the survey area. Therefore, this species has a moderate potential to occur within the survey area.

California Red-Legged Frog (CRLF)

The CRLF is listed as a federally Threatened and is also a CDFW species of special concern. The CRLF is the largest native frog in California (44-131 mm snout-vent length) and was historically widely distributed in the central and southern portions of the state. Adults generally inhabit aquatic habitats with riparian vegetation, overhanging banks, or plunge pools for cover, especially during the breeding season. They may take refuge in small mammal burrows, leaf litter, or other moist areas during periods of inactivity or to avoid desiccation. During the non-breeding season, a wider variety of aquatic habitats are used including small pools in coastal streams, springs, water traps, and other ephemeral water bodies. CRLF may also move up to 300 feet from aquatic habitats into surrounding uplands, especially following rains, where individuals may spend days or weeks.

It has been shown that occurrences of CRLF are negatively correlated with presence of non-native bullfrogs, although both species are able to persist at certain locations, particularly in the coastal zone. It is estimated that CRLF has disappeared from approximately 75% of its former range and has been nearly extirpated from the Sierra Nevada, Central Valley, and much of southern California.

The CNDDB includes 61 occurrences of CRLF within the seven quadrangles evaluated, the nearest of which is located approximately 0.3 miles from the survey area in Ellicott Pond, a known CRLF breeding resource. Ellicott Pond is located within Ellicott Slough National Wildlife Refuge, which is located adjacent to the survey area and is managed for the protection of multiple special-status species, including CRLF. Two additional occurrences are located within the known dispersal distance (1.0 mile) of the survey area, located approximately 0.4 miles and 0.9 miles from the survey area. No suitable breeding or upland habitat is present within the survey area; however suitable dispersal habitat is present within all undeveloped portions of the survey area. Additionally, approximately half of the survey area is within Critical Habitat Mapping Unit SCZ-2 (**Figure 10. Special-Status Amphibian Occurrences**). Therefore, this species has a moderate potential to occur within the survey area.


Watertank Rd
Spring View Rd
Watertank Rd
Cabrillo Hwy
Fiesta Way
Rancho Rd
Sand Dollar Dr
Tulsa Ln
Sea View Ter
Forest
San Andreas Rd
Crest Dr
Manresa
Uplands
Campground
Buena Vista Dr
Zils Rd
Zils Rd
Zils Rd
McQuaide Dr
McQuaide Dr
Survey Area
CRLF Critical Habitat
CNDDB Occurrences
Species
California red-legged frog
California tiger salamander
Santa Cruz long-toed salamander
0
0.13
0.25
0.5 Miles
N
Special-Status Amphibian Occurrences
Denise Duffy & Associates, Inc.
Planning and Environmental Consulting
Date
3/24/2023
Scale
1:16,500
Figure
10
Path: C:\GIS\2022-75 Renaissance High School\2022-75 Renaissance High School.aprx

San Francisco Dusky-Footed Woodrat (SFDFW)

The San Francisco dusky-footed woodrat (SFDFW) is a CDFW species of special concern. This species is found in chaparral, hardwood, conifer, riparian woodlands, and mixed forests, typically in densely wooded areas with dense undergrowth. This species builds its nest with debris on the ground or in trees; nests tend to be in areas that are shaded, relatively cool, and provide cover. Nests may be used by many generations over several years.

There is one CNDDB occurrence of this species within the quadrangles reviewed, located approximately 12 miles from the survey area. However, approximately one dozen woodrat nests were observed within the survey area during the March 2023 reconnaissance-level survey. Nests were observed on the ground and in trees/shrubs within Monterey pine forest, oak woodland, and scrub habitats. Therefore, this species is present within the survey area.

Pallid Bat

The pallid bat (*Antrozous pallidus*) is a CDFW species of special concern and is a year-round resident in California. This species of bat occurs in a wide variety of habitats including grasslands, shrublands, arid desert areas, oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California and forests ranging from sea level up through mixed conifer forests. Pallid bats are most common in open, dry habitats with rocky areas for roosting. Day roosts of this species include caves, crevices, mines, and occasionally hollow trees and buildings. This species seems to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Pallid bats make use of similar structures for night roosting and will use more open sites such as eaves, awnings, and open areas under bridges for feeding roosts. Pallid bats feed on large insects (20 to 70 mm in length). Foraging takes place over open ground, at heights generally not greater than 7.5 feet, although prey is most often caught on the ground. Jerusalem crickets, scorpions and beetles make up most of the diet of pallid bats in central California.

The CNDDB reports two non-specific occurrences of the pallid bat within the quadrangles reviewed, the nearest of which is a historical (1928) occurrence located approximately eight miles from the survey area. The other occurrence, reported in 2003, is located approximately 12 miles from the project site. Suitable foraging habitat is present and trees in the wooded habitats of the survey area provide suitable roosting habitat for this species. Therefore, this species has a moderate potential to occur within the survey area.

Townsend's Big-Eared Bat

The Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) is a CDFW species of special concern. The Townsend's big-eared bat is a year-round resident in California occurring from low desert to mid-elevation montane habitats. It is found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Townsend's big-eared bats typically roost during the day in caves and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. It hibernates in mixed sex aggregations of a few to several hundred individuals. Hibernation is more prolonged in colder areas. This species arouses periodically and moves to alternative roosts and actively forages and drinks throughout the winter. A single young is born per year between May and July. Females form maternity colonies of 35 to 200 individuals, while males roost individually. Townsend's big-eared bats feed primarily on small moths that are gleaned from vegetation.

The CNDDB reports one historical (1945), non-specific occurrence of Townsend's big-eared bat within the quadrangles reviewed, located approximately eight miles from the survey area. Suitable foraging habitat is present and trees in the wooded habitats of the survey area provide suitable roosting habitat for this species. Therefore, this species has a moderate potential to occur within the survey area.

Raptors and Other Protected Avian Species

Raptors and their nests are protected under the California Fish and Game Code. While the life histories of these species vary, overlapping nesting and foraging similarities (approximately February through August) allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest vegetation types, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland and habitat edges. Various common raptor species (such as red-tailed hawk [*Buteo jamaicensis*], red-shouldered hawk [*Buteo lineatus*], and turkey vulture [*Cathartes aura*]) have the potential to nest within the trees present within and adjacent to the survey area.

IMPACT DISCUSSION:

a. Special status species such as CTS, SCLTS, and CRLF have the potential to occur within all undeveloped portions of the project area, including ruderal areas, Monterey pine forest, oak woodland, and scrub habitat within and adjacent to the survey area. Removal of vegetation as well as conventional trenching and jack and bore for pipeline installation could result in direct and indirect impacts to these species. Direct impacts include mortality of individuals, while indirect impacts include loss of habitat for these species. Implementation of Mitigation Measures BIO-1 through BIO-9 would reduce potential for impacts to special status species.

SFDFW was observed within the survey area and has the potential to occur within the Monterey pine forest, oak woodland, and scrub habitat within and adjacent to the survey area. Removal of vegetation during construction could result in direct and indirect impacts to SFDFW. Direct impacts include mortality of individuals or nests, while indirect impacts include loss of habitat. Implementation of Mitigation Measures BIO-1 through BIO-8, and BIO-10 would reduce the potential for impacts to SFDFW.

The survey area provides potential nesting habitat for birds of prey and birds listed by the MBTA. The survey area contains suitable nesting habitat for ground and tree-nesting species, particularly within the Monterey pine, oak woodland, and scrub habitats within the survey area, and trees and shrubs immediately adjacent to the survey area. Nests could become established in the vegetation to be removed before construction begins. Construction-related activities that occur within the general nesting season (February through August) have the potential to result in direct and indirect take of an active nest. Construction activities that could result in direct impacts to nesting birds include vegetation and tree removal. Indirect impacts that could occur during construction include an increase in human activity, construction noise and dust in the immediate vicinity of an active nest that could result in significant harassment and nest abandonment, causing take of the nest. Therefore, there may be a potential for impacts to occur to nesting birds, particularly during the general nesting season of February 1 through August 31. Implementation of Mitigation Measures BIO-1 through BIO-8, and BIO-11 would reduce the potential for impacts to nesting birds of prey and birds listed by the MBTA.

The survey area provides suitable habitat for special-status bat species identified in the "Setting" above. Suitable foraging and roosting habitat for these species is present within the survey area. Construction activities, including vegetation removal, may result in direct and indirect impacts to these species if these species are using the site for day, night, or maternity roosts. Direct impacts include mortality of individuals or roosts, while indirect impacts include loss of habitat. Implementation of Mitigation Measures BIO-1 through BIO-8, and BIO-12 would reduce the potential for impacts to special-status bat species.

This is considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measure BIO-1 through Mitigation Measure BIO-9 below.

b. Construction of the project will result in temporary impacts to CRLF Critical Habitat Mapping Unit SCZ-2, as described in the "Setting" above. Critical Habitat for any listed species is considered a sensitive natural community. Construction of the project will also result in temporary impacts to coast live oak woodland, as described above coast live oak woodland is considered a sensitive natural community by the County and is considered ESHA under the CCA. As required by SCCC Section 16.32, the project must obtain a biotic approval from the County for development within a sensitive habitat and will comply with all permit requirements.

   Potential impacts include any vegetation removal and any ground disturbance including trenching and jack and bore to install the pipeline. Implementation of BIO-1 through BIO-4, BIO-7, and BIO-9 are recommended to reduce, or avoid potential impacts to sensitive habitats. In addition, BIO-13 is included below to restore any sensitive habitats impacted during project construction. This is considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measures BIO-1 through BIO-4, BIO-7, BIO-9, and BIO-13.

c. There are no state or federally protected wetlands within the project site; therefore, ***no impact*** would result from implementation of the project.

d. With the exception of the booster pump station and fire hydrants, all project features would be below ground and would not permanently remove any wildlife habitat. The majority of the project site and the surrounding areas are developed and disturbed, and provide little habitat for wildlife species. As a result, the development of the project, would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Application of the provided mitigation measures would further protect biological resources in the project area; therefore, this represents a ***less than significant impact with mitigation incorporated***.

e. The project will not conflict with local policies or ordinances protecting biological resources, including the County of Santa Cruz General Plan. The Biological Resources Report prepared for the project would comply with the requirements of Chapter 16.32 of the Santa Cruz County Code. The survey area surrounding the project site lies within critical and sensitive habitat; implementation of Mitigation Measures BIO-1 through BIO-12 would reduce or avoid potential for impacts to sensitive habitats. In addition, BIO-13 would restore any sensitive habitats impacted during project construction. The project does not propose the damage or removal of significant trees; if tree removal is required during construction, appropriate actions will be undertaken to minimize impacts to resources and to comply with Chapter 16.32 and 16.34 of the Santa Cruz

County Code. Therefore, this represents a ***less than significant impact with mitigation incorporated***.

f. There are no adopted HCPs, NCCPs, or other approved local, regional or state habitat conservation plans located within the project area. The Ellicott Slough National Wildlife Refuge and accompanying comprehensive conservation plan are located approximately 600 feet to the northeast of the School and outside of the project area. ***No impact*** would result from conflict with these plans.

Mitigation Measures incorporated into the project:

BIO-1 Every individual working on the Project must attend biological awareness training prior to working on the job site. The training shall be delivered by a qualified biologist and shall include, at minimum, information regarding the following:

a. Location and identification of sensitive habitats and all special-status species with potential to occur in the survey area including information specific to identifying the special-status species identified above, the habitat for these species, and the project specific measures being implemented to protect these species.

b. The importance of avoiding impacts to special-status species and their habitat, and the steps necessary if any special-status species is encountered at any time.

c. Identification of the limits of work, and project-specific avoidance measures and permit conditions that must be followed.

BIO-2 Disturbance of Monterey pine forest, oak woodland, and scrub vegetation and removal of native trees within these habitats shall be avoided to the maximum extent possible.

BIO-3 Native vegetation that cannot be avoided shall be cut at ground level rather than removed by the roots when possible.

BIO-4 Prior to commencement of construction, high visibility fencing and/or flagging shall be installed, with the assistance of a qualified biologist, to indicate the limits of work and the boundaries of sensitive habitat areas to be avoided.

a. The limits of work shall be designated to avoid impacts to the surrounding Monterey pine forest, oak woodland, and scrub habitat, to the maximum extent possible and to maximize native tree and shrub vegetation.

b. No work-related activity including equipment staging, vehicular access, grading and/or vegetation removal shall be allowed outside the designated limits of work.

BIO-5 If any special-status species is identified in the project impact area at any time prior to or during construction, work shall cease immediately in the vicinity of the individual. The animal shall either be allowed to move out of harm's way on its own or a qualified biologist shall move the animal out of harm's way to a safe relocation site pursuant to all species-specific restrictions and regulations.

BIO-6 During initial clearing, grubbing, and grading within the Monterey pine forest, oak woodland, and scrub habitat, a qualified biologist shall be present to conduct daily monitoring activities to ensure

compliance with measures are in place for protection of special status species that may be encountered. After initial clearing, grubbing and grading has been completed, an alternate construction monitor may be trained and designated for execution of daily monitoring activities.

BIO-7 Daily monitoring by the project biologist or construction monitor shall occur for the duration of project construction within the Monterey pine forest, oak woodland, and scrub habitat. Daily monitoring activities shall include the following at minimum:

a. Monitoring the work area for the presence of special-status species and verifying that individuals are properly relocated out of harm's way as needed, pursuant to all species-specific restrictions and regulations.

b. Monitoring the exclusionary fencing at the project site to verify good working condition and prevent wildlife entrapment.

c. Checking under all equipment for wildlife before use.

d. Verifying that at the end of each workday, all excavations shall be secured with a cover, or a ramp installed to prevent wildlife entrapment.

e. All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.

BIO-8 During project activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

BIO-9 To avoid/minimize impacts to special-status amphibians, including CTS, SCLTS, and CRLF, the following measures shall be adhered to:

a. The project applicant will comply with the CESA and will coordinate with the CDFW to determine whether incidental take authorization for CTS, and SCLTS is required prior to issuance of a grading permit. If it is determined that authorization for the incidental take of these species is required from the CDFW, the project applicant will comply with the CESA to obtain a 2081 incidental take permit from CDFW prior to the issuance of a grading permit. Permit requirements typically involve the preparation and implementation of a mitigation plan and mitigating impacted habitat at a 3:1 ratio through preservation and/or restoration. The project applicant would be required to retain a qualified biologist to prepare a mitigation plan, which will include, but is not limited to, identifying avoidance and minimization measures, and identifying a mitigation strategy that includes a take assessment, avoidance and minimization measures, compensatory mitigation lands, success criteria, and funding assurances. The project applicant would be required to implement the approved plan and any additional permit requirements.

b. The project will comply with the ESA and conduct consultation with the USFWS to determine whether incidental take authorization for CTS, SCLTS, and CRLF is required prior to issuance of a grading permit. If it is determined that authorization for the incidental take of these species is required from the USFWS, the project will comply with the ESA to obtain Section 7 or Section 10 authorization from USFWS at the project-level prior to the issuance of a grading permit. Permit requirements typically involve the

preparation and implementation of a mitigation plan and mitigating impacted habitat at a 3:1 ratio through preservation and/or restoration. The project applicant would be required to retain a qualified biologist to prepare a mitigation plan, which will include, but is not limited to, identifying avoidance and minimization measures, and identifying a mitigation strategy that includes a take assessment, avoidance and minimization measures, compensatory mitigation lands, success criteria, and funding assurances. The project applicant would be required to implement the approved plan and any additional permit requirements.

c. A qualified biologist will survey the proposed work area and immediately adjacent areas 48 hours before and the morning of the onset of work activities for the presence of special-status amphibians. If any life stage of CTS, SCLTS, or CRLF is observed, construction activities will not commence until CDFW/USFWS is consulted and appropriate actions are taken to allow project activities to continue.

d. During ground disturbing and vegetation removal activities, a qualified biologist shall survey appropriate areas of the construction site daily before the onset of work activities for the presence of special-status amphibians. The qualified biologist shall remain available to come to the site if a special-status amphibian is identified until all ground disturbing activities are completed. If any life stage of CTS, SCLTS, or CRLF is found and these individuals are likely to be killed or injured by work activities, the qualified biologist shall be contacted, and work shall stop in that area until the special-status amphibian has moved on its own out of the work area and the USFWS has been contacted. Construction activities will not resume until the USFWS is consulted and appropriate actions are taken to allow project activities to continue.

e. After ground disturbing and vegetation removal activities are complete, or earlier if determined appropriate by the qualified biologist, the qualified biologist will designate a construction monitor to oversee on-site compliance with all avoidance and minimization measures. The qualified biologist shall ensure that this construction monitor receives sufficient training in the identification of special-status amphibians. The construction monitor or the qualified biologist is authorized to stop work if the avoidance and/or minimization measures are not being followed. If work is stopped, the USFWS shall be notified. The qualified biologist and the construction monitor shall complete a daily log summarizing activities and environmental compliance throughout the duration of the proposed project.

f. Only tightly woven fiber netting or similar material may be used for erosion control at the project site. Coconut coir matting is an acceptable erosion control material. No plastic mono-filament matting will be used for erosion control, as this material may ensnare wildlife, including special-status amphibians.

g. Because dusk and dawn are often the times when special-status amphibians are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour after sunrise.

h. To avoid or minimize impacts to special-status amphibians and their habitat, suitable habitat (i.e., ruderal areas, Monterey pine forest, oak woodland, scrub) shall be avoided to the greatest extent feasible. In addition to the high visibility fencing described in BIO -4,

amphibian specific wildlife exclusion fencing will be installed around the perimeter of the project work area, where suitable habitat is present, to prevent special-status amphibians from migrating into the project area during the breeding season. A qualified biologist will supervise the installation of exclusion fencing. The status of the fencing will be monitored in accordance with BIO-4 above.

BIO-10 To protect San Francisco dusky-footed woodrat, a qualified biologist shall implement the following protection measures:

a. Within two weeks prior to commencement of development activities (including clearing and grubbing) a qualified biologist shall survey the project disturbance area to identify any woodrat nest locations that may be affected by the proposed development. All woodrat nests within the construction impact area and a 25-foot buffer shall be clearly flagged.

b. If no woodrat nests are found during the survey, no further avoidance and minimization measures for this species are necessary.

c. If woodrat nests are found, the construction contractor shall avoid the nests to the extent feasible by installing a 25-foot buffer with protective fencing or other material that shall prohibit encroachment. A reduction in the size of this buffer, or encroachment into this buffer, may be allowed if the biologist determines that microhabitat conditions such as shade, cover and adjacent food sources can be retained.

d. If avoidance of woodrat nests is not possible, a qualified biologist shall develop and implement a Woodrat Relocation Plan to be implemented prior to the commencement of construction. The plan shall include the following:

i. Trapping efforts and relocation activities shall not take place during low night temperatures (below 40 degrees Fahrenheit), inclement or extreme weather conditions.

ii. If no San Francisco dusky-footed woodrats are captured at a given nest, it shall be dismantled by hand to ground level, and the woody debris spread to reduce rebuilding.

iii. For occupied nests, the existing woodrat nest shall be dismantled and the woody debris, including cached food and nesting material, carried to the nearest suitable relocation site outside the project footprint and used to build an artificial shelter.

iv. Sites for artificial shelters shall be located as near as possible to the original nest location and no closer than 20 feet from existing woodrat nests and other artificial shelters. Choose the best available microhabitat, ideally in a location with sun and shade and if possible under the same species of tree or shrub as was present at the original nest location. Relocation sites shall contain biologically-suitable habitat features (e.g. stands of poison oak, coast live oaks, and dense native brush).

v. When releasing woodrats, the occupied live-trap shall be placed against the entrance to the artificial shelter, opened, and the woodrat allowed to enter, ideally on its own accord. After the individual enters, the entrance shall be loosely but completely plugged with dirt and leaf duff to encourage it to stay, at least for the short-term.

vi. If occupied nests were relocated, monitoring shall be conducted for 30 days after relocation is completed and include infrared and motion activated cameras, or other monitoring methods, and an occupancy assessment. A report on San Francisco dusky-footed woodrat nest monitoring shall be provided to County Environmental Planning within 30 days following the end of the monitoring period and shall include the methods and results of trapping and relocation, occupancy determinations, monitoring methods, and discussion of any remedies that may be needed.

BIO-11 To avoid/minimize impacts to nesting birds the following measures shall be adhered:

a. If removal of trees/vegetation, grading activity, or other use of heavy equipment begins outside of the February 1 to August 31 breeding season, there will be no need to conduct a preconstruction survey for active nests.

b. If removal of trees/vegetation, grading activity, or other use of heavy equipment is to commence between February 1 and August 31, a survey for active bird nests shall be conducted by a qualified biologist within two weeks prior to the start of such activity. The survey area shall include the survey area, and a survey radius around the survey area of 50 feet for MBTA birds and 250 feet for birds of prey.

c. If no active nest of a bird of prey or MBTA bird is found, then no further avoidance and minimization measures are necessary.

d. If active nest(s) of MBTA birds or birds of prey are found in the survey area, the following avoidance buffers shall be adhered to unless otherwise advised by CDFW or USFWS: Avoidance buffer of 50 feet for MBTA birds and 250 feet for birds of prey shall be established around the active nest(s). The biologist shall monitor the nest and advise the applicant when all young have fledged the nest. Removal of vegetation, grading activity, or other use of heavy equipment may begin after fledging is complete.

e. If the biologist determines that a smaller avoidance buffer will provide adequate protection for nesting birds, a proposal for alternative avoidance/protective measures, potentially including a smaller avoidance buffer and construction monitoring, may be submitted to USFWS and CDFW for review and approval prior to removal of vegetation, grading activity, or other use of heavy equipment.

f. If removal of vegetation, grading activity, or other use of heavy equipment stops for more than two weeks during the nesting season (February 1 - August 31) a new survey shall be conducted prior to re-commencement of construction.

BIO-12 To avoid/minimize impacts to special-status bats the following measures shall be adhered to:

a. To the extent practical limbing/tree removal operations should occur between September 15 and November 1 to avoid bat maternity roosts and winter hibernacula. If tree limbing/tree removal operations must occur outside the period of September 15 through November 1 a survey for bats shall be conducted by a qualified biologist.

b. Prior to commencement of construction related activities including tree trimming and removal, a qualified biologist shall conduct a pre-construction survey for bats as follows:

i. The biologist shall determine if bats are utilizing the site for roosting. For any trees/snags/buildings that could provide roosting space for cavity or foliage-roosting bats, potential bat roost features shall be thoroughly evaluated to determine if bats are present. Visual inspection and/or acoustic surveys shall be utilized as initial techniques.

ii. If roosting bats are found, the biologist shall develop and implement acceptable passive exclusion methods in coordination with or based on CDFW recommendations. If feasible, exclusion shall take place during the appropriate windows (September 15 and November 1) to avoid harming bat maternity roosts and/or winter hibernacula. (Authorization from CDFW is required to evict winter hibernacula for bats).

iii. If established maternity colonies are found, a buffer shall be established around the colony to protect pre-volant young from construction disturbances until the young are no longer reliant upon the roost for survival.

iv. If a tree is determined not to be an active roost site for roosting bats, it may be immediately limbed or removed as follows:

1. If foliage roosting bats are determined to be present, limbs shall be lowered, inspected for bats by a bat biologist, and chipped immediately or moved to a dump site.

2. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or moved to a dump site. No logs or tree sections shall be dropped on downed limbs or limb piles that have not been in place since the previous day.

BIO-13 To compensate for disturbance of sensitive habitats, and to comply with the Santa Cruz County General Plan Policy 5.1.12, the area of temporarily disturbed sensitive habitat shall be replaced in-kind at a minimum restoration to impact ratio of 1:1. A site-specific Habitat Restoration Plan shall be developed by a qualified biologist or restoration professional, and shall include the following minimum elements:

a. Identification of areas on site where temporary disturbance and re-establishment of native habitat shall occur. All areas temporarily disturbed as a result of the project shall be restored to pre-project contours to the maximum extent possible and re-vegetated with native plant species appropriate to the habitat disturbed.

b. A tree inventory assessment including the species, size, and locations of all trees intended for removal.

c. All native trees removed shall be replaced in-kind at a minimum 1:1 ratio. Non-native trees removed shall be replaced at a minimum 1:1 ratio by native tree species appropriate to the surrounding habitat.

d. A site-specific planting plan intended to inform the re-vegetation efforts. Local plant stock shall be used whenever possible. The plant pallet should include native species common to the surrounding native habitats that are being restored.

5. CULTURAL RESOURCES

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §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?	☐	■	☐	☐

SETTING:

A Phase 1 Cultural Resource Inventory was prepared for the project by Albion Environmental, Inc. (Albion, 2023). Albion's study was conducted to comply with requirements under CEQA guidelines (Public Resources Code 21000 et seq.). The purpose of this Phase I cultural resource inventory was to document cultural resource identification efforts for the project. The study included archival and background research, a search of records at the California Historical Resources Information System's Northwest Information Center (NWIC), Native American stakeholder outreach, and a pedestrian survey of the project area.

A search of records at the NWIC indicated that one previous cultural resource study has been conducted within the project area and that four previous cultural resource studies have been conducted within a 0.5-mile radius of the project area. Additionally, the records search identified one cultural resource, consisting of a segment of the Southern Pacific Railroad, within the proposed project area; two previously recorded cultural resources, consisting of historic residences, were identified within a 0.5-mile radius of the proposed project area.

After reviewing the record search results, Albion conducted an intensive pedestrian survey of the project area. During the survey, ground surface visibility was generally poor due to the project area being built over or landscaped with grasses or other vegetation, especially in the western portion of the proposed project site along San Andreas Road and within the paved parking and access areas of the school. No evidence for the presence of cultural resources within the proposed project area were identified. Albion's investigation indicates that the proposed project area does not contain cultural deposits and no further studies (e.g., resource identification or evaluation) are recommended.

The Native American Heritage Commission (NAHC) provided the results of a Sacred Lands File search and list of Tribal stakeholders on April 14, 2023. According to the NAHC, the Sacred Lands File search was positive for tribal resources, and for specific information about these tribal resources, the NAHC recommended Albion contact the Costanoan Ohlone Rumsen-Mutsen Tribe for information. The Native American stakeholder list includes groups or individuals who may have knowledge of cultural resources in

the area. Letters containing a brief project description and maps of the proposed project area were sent via USPS certified mail on April 28, 2023. To date, Albion's outreach effort documented Costanoan Ohlone Rumsen-Mutsen Tribe concerns about the project area and cultural resources, this is discussed further in **Section 18. Tribal Resources**.

Archaeologists working in California's central coast have generally recognized six major periods of precolonial human occupation. The initial period, Paleo-Indian, originated during the Late Pleistocene and continued until approximately 9950 BP. This was followed by the Millingstone (9950–5450 BP), during which milling equipment (manos and metates) become increasingly abundant in the archaeological record and populations apparently followed a generalized subsistence pattern. The ensuing period, the Early Period (5450–2550 BP), was a time of new subsistence emphases, including a greater reliance on hunting and the exploitation of acorns. The Middle Period (2500–950 BP) was marked by the intensification of subsistence practices, especially a greater reliance on marine and littoral foods. During the Middle/Late Transition (950–700 BP), central Californian populations experienced deteriorating environmental parameters, and apparently underwent major adaptive shifts in both subsistence and settlement. In general, archaeological sites dating to the Middle/Late Transition are poorly represented along the central California coast. Finally, the Late Period (700–181 BP) was a time marked by the appearance of numerous projectile points, including small side-notched (Desert side-notched), triangular (Cottonwood series), and leaf-shaped points.

The project area is located within the former Rancho San Andrés. Rancho San Andrés was an 8,911-acre Mexican land grant given in 1833 by Governor José Figueroa to José Joaquín Castro. The grant on Monterey Bay extended from La Selva Beach on the north to Watsonville Slough on the south. Rancho Aptos, which was owned by Castro's son, Rafael Castro, formed the north boundary of the grant. After the ranchos began to dwindle, the area was used for agriculture in the American Period. The community at La Selva Beach was founded in 1925 and named Rob Roy by real estate developer David Batchelor. In 1935 the name was changed to La Selva Beach by a new developer, Edward Burghard. Most of the existing houses were built in the early 1960s. An aerial photograph from 1938 indicates the project area contained a ranch complex with multiple structures visible, as well as a network of access roads; the current school campus appears to be built within the same footprint as the historic-era structures visible on the aerial image. San Andreas Road is visible as a defined roadway, although likely a dirt road.

P-44-000377 is a recorded segment of the Southern Pacific Railroad which is located between the Renaissance High School campus and San Andreas Road. The railroad is recorded with a primary number (P-44-00037) and is recorded as a linear historic structure/resource. The segment would not be impacted by the project as the new waterline will be installed below the railroad grade (Albion 2023).

IMPACT DISCUSSION:

a. CEQA Guidelines §15064.5 describes a historical resources as: 1) any resource that is listed in, or determine to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources; 2) a resource included in a local register of historical resources; and, 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant based on substantial evidence in light of the whole record. The fact that a resource is not listed in or determined to be eligible for listing does not preclude a lead agency from determining that the resource may be a historical resource (CEQA Guidelines §15064.5(4)). A substantial change includes the physical demolition, destruction, relocation, or alteration of a resource or its immediate surroundings such that the significance would be materially impaired (CEQA Guidelines §15064.5(b)).

The project would not cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5. The proposed project would not cause a significant impact to the Southern Pacific Railroad segment because the new water line would be installed below the railroad grade. Therefore, the project will have a ***less than significant impact*** on historical resources as defined in CEQA Section 15064.5.

b. Public Resources Code §21083.2 requires that lead agencies evaluate potential impacts to archaeological resources. Specifically, lead agencies must determine whether a project may have a significant effect or cause a substantial adverse change in the significance of an archaeological resource. The findings of the Phase I cultural report documented that one previous archaeological study had been conducted within the proposed project area and four cultural resource studies have been previously conducted within a 0.5-mile radius of the project area. Additionally, the report identified one cultural resource is within the project area. Two previously recorded cultural resources, consisting of historic residences, were identified within a 0.5-mile radius of the project area. Accordingly, the project would not significantly impact a known archaeological resource, as there are no known archaeological resources within the boundaries of the project site.

Although not anticipated, there is the potential for inadvertent discovery of archaeological resources during construction, which may result in potential inadvertent damage or disturbance to a resource. Mitigation Measure CR-1 would avoid any impacts related to unknown archaeological resources. This is considered ***a less than significant impact with mitigation incorporated***.

c. Human graves are often associated with prehistoric occupation sites. Section 7050.5 of the California Health and Safety Code states that it is a misdemeanor to knowingly disturb a human burial and Section 5097.99 of the Public Resources Code defines the obtaining or possession of Native American remains or grave goods to be a felony.

Although not anticipated, there is the potential for inadvertent discovery of human remains and potential inadvertent damage or disturbance during construction. Mitigation Measure CR-2 would avoid any impacts related to human remains. This is a ***less than significant impact with mitigation incorporated***,

Mitigation Measure(s) incorporated into the project:

CR-1 If archaeological resources are unexpectedly discovered during construction, work shall be halted within 50 meters (±160 feet) of the find until it can be evaluated by a qualified professional archaeologist in collaboration with a Native American representative. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented by PVUSD in coordination with a qualified professional archaeologist in collaboration with a Native American representative.

CR-2 If human remains are unexpectedly discovered during construction, work shall be halted within 50 meters (±160 feet) of the find. The County Coroner shall be notified in accordance with provisions of Public Resources Code 5097.98-99 in the event human remains are found and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code Section 5097 if the remains are determined to be of Native American origin. The Commission will designate a Most Likely Descendant who will be authorized to provide recommendations for management of the Native American human remains. (California Public Resources Code Section 5097.98; and Health and Safety Code Section 7050.5)

6. ENERGY

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

SETTING:

The proposed project includes repair and replacement of the Renaissance High School water distribution system. Energy usage would not be significantly changed as the project consists of replacing the School's existing water supply well with groundwater produced from the SqCWD water supply wells, and SqCWD aims to use energy-efficient technologies in their water system. The project would use a high-efficiency pressure pump motor as the primary energy conservation measure incorporated into the project. Pacific Gas and Electric Company (PG&E) has historically been the primary electricity provider for the County of Santa Cruz.

Beginning in 2018, Santa Cruz County customers began to receive their electricity from Central Coast Community Energy (3CE) (previously known as Monterey Bay Community Power [MBCP]). 3CE is a community choice energy agency that has committed to providing its customers with 100% carbon-free energy by the year 2030 (3CE, 2023). Community choice energy agencies allow local governments to procure power on behalf of their residents, businesses, and municipal accounts from an alternative supplier while still receiving transmission and distribution service from their existing utility provider (in this case, PG&E). This is typically an attractive option for communities that want more local control over their electricity sources, more clean energy than their default utility offers, and/or lower electricity prices. Per Public Utilities Code Section 366.2, customers have the right to opt-out of the community choice energy program and continue to receive service from the incumbent utility (PG&E) if they choose.

The County of Santa Cruz has adopted the 2022 Climate Action and Adaptation Plan (2022 CAAP) to provide a strategic framework with actionable to steps towards reducing the causes of global warming, adapting communities to climate hazards and ensuring the safety and well-being of those most vulnerable to climate change. The 2022 CAAP includes energy-related goals and strategies for the development and use of alternative forms of energy in new and existing buildings, microgrid development, and achieving 100% clean energy provided by 3CE.

IMPACT DISCUSSION:

a. Electricity and natural gas for the project site would be provided by PG&E. The project's construction and operational energy usage are included in **Appendix C. CalEEMod Results Renaissance High School Water System Improvements Project Summary Report**, based on

GHG emissions and modeling using CalEEMod, version 2022.1. Electricity and natural gas consumption are compared to existing consumption in the PG&E service areas. Project modeling provides an estimate of construction and operational emissions and energy consumption. The project would not consume large amounts of energy outside the functions commonly found within water systems. The anticipated construction schedule assumes that the project would be built out over the course of approximately 40 days. The construction phase would require energy for the preparation of the site (e.g., excavation, and grading), and the actual construction of the facilities. Petroleum based fuels such as diesel fuel and gasoline would be the primary sources of energy for these tasks. The overall construction of the project has been designed to be energy-efficient in order to avoid excess fuel and rental equipment costs. During operation, the project would consume energy in the form of electricity primarily for pumping for water distribution. Based on the discussion above, the project would result in a ***less than significant impact*** during the construction and operational phases related to energy use.

b. The project would comply with existing state energy standards and would not conflict with or obstruct a state or local plan for renewable energy or energy-efficiency. The project would be designed to comply with the California Green Building Code, Title 24 energy efficiency requirements, and 2022 California Building Energy Standards requirements. The project would result in a ***less than significant impact*** resulting from conflict or obstruction with a state or local plan for renewable energy or energy efficiency.

7. GEOLOGY AND SOILS

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	■	☐
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? 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?	☐	☐	■	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 most recent 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?	☐	☐	☐	■

SETTING:

The proposed project is located within the South Coast Range, consisting of a series of longitudinal mountains and valleys, which parallel the coastline and separate the Pacific Ocean from the Central Valley for nearly 250 miles, from the San Francisco Bay Area to the Santa Ynez Mountains. The range is highly folded and fractured and is generally attributed to events associated with subduction of the Pacific Plate beneath the western border of North America. Steep slopes with exaggerated relief are common where the mountains rise abruptly from the sea. Overall, however, this range is not particularly high, with an average of 760 meters to 1,830 meters in height. (Albion. 2023).

Soils within the vicinity of the proposed project are mapped as consisting of Baywood fine sand, which are characterized as somewhat excessively drained fine sand derived from ancient Aeolian sands (Albion. 2023).

According to the 2021-2026 County of Santa Cruz Local Hazard Mitigation Plan (LHMP), there are several active and potentially active faults within Santa Cruz County. Zones of fracture are designated in the Seismic Safety Element of the General Plan/Local Coastal Plan and California State designated Seismic Review Zones. Fault zones designated for review by the County include the Butano, Sargent, Zayante, and Corralitos complexes. State-designated seismic review zones include the San Andreas, San Gregorio, and portions of the Zayante and Butano complexes. No new active or potentially active faults have been identified in the County for the 2021 plan update. (County of Santa Cruz. 2021). According to the 1994 County of Santa Cruz General Plan Safety Element, the County is susceptible to earthquakes and other natural hazards, such as the Loma Prieta earthquake. On October 17, 1989, the Loma Prieta earthquake struck Santa Cruz County and was the largest to strike California since 1906. The earthquake destroyed 674 dwellings, 32 mobile homes and 310 businesses within the county and the

State Office of Emergency Services estimated monetary damages to residential buildings at $176 million and $98 million to commercial structure. Significant damage to streets, water systems, sewer systems and other public infrastructure was related to liquefaction and subsidence from the earthquake (County of Santa Cruz. 1994).

Liquefaction is the transformation of loose, water-saturated granular materials (such as sand or silt) from a solid to a liquid state accompanying ground shaking during an earthquake. Liquefaction commonly leads to ground failure. On slopes, liquefaction may result in slope failure. Most of the valley bottoms in the southern regions of the County are underlain by alluvium and are considered at very high, high, or moderate risk for liquefaction potential based on the Santa Cruz County Liquefaction Hazard Areas map (County of Santa Cruz. 2021). The Liquefaction Hazards Area map of the County of Santa Cruz designates the liquefaction potential zone of the project area as D "Low," therefore the proposed project area has a low liquefaction potential.

Landsliding is a general term that describes a wide variety of mass downslope movements of soil and rock in response to gravity. Landsliding occurs as falls, topples, slides, spreads, flows, and a combination of these categories, and may change from one form of failure to another during their movement. Factors causing landsliding include the rock strength and orientation of elements on the slope, erosion, weathering, high rainfall, steepness of slopes, recent fire activity, and human activities such as the removal of vegetation and inappropriate grading. Landsliding occurs throughout Santa Cruz County, but is centered primarily along the steeper slopes in the hills and mountains, along stream corridors, and along coastal bluffs and inlets (County of Santa Cruz. 2021). The proposed project area is not located within a designated landslide zone or within an area with steep slopes or shallow groundwater that indicate a potential for landslides to occur. The project site is relatively flat and is not located in the vicinity of slopes that would be susceptible to landslides.

Expansive soils are generally clays or sedimentary rocks derived from clays, which experience volume changes as a result of moisture variation. The hazard that expansive soils create can be significant. Many of the expansive soils do not create large areas of destruction; however, they can disrupt supply lines (i.e., roads, power lines, railways, and bridges) and damage structures. The US Department of Agriculture's Web Soil Survey (WSS) shows the project site is underlain primarily by Baywood loamy sand, 0% to 2% slopes and Elder sandy loam, 2% to 9% slopes, MLRA 14 (U.S. Department of Agriculture. 2021). These soils are not expansive. The US Department of the Interior's US Geological Survey (USGS) Geologic Map of Santa Cruz County and the County of Santa Cruz GISWeb tool show the geologic units of the proposed project area as Qcl (lowest emergent coastal terrace deposit).

IMPACT DISCUSSION:

a.i. Although the project site is in a region with several faults, it is not mapped within an Alquist-Priolo Earthquake Fault Zone. The nearest fault is the Zayante Fault, located approximately 4.5 miles to the northeast (California Department of Conservation. 2023). The project site is not located within a mapped County or State Fault Zone. In addition, the project would be designed to conform with the California Building Code (CBC) and seismic requirements. This is considered a ***less than significant impact***.

a.ii. Seismic ground shaking is influenced by the proximity of the site to an earthquake fault, the intensity of the seismic event, and the underlying soil composition. As described above, the project site is located approximately 4.5 miles southwest of the Zayante Fault and is not within a County or State Fault Zone. The proposed water system improvements would not expose people to potential substantial adverse effects beyond the current level of exposure. The effect of seismic

ground shaking would be further minimized through the implementation of the seismic requirements and applicable County standards for earthquake-resistant construction; therefore, potential impacts would be ***less than significant***.

a.iii. Liquefaction tends to occur in loose, saturated and fine-grained cohesionless sands, coarse silts or clays with a low plasticity. In order for liquefaction to occur there must be the proper soil type, soil saturation, and cyclic accelerations of sufficient magnitude to progressively increase the water pressures within the soil mass. Non-cohesive soil shear strength is developed by the point-to-point contact of the soil grains. As the water pressures increase in the void spaces surrounding the soil grains the soil particles become supported more by the water than the point-to-point contact. When the water pressures increase sufficiently, the soil grains begin to lose contact with each other resulting in the loss of shear strength and continuous deformation of the soil where the soil appears to liquefy. Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope.

According to the County of Santa Cruz LHMP, the proposed project area has a low liquefaction potential. Liquefaction induced lateral spreading occurs when a liquefied soil mass fails toward an open slope face or fails on an inclined topographic slope. Due to the relatively flat project site and low liquefaction potential, the risk of lateral spreading is also considered to be low. The proposed project would result in a ***less than significant impact*** resulting from its potential to cause substantial adverse effects involving seismic-related ground failure, including liquefaction.

a.iv. The subject site and immediate vicinity are relatively flat. The potential for landsliding to occur and adversely affect the proposed development is considered negligible. This is considered a ***less than significant impact***.

b. The proposed project site is within a paved road right-of way (San Andreas Road), a railroad easement, and previously disturbed areas. The project proposes approximately 17,550 cubic feet (650 cubic yards) of cut and the same amount of fill. The project would not require a grading permit from the County of Santa Cruz because excavation activities for wells and utilities are exempt per Chapter 16.20.050(F) of the Santa Cruz County Code (County of Santa Cruz, 2023c). Improper grading, both during and post-construction, has the potential to increase the volume of runoff from a site and subsequently increase erosion. Construction of the proposed project would result in the potential for erosion or loss of topsoil from excavation activities required for the installation of pipelines. However, any erosion or loss of topsoil would be minimal because construction activities would use a jack & bore trenchless installation method under the railroad tracks, and erosion or loss of topsoil would be largely contained to open trenching within existing disturbed areas and the San Andreas Road right-of-way. For these reasons, the project would have a ***less than significant impact***.

c. See impact discussions for a.i-a.iv above. Any impact resulting from unstable soil would be temporary, as construction is anticipated to last 40 days. The project contractor would fully comply with all state, federal, and other laws, rules, regulations to ensure worker safety during construction. Risks to life and property would not occur during operation of the project, because the project components would be primarily underground. This represents a ***less than significant impact***.

d. According to the LHMP, the project site is not located within an area with expansive soils. Construction of the project would be required to comply with the most recent regulatory

requirements, which would ensure the protection of structures and occupants from geo-seismic hazards, such as expansive soils; therefore, therefore ***no impact*** would occur.

e. The project is a water distribution system consolidation and improvements project and does not propose any septic tanks or alternative wastewater disposal systems. ***No impact*** from the project would occur.

f. The project site is flat and does not contain any known unique paleontological resources or sites or unique geologic features. ***No impact*** from the project would occur.

Mitigation Measure(s) incorporated into the project:

CR-1 The full text of this mitigation is included in **Section 5. Cultural Resources**.

8. GREENHOUSE GAS EMISSIONS

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

SETTING:

Greenhouse gases (GHGs) are gases that absorb and re-emit infrared radiation in the atmosphere. The gases that are widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

GHGs are emitted by both natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills.

The County of Santa Cruz 2019 inventory focuses on the three greenhouse gases most relevant to County operations: carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Other gases are omitted from the inventory, specifically those emitted primarily in private sector manufacturing and electricity transmission (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluorides). This approach is consistent with typical community inventory approaches, as industrial emissions are outside of a County's

jurisdictional control. Emissions totals are then presented as "CO_2 equivalent" (CO_2E) by converting the relative impacts of methane and nitrous oxide to their CO_2 equivalent. Broken down by sector, 70.4% of GHG emissions coming from transportation, which includes passenger vehicles (51.2%), commercial vehicles (13.6%), public transit (1.0%) and off-road equipment (4.6%). Residential and nonresidential natural gas and propane total 24.1% of GHG emissions compared to 0.4% for both residential and nonresidential electricity. The amount of GHG from transportation is the most significant contributor, with natural gas and propane from the built environment being next (County of Santa Cruz, 2022).

Unincorporated Santa Cruz County GHG emissions reduction strategies and objectives are informed by the State of California GHG emissions reduction targets. In 2016, the State passed Senate Bill (SB) 32, which requires California to reduce GHG emissions by 40% below 1990 levels by 2030. In September 2022, Assembly Bill (AB) 1279 was signed, declaring it a policy of the State to achieve net zero greenhouse gas emissions by 2045, and to achieve and maintain net negative greenhouse gas emissions afterwards. AB 1279 requires that by 2045, statewide greenhouse gas emissions caused by humans be reduced to at least 85% below 1990 levels. Addressing the remaining 15%, the bill requires implementation of a variety of policies and strategies to enable carbon dioxide removal solutions and carbon capture, utilization, and storage technologies in California. The 2022 CAAP strives to meet the SB 32 target of reducing GHG emissions 40% below 1990 levels before 2030, while simultaneously establishing a policy framework to achieve the longer-term target of net negative GHG emissions by 2045 (AB 1279). In addition to being compliant with State law, the 2022 CAAP sets forth GHG reduction targets as the specific measurable outcomes to be achieved by the County of Santa Cruz. Federal and State legislation will reduce the County's GHG emissions associated with transportation, building efficiency and renewable electricity (County of Santa Cruz, 2022).

The significance of GHG emissions may be evaluated based on locally adopted quantitative thresholds or consistency with a regional GHG reduction plan (such as a Climate Action Plan). MBARD has developed a GHG threshold of 10,000 metric tons per year CO_2e ($MTCO_2e$/ year) for stationary source projects, which includes equipment, processes, and operations that require an Air District permit to operate (MBARD, 2016).

State Requirements

Assembly Bill 32

In response to an increase in man-made GHG concentrations over the past 150 years, California has implemented AB 32, the "California Global Warming Solutions Act of 2006." AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 (essentially a 15% reduction below 2005 emission levels) and the adoption of regulations to require reporting and verification of statewide GHG emissions.

Senate Bill 32

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law. SB 32 extends GHG reduction goals beyond the initial target year of 2020 in AB 32, directing the CARB to ensure that GHGs are reduced to 40% below the 1990 level by 2030.

Assembly Bill 1279

AB 1279 was signed by the governor on September 16, 2022. In order to further reduce GHG concentrations, AB 1279 requires the state to achieve net zero greenhouse gas emissions as soon as possible, but no later than 2045, as well as reduce statewide GHG emissions by 85% below the 1990 levels, and directs the CARB to work with relevant state agencies to achieve these goals.

Climate Change Scoping Plan

CARB's 2022 Climate Change Scoping Plan reflects the statewide GHG emissions reductions of 85 percent below 1990 emissions levels by 2045, as directed by AB 1279. A significant part of achieving the AB 1279 goals include strategies to reduce fossil fuel combustion by using clean technologies and fuels, further reduce short-lived climate pollutants, support sustainable development, increase actions on natural and working lands to reduce emissions and sequester carbon, and capture and store carbon.

Executive Order B-55-18

Executive Order (EO) B-55-18 was issued in September 2018, establishing a new statewide goal to achieve "carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter."

Local Requirements

The 2045 Metropolitan Transportation Plan (MTP) and Sustainable Communities Strategy (SCS) prepared by AMBAG is a local plan that include goals and policies related to the reduction of GHG emissions. The MTP is a long-range planning document that defines how the region plans to invest in the transportation system over the next 25 years based on regional goals, multi-modal transportation needs for people and goods, and estimates of available funding. The MTP includes the SCS as required by SB 375.[1] The SCS sets forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, will reduce GHG emissions from passenger vehicles and light trucks to achieve the GHG reduction targets set by the California Air Resources Board. The future land use and transportation scenario presented in the SCS must accommodate forecast population, employment, and housing sufficient to meet the needs of all economic segment of population, including the State-mandated Regional Housing Needs Assessment (RHNA), while considering State housing goals.

IMPACT DISCUSSION:

a. As discussed in **3. Air Quality** above, implementation, construction, and operation of the project will not exceed established thresholds for air quality emissions. Operation of the project would not generate emissions since the project consists primarily of linear pipelines with no increase in staff. Very few vehicular trips to the site will be required intermittently for maintenance. Project construction would generate an estimated emission of 33 MT of CO_2e. This falls far below the

[1] SB 375 directs CARB to set regional targets for reducing greenhouse gas emissions. The law establishes a "bottom up" approach to ensure that cities and counties are involved in the development of regional plans to achieve those targets. SB 375 builds on the existing framework of regional planning to tie together the regional allocation of housing needs and regional transportation planning in an effort to reduce GHG emissions from motor vehicle trips.

threshold of 10,000 MT of CO_2e per year. For this reason, this is considered a ***less than significant impact***.

b. The project would be consistent with the Santa Cruz County General Plan, the AMBAG 2045 Metropolitan Transportation Plan/Sustainable Communities Strategies (RTP/SCS), the 2022 Climate Change Scoping Plan, and Executive Order B-55-18, which are regulations adopted to implement a statewide, regional, or local plan to reduce or mitigate GHG emissions. Based on the modeling results, project-related GHG emissions would not exceed any significance threshold established for GHGs. Furthermore, the operational component of the project would not result in an increase in existing operation and maintenance related emissions because operational maintenance trips to the proposed project would be minimal and infrequent. This represents a ***less than significant impact.***

9. HAZARDS AND HAZARDOUS MATERIALS

Would the project:	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	■	☐
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	■
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard 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?	☐	☐	■	☐

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	■	☐

SETTING:

The Hazardous Waste and Substances Site ("Cortese") List is a planning tool used by the state, local agencies, and developers to comply with CEQA requirements related to the disclosure of information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the California EPA (CalEPA) to develop at least annually an updated Cortese List. Various state and local government agencies are required to track and document hazardous material release information for the Cortese List. The proposed project area is not within 0.25 miles of a hazardous materials site on the Cortese Site List.

The California Department of Toxic Substance Control (DTSC) EnviroStor database tracks DTSC cleanup, permitting, enforcement, and investigation efforts at hazardous waste facilities and sites with known contamination, such as federal superfund sites, state response sites, voluntary cleanup sites, school cleanup sites, school investigation sites, and military evaluation sites.

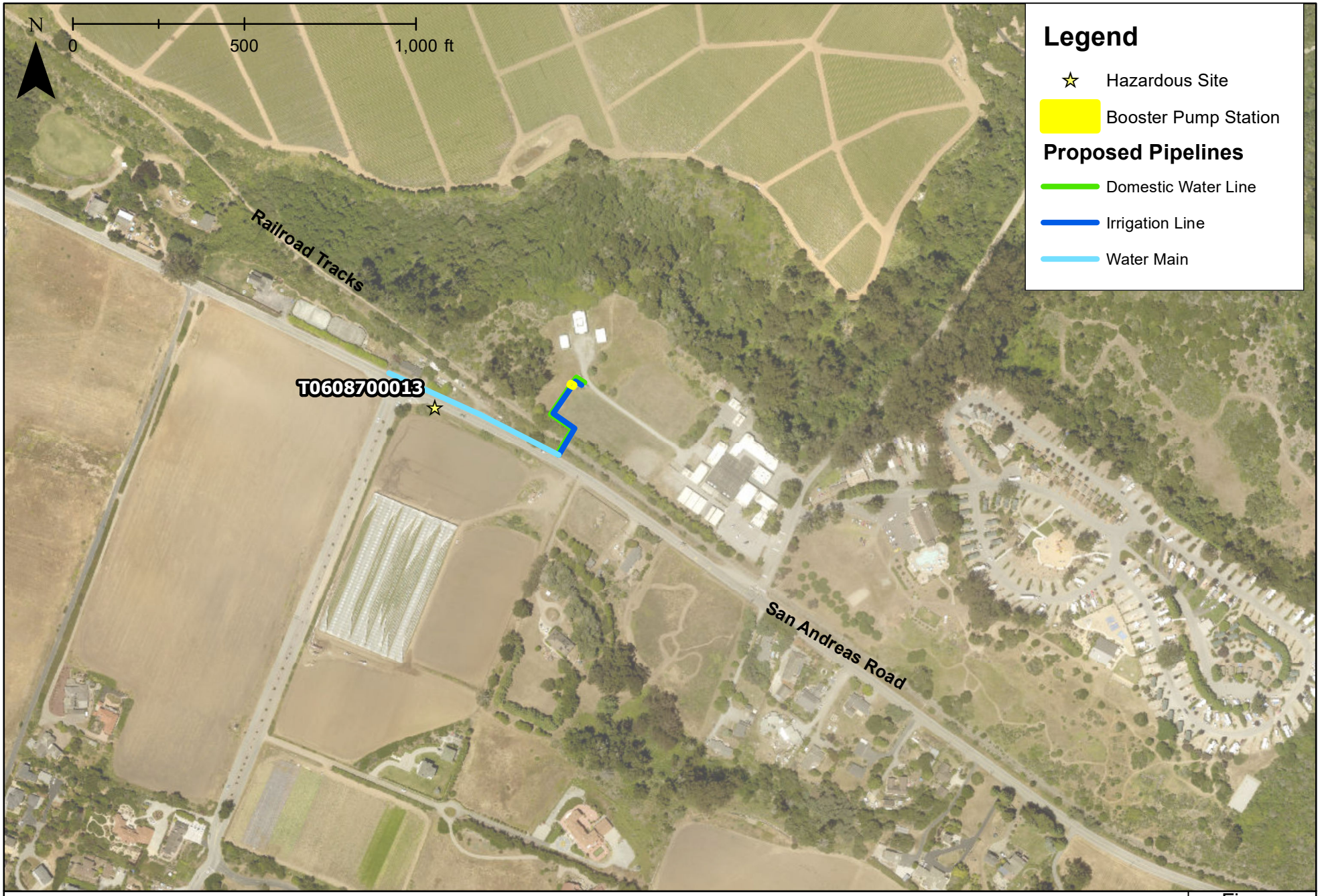
The SWRCB GeoTracker database contains records for sites that impact, or have the potential to impact, water in California, such as Leaking Underground Storage Tank (LUST) sites, Department of Defense sites, and Cleanup Program Sites (SWRCB, 2023). **Table 4. GeoTracker Sites within 0.25 Miles of the Project** below includes a summary of the site that is within 0.25 miles of the project site. This site is also shown in **Figure 11. Hazardous Sites Map.**

Table 4.
GeoTracker Sites within 0.25 Miles of the Project

Site	GeoTracker Number	Site Type	Cleanup Status
Delaney's Property	T060870013	LUST Cleanup Site	Completed – Case closed as of 3/1/1994

As noted above, the Delaney's Property site is considered "Completed - Case Closed" and is located in the vicinity of the southern boundary of the proposed project area, near the intersection of San Andreas Road and Sand Dollar Drive.

The project site is located primarily within existing rights-of-way and previously disturbed areas, and it is not within the vicinity of hazardous waste facilities. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment.



Hazardous Sites Map

Renaissance High School Project
Initial Study
December 2023

Figure
11

Path: C:\GIS\GIS_Projects\2022-75 Renaissance HS\Map Products\TL Maps\Hazardous Sites Map.mxd

Renaissance High School, the school associated with the proposed project, is located within the proposed project area. The project proposes to retain a qualified environmental professional to conduct soil sampling and analysis for hazardous materials in the area of excavation near the existing railroad line to determine if such chemicals (e.g., heavy metals, petroleum products) are present above applicable regulatory environmental screening levels. If the results indicate soil concentrations above the environmental screening levels, a Site Management Plan (SMP) will be prepared that identifies remedial measures and/or soil management practices to ensure public safety. The soil sampling and SMP would be conducted in consultation and under the direction of the Santa Cruz County Regional Transportation Commission (SCCRTC).

The Watsonville Municipal Airport is a public airport located approximately 3 miles east of the proposed project area. The Watsonville Municipal Airport Master Plan was last revised in 2023 (City of Watsonville, 2023). The proposed project area is not within the planning area, any Safety Compatibility Zone, or any airport noise contour for the Watsonville Municipal Airport Master Plan.

IMPACT DISCUSSION:

a. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment. These materials would be handled and stored in compliance with all local, State, and Federal regulations pertaining to hazardous materials. This is considered a ***less than significant impact***.

b. There are typically two types of hazardous materials releases that could occur during construction: 1) the accidental release of hazardous materials that are routinely used during construction activities; and 2) the potential for construction activities to encounter and excavate contaminated soil or groundwater that are already present at the construction site and thus release it to expose new receptors to the hazard.

   One property with known soil and/or groundwater contamination is identified in **Table 4. GeoTracker Sites within 0.25 Miles of the Project** above. One environmental case was identified using GeoTracker that may have potentially affected soil or subsurface conditions within 0.25 mile of the proposed project site. As described above, the site is considered “Completed – Case Closed,” meaning that a closure letter or other formal closure decision document has been issued for the site. The project is not located within 0.25 miles of a hazardous materials site on the Cortese List. The above conditions are not anticipated to affect the project site.

   The project area has been historically used for ranching and educational purposes. The project consists of the construction and consolidation of water distribution system improvements for Renaissance High School which is considered a sensitive use. If present, suspicious soil would be managed during construction in accordance with all state and local regulations to protect worker safety. Standard best management practices, such as stopping work and notifying the Santa Cruz County Environmental Health Division if soil contamination is suspected or encountered during construction activities (e.g., unusual soil discoloration or strong odor) until appropriate health and safety procedures have been determined and employed, would be implemented to reduce potential impacts to less than significant.

   Operation of the proposed project would not result in exposure to hazardous materials because the components of the project would be primarily underground. Any potential hazardous materials on the site would not be accessible to the public or nearby residents.

For the above reasons, the project impacts related to hazardous materials would be considered ***less than significant***.

c. The project site includes Renaissance High School. No hazardous materials are anticipated to be stored on-site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment. These materials would be handled and stored in compliance with all local, State, and Federal regulations pertaining to hazardous materials.

The project proposes to retain a qualified environmental professional to conduct soil sampling and analysis for hazardous materials in the area of excavation near the existing railroad line to determine if such chemicals (e.g., heavy metals, petroleum products) are present above applicable regulatory environmental screening levels. If the results indicate soil concentrations above the environmental screening levels, a Site Management Plan (SMP) will be prepared that identifies remedial measures and/or soil management practices to ensure public safety. The soil sampling and SMP would be conducted in consultation and under the direction of the Santa Cruz County Regional Transportation Commission (SCCRTC).

Therefore, a ***less than significant impact*** would result.

d. The project site is not on or within the vicinity of a hazardous site as designated by Government Code Section 65962.5 (i.e., Cortese List). Therefore, ***no impact*** would result.

e. The nearest private airstrip is the Monterey Bay Academy Airport located approximately 1.25 miles south of the project area. The nearest public airport is the Watsonville Municipal Airport located approximately 3 miles to the east of the project area. Due to the fact that most project features would be underground, operation of the project would not affect airport operations or create a safety hazard. The project is not located within an airport noise contour. Therefore, ***no impact*** would result.

f. The project does not include any characteristics or features that would interfere with an adopted emergency response plan or emergency evacuation plan. Once operational, the components of the project would be primarily underground. For these reasons, this is considered a ***less than significant impact***.

g. The project site is located within the San Andreas Road right-of-way, within a railroad easement, and on the Renaissance High School campus. The proposed project is surrounded primarily by agriculture, rural residences, and open space. The CAL FIRE Hazard Severity Zone map and County of Santa Cruz LHMP Fire Hazard Severity Zones (FHSZ) map show the project site is not within a Very High, High, or Moderate FHSZ (CALFIRE, 2007). Furthermore, the project consists of water supply improvements that would increase municipal water availability in the area. Implementation of the proposed project would not further expose people or structures to wildland fires, this is considered a ***less than significant impact***. See also **Section 20. Wildfire**.

10. HYDROLOGY AND WATER QUALITY

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

SETTING:

The project site is located within the San Andreas Watershed. The San Andreas watershed is bordered on the north and east by the Pajaro River watershed and to the west by the Aptos Creek watershed. San Andreas drains an area of approximately 15 square miles and is comprised of Bush Gulch and two unnamed streams. Land use is predominantly agricultural with some rural and urban residential areas (County of Santa Cruz, 2024).

Corralitos-Pajaro Valley Groundwater Basin

The project site is located within the Corralitos - Pajaro Valley Groundwater Subbasin (Basin 3-002.01) (California Department of Water Resources, 2023). The Pajaro Valley is completely dependent on local groundwater, surface water, and recycled water. Decades of groundwater overdraft lowered water levels throughout the Basin, and eventually caused seawater to intrude into freshwater aquifers. PV Water is a state-chartered special purpose district formed under State Law pursuant to the Pajaro Valley Water Management Agency Act. Pajaro Valley Water (PV Water) was formed to efficiently and economically manage existing and supplemental water supplies to prevent further increase in, and to accomplish continuing reduction of, long-term overdraft and to provide and ensure sufficient water supplies for present and anticipated needs within its boundaries. PV Water has the authority to adopt ordinances to conserve local groundwater supplies that all public and private water purveyors within the Agency's boundaries must adhere to. The PV Water service area is comprised of portions of three counties consisting of Santa Cruz, Monterey, and San Benito Counties. PV Water is the Groundwater Sustainability Agency (GSA) for the Pajaro Valley Groundwater Subbasin and received approval for their alternative management plan under the Sustainable Groundwater Management Act (SGMA, PRWFPA, 2019).

To eliminate groundwater overdraft and stop seawater intrusion, PV Water has constructed supplemental water supply facilities that reduce coastal groundwater production. Existing facilities include the Harkins Slough Managed Aquifer Recharge and Recovery Facility, the Watsonville Area Recycled Water Facility, blend wells, and a connection to the City of Watsonville's potable water system. New projects will utilize locally available surface water resources to increase the supplemental water supply and include the College Lake Integrated Resources Management Project and the Watsonville Slough System Managed Aquifer Recharge and Recovery Projects approved in 2021. In addition, a multi-phase Recycled Water Facility Optimization Project, which includes treatment, storage, and distribution improvements has been partially constructed (PV Water, 2022).

In 2015, the State legislature approved the groundwater management law known as the Sustainable Groundwater Management Act (SGMA). The purpose of the SGMA is to protect groundwater resources over the long-term. SGMA requires local agencies to form groundwater sustainability agencies (GSAs) for the high and medium priority basins. GSAs develop and implement groundwater sustainability plans (GSPs) to avoid undesirable results and mitigate overdraft within 20 years (California Department of Water Resources, 2023). The Department of Water Resources (DWR) implements regulatory oversight of the GSAs.

DWR designated the Pajaro River Valley Groundwater Subbasin as a critically overdrafted subbasin. As part of sustainable groundwater management, the Basin's sustainability status is analyzed by comparing conditions to SGMA sustainable management criteria as defined in the GSP Alternative and the GSU22. The sustainability indicators applicable to the Basin are seawater intrusion, reduction of groundwater in storage, chronic lowering of groundwater levels, depletions of interconnected surface water, and degraded water quality. A USGS investigation of land subsidence confirmed the lack of observed permanent subsidence in the Basin and reaffirmed that subsidence sustainable management criteria are not required for the Basin. Minimum thresholds were met and undesirable conditions are not occurring related to seawater intrusion and reduction of groundwater in storage. Thresholds and milestones have not been met related to chronic lowering of groundwater levels, depletions of interconnected surface water, and degraded water quality. DWR approved PV Water's Basin Management Plan as a Groundwater Sustainability Plan Alternative in July 2019. PV Water submitted the Basin Management

Plan: Groundwater Sustainability Update 2022 (GSU22), its first GSP-Alternative 5-year update, along with other associated documents to DWR in December 2021 (PV Water, 2022).

Santa Cruz Mid-County Groundwater Basin

The proposed project would connect the Renaissance High School water system to the SqCWD water system. SqCWD is one of the partner agencies that comprise the Santa Cruz Mid-County Groundwater Agency (MGA), which oversees groundwater management activities for the overdrafted Mid-County Groundwater Basin (Basin 3-001). The groundwater basin is currently in a state of overdraft, meaning more water is being extracted than naturally replenished by rainfall. DWR classified the Basin as a high-priority groundwater basin in critical overdraft due to the ongoing threat of further seawater intrusion into Basin groundwater supplies. On June 17, 2014, the District Board declared a Groundwater Emergency and Stage 3 Water Restriction based on the critical overdraft of the groundwater basin and the seawater contamination occurring (SqCWD, 2024a). Additionally, the MGA developed a Groundwater Sustainability Plan that was approved in January 2021 by the DWR (MGA, 2023).

SqCWD water is pumped with wells from the Santa Cruz Mid-County Groundwater Basin (Mid-County Groundwater Basin). The Mid-County Groundwater Basin comprises two primary aquifers: the Purisima Aquifer Formation and the Aromas Red Sands. The Purisima provides two-thirds of the SqCWD annual production for Capitola, Soquel, and Aptos. The Aromas Red Sands provides the remaining one-third for the Seascape, Rio Del Mar, and La Selva Beach communities (SqCWD, 2024a). The Mid-County Groundwater Basin is shared with other users throughout the area, including the City of Santa Cruz, Central Water District, County of Santa Cruz, and private-well owners.

As stated above and in **Section 19. Utilities and Service Systems**, SqCWD's primary water supply source is local groundwater from the Mid-County Groundwater Basin produced by the District's wells. SqCWD is developing auxiliary water supplies to meet the 1,500 acre-feet per year of supplemental water to bring the portion of the basin out of overdraft. SqCWD is constructing the Pure Water Soquel (PWS) project to produce up to 1,500 acre-feet per year of purified water to help reduce overdraft and address water resource issues in the basin. The PWS project is SqCWD's groundwater replenishment and seawater intrusion prevention project to take highly treated wastewater and purify it to replenish the groundwater basin (currently the SqCWD's sole source of drinking water) and to prevent further seawater intrusion while providing a reliable water supply. PWS will take treated wastewater from the Santa Cruz Wastewater Treatment Facility for further processing in a new water purification center and the water will be conveyed to the Seawater Intrusion Prevention Wells to replenish the basin and create a barrier against seawater intrusion. PWS is currently under construction and is anticipated to operate by the end of 2024. MGA and SqCWD are implementing the Groundwater Sustainability Plan, Community Water Plan, and Urban Water Management Plan to meet the goal of groundwater sustainability by 2040.

The proposed project would require trenching, which could result in minimal erosion of onsite soils and potential sedimentation during heavy wind or rain events. The project would be required to comply with all local, state, and federal requirements. Since the disturbance for the project is less than one acre, a Stormwater Pollution Protection Plan is not required. The project includes best management practices to control erosion and sedimentation into local surface water drainage in accordance with the County of Santa Cruz Construction Site Stormwater Pollution Control BMP Manual. Additionally, the project would comply with the adopted standards contained within the County of Santa Cruz Municipal Code, Chapter 16.22 (Erosion Control).

According to the Federal Emergency Management Agency (FEMA), the proposed project site is in an area of minimal flood hazard (Zone X) and is not located within a flood zone (FEMA, 2023). In addition, the project area is not located within a tsunami inundation area (County of Santa Cruz, 2023a).

IMPACT DISCUSSION:

a. The proposed project would require on-site trenching, which could result in the erosion of onsite soils and sedimentation during heavy wind or rain events. The project does not include commercial, industrial, or other uses that would generate a substantial amount of contaminants or discharge runoff either directly or indirectly into a public or private water supply, or reduce water quality in local water bodies. Proposed trenching could result in minimal erosion of onsite soils and potential sedimentation during heavy wind or rain events. The project would be required to comply with all local, state, and federal requirements. Since the disturbance for the project is less than one acre, a Stormwater Pollution Protection Plan is not required. The project includes best management practices to control erosion and sedimentation into local surface water drainage in accordance with the County of Santa Cruz Construction Site Stormwater Pollution Control BMP Manual. Additionally, the project would comply with the adopted standards contained within the County of Santa Cruz Municipal Code, Chapter 16.22 (Erosion Control). The project would not violate water quality standards and waste discharge requirements; therefore, impacts would be ***less than significant*.**

b. The project involves connecting the School water system to the SqCWD existing water system infrastructure as well as demolition of the existing active and inactive School wells and would not impede sustainable groundwater management in the basin. Although SqCWD primary water supply source is local groundwater from the Mid-County Groundwater Basin, with water infrastructure projects in development and adequate community water conservation, the SqCWD water supply is expected to remain stable and meet the MGA and SqCWD goal of water sustainability by 2040. The project would serve an existing school that was previously pumping groundwater from an onsite well and would not induce population growth in the area. For these reasons, the project would not lead to a substantial depletion of groundwater supplies, and impacts would be ***less than significant***.

c.i-iv. The project includes the construction of a water main, distribution line, and new booster pump station in order to serve the existing school. Construction activities for pipeline installation would involve trenching, jack and bore, and other pipeline installation methods that would disturb both paved roadways and unpaved land within the project site, this disturbance would be temporary. Construction would be required to comply with BMPs and Santa Cruz County Municipal Code requirements which would reduce impacts related to erosion and surface runoff. After construction, the project area would be restored to its original condition, and any drainage pattern within the right-of-way would be returned to existing conditions following project construction activities. In addition, once in place, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding onsite or offsite or create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. BMPs would be implemented during construction activities to minimize runoff and erosion. Finally, the project would not impede or redirect flood flows, since the project consists of underground pipelines. For these reasons***, less than significant impacts*** would result from construction and operation of the project.

d. Tsunamis or “tidal waves” are seismic waves created when displacement of a large volume of seawater occurs as a result of movement on seafloor faults. The project site is located outside a tsunami hazard zone. The project site is not located within any flood zones. The project is a water distribution system consolidation and improvements project and would not present a significant risk release of pollutants due to project inundation. Therefore, the project would have ***no impact*** related to the risk release of pollutants due to project inundation due to these areas.

e. As described above under “Setting,” although the Mid-County Groundwater Basin is a critically overdrafted basin, the DWR considers it managed by MGA’s GSP. Additionally, SqCWD and MGA have established a goal to become groundwater sustainable by 2040 and the PWS project is anticipated to operate in 2024. Therefore, the project would have ***less than significant impacts*** regarding conflicting with or obstructing applicable water quality control plans or sustainable groundwater management plans.

11. LAND USE AND PLANNING

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

SETTING:

The proposed project is within the jurisdiction of the County of Santa Cruz and within unincorporated Santa Cruz County, see **Figure 1. Regional Location Map.**

The project area is governed by the County of Santa Cruz 1994 General Plan and is within the La Selva Planning Area. The Renaissance High School campus is designated as Public Facility/Institutional (P), the railroad easement is designated as Agriculture (AG) and Public Facility/Institutional (P), and the San Andreas Road portion is designated as Public Facility/Institutional (P), Rural Residential (R-R), and within the public right-of-way (no designation). Surrounding land uses include agriculture to the north and south, agriculture and rural residences to the west, and parks and recreation to the east.

IMPACT DISCUSSION:

a. The project consists of a water distribution system. The project includes the extension of water lines and construction of water system improvements in order to serve the project area. With the exception of the booster pump station, all pipeline components will be installed underground and will not physically divide the community in any way. No changes in land use are planned and the community would not be divided by the actions of the proposed project. Therefore, the proposed project would not physically divide an established community and ***no impact*** would result.

b. The project would not conflict with any policy adopted for the purposes of avoiding and/or mitigating an adverse environmental effect. Construction of the project is limited to trenching for pipeline installation primarily within the school campus and road right-of-way, and jack and bore method for the railroad crossing. As a result, potential impacts would be minimized. Where appropriate, this IS/MND has identified a number of mitigation measures to further ensure that impacts would be less than significant. The consolidation of the Renaissance High School water system to the SqCWD water system is consistent with the land use designations on the site and within the project area. This is considered a ***less than significant impact***.

12. MINERAL RESOURCES

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

SETTING:

The County of Santa Cruz's primary mineral resources are sand, rock, and gravel. The site is not within a Santa Cruz County General Plan designated mineral resources area. In accordance with the Surface Mining and Reclamation Act of 1975 (SMARA), the California Geological Survey (CGS) maps the regional significance of mineral resources throughout the state, with priority given to areas where future mineral resource extraction could be precluded by incompatible land use or to mineral resources likely to be mined during the 50-year period following their classification. The State Board of Mining and Geology has adopted regulations to protect lands classified as MRZ-2 (i.e., lands where information indicates that significant stone, sand, and/or gravel deposits are present, or where a high likelihood for their presence exists; and lands otherwise designated as areas of statewide or regional significance relative to mineral resources). Updated mapping completed in 2021 of the project site area by CGS did not indicate that the project site contained any MRZ-2 designated resource zones.

IMPACT DISCUSSION:

a. Based on the Santa Cruz County General Plan, the project area has not been identified as an area that contains any known mineral resources that would be of value to the region and the residents of the state. The project would involve excavation through the open trenching and jack & bore processes in construction of water connection pipelines. However, this would largely occur within areas that are already highly disturbed, in areas where no mineral resources have been identified. Therefore, there would be ***no impact***.

b. There are no known or mapped mineral resources in the project area and the likelihood of future mining of important resources within the project area is very low. The project does not have a designated mineral resource designation or overlay. Therefore, no potential significant loss of availability of a known mineral resource recovery site delineated on a local general plan, specific plan or other land use plan would occur as a result of this project. There would be ***no impact***.

13. NOISE

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

SETTING:

In the context of this document, “noise” is defined as unwanted sound. The primary source of existing noise in the proposed project area is traffic on adjacent roadways, primarily San Andreas Road. Renaissance High School onsite is also a source of existing noise in the proposed project area.

Community noise levels are typically measured in terms of A-weighted decibels (dBA). A-weighing is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. Equivalent noise level (Leq) is the average noise level on an energy basis for a specific time period. The duration of noise and the time of day at which it occurs are important factors in determining the impact of noise on communities. The Community Noise Equivalent Level (CNEL) and Day-Night Average Level (Lnd) account for the time of day and duration of noise generation. These indices are time-weighted average values equal to the amount of acoustic energy equivalent to the time-varying sound over a 24-hour period. The Noise Element of the County’s General Plan includes compatibility standards for noise exposure by land use. These include exterior noise standards as shown in **Table 5. Acceptable through Unacceptable Ranges of Noise Exposure by Land Use** and **Table 6. Maximum Allowable Noise Exposure**.

Policy 9.2.6 of the Noise Element of the Santa Cruz County General Plan requires mitigation and/or best management practices to reduce construction noise as a condition of project approvals, particularly if noise levels would exceed 75 dB at neighboring sensitive land uses or if construction would occur for more than 7 days.

Table 5.
Acceptable through Unacceptable Ranges of Noise Exposure by Land Use*
(*outdoor noise exposure measured at the property line of receiving land use)[1]

Land Use	55	60	65	70	75	80	85
A. Residential/Lodging – Single Family, Duplex, Mobile Home, Multifamily							
B. Schools, Libraries, Religious Institutions, Meeting Halls, Hospitals							
C. Outdoor Sports Arena or Facility, Playgrounds, Neighborhood Parks							
D. Office Buildings, Business Commercial, and Professional							
E. Industrial, Manufacturing, Utilities, Agriculture							

	Normally Acceptable: Specific land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements, and can meet the indoor noise standards.
	Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design to meet interior and exterior noise standards, where applicable.
	Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design to meet interior and exterior noise standards, where applicable.
	Clearly Unacceptable: New construction or development should generally not be undertaken

[1] Community noise exposure provided in DNL or CNEL, dB
Source: Santa Cruz County General Plan, Noise Element, Table 9-2

The County of Santa Cruz General Plan, Noise Element, dated February 2020, provides regulation and guidelines regarding noise (Santa Cruz County, 2020). The County of Santa Cruz noise thresholds for industrial land uses are:

- Under 70 dB CNEL is considered normally acceptable
- Between 70 dB CNEL and 85 dB CNEL is considered conditionally acceptable

Table 6.
Maximum Allowable Noise Exposure
Stationary Noise Sources[1]

Period	Daytime[5] (7 AM to 10 PM)	Nighttime[2,5] (10 PM to 7 AM)
Hourly Leq – average hourly noise level, dB[3]	50	45
Maximum level, dB[3]	70	65
Maximum level dB – Impulsive Noise[4]	65	60

dB = decibel
[1] As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied on the receptor side of noise barriers or other property line noise mitigation measures.
[2] Applies only where the receiving land use operate or is occupied during nighttime hours.
[3] Sound level measurements shall be made with "slow" meter response.
[4] Sound level measurements shall be made with "fast" meter response.
[5] Sound level measurements shall be made with "slow" meter response.
Source: Santa Cruz County General Plan, Noise Element, Table 9-3

IMPACT DISCUSSION:

a. The proposed project would construct water distribution pipelines within the project area, which is predominately public facility/institutional. The booster pump project components may produce a small permanent increase in noise throughout the project area; however, the project would result in short-term noise increases in the immediate vicinity of construction. Sensitive receptors in the project area include Renaissance High School and nearby residences within the immediate vicinity of the pipelines along San Andreas Road. Project construction would generate a temporary increase in noise associated with the use of construction equipment. Noise generated by pipeline installation can vary greatly depending on the specific equipment selected by the construction contractor. The contractor would be using standard equipment associated with pipeline construction including jack and bore rig, a crane, excavators, loaders, dump trucks, and hauling vehicles. Construction phases include site preparation, grading, trenching, and paving that would take place over a maximum of 40 days. General work hours would be limited to the daytime hours from 8 A.M. to 5 P.M., Monday through Friday. However, due to the project site's close proximity to sensitive receptors, construction noise could result in a significant impact.

Although noise impacts to nearby sensitive receptors during construction would be temporary, based on the proximity of the nearest receptor and the rate that noise diminishes, construction activities would likely exceed the County's noise related threshold. This is considered a ***less than significant impact with mitigation incorporated***, see Mitigation Measures NSE-1 and NSE-2 below.

The distribution pipeline would not generate any permanent noise during project operation, as it would be entirely underground and consists of water pipelines. The booster pumps and pressure tanks would be above ground and housed in a small, 112 square foot structure (booster pump station). The structure would consist of a foundation and a weather enclosure; the booster pump station would not be suitable for human occupancy. The project would result in a ***less than significant impact*** due to a permanent increase in ambient noise levels.

b. The project is not subject to substantial groundborne vibration, nor would it generate any permanent source of groundborne vibration at nearby sensitive receptors. Construction activities may generate groundborne vibration; however, these activities would be temporary, and the vibration effects of typical construction equipment is not expected to affect nearby sensitive residential receptors. This constitutes a ***less than significant impact***.

c. The nearest private airstrip is the Monterey Bay Academy Airport located approximately 1.25 miles south of the project area. The nearest public airport is the Watsonville Municipal Airport located approximately 3 miles to the east of the project area. The project area is not located within the noise contours, airport influence area (AIA), or safety zones of the Watsonville Municipal Airport Master Plan. Additionally, the proposed project consists of water system connections to the SqCWD water system and would not place new development within vicinity of the Watsonville Municipal Airport. Therefore, ***no impact*** would occur.

Mitigation Measures incorporated into the project:

NSE-1 All equipment shall be properly maintained and all internal combustion engine-driven equipment shall be equipped with intake and exhaust mufflers that are in good condition and appropriate for the equipment. Equipment engine shrouds shall be closed during equipment operations. The applicant shall require all contractors, as a condition of contract, to maintain and tune-condition all construction equipment to minimize noise emissions. Additionally, all stationary noise generating equipment (e.g., compressors) and equipment staging areas shall be located as far as possible from adjacent residential receivers.

NSE-2 The project contractor shall designate a "disturbance coordinator" responsible for responding to any complaints about construction noise. The disturbance coordinator will be responsible for notifying neighboring residences of planned construction schedules at least 72 hours in advance. The disturbance coordinator's telephone number shall be posted at the project site and included in the notice. All noise complaints shall be sufficiently examined and promptly addressed.

14. POPULATION AND HOUSING

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

SETTING:

According to the 2020 Decennial Census, the current population of the County of Santa Cruz is 270,861 persons. In 2022, AMBAG published a new regional growth forecast which projects a 2045 population of 294,967 residents and a 2035 population of 288,523 residents for Santa Cruz County.

The project consists of consolidating the Renaissance High School water system with the SqCWD water system. Project components include a 540-foot water main, a 400-foot domestic water line, a 310-foot irrigation line, and a booster pump station. In total, these components include approximately 1,250 linear feet (0.24 miles) of new pipelines and a 112 square foot booster pump station. The proposed project would connect to the SqCWD system, upgrade the current Renaissance High School distribution infrastructure, and bring the water system into regulatory compliance. The project would not displace any existing housing.

IMPACT DISCUSSION:

a. The project would only serve the existing school that is currently served by the Renaissance High School water system. The Renaissance High School water system is served by one active well and has faced challenges related to hex-chromium concentrations, aging infrastructure, minimal fire protection, and reliance on a single source of supply. Consolidation of the Renaissance High School system and connection to the SqCWD water system would provide potable water to the existing school. The project would construct needed improvements to deliver a reliable and potable water supply to the school. Therefore, the project would serve an existing community and would not induce substantial population growth in the area. This is a ***less than significant impact***.

b. The project involves the construction and operation of a water main, domestic water line, irrigation line, booster pump station, and connection to the SqCWD water system. The new service connection would only serve the existing school. The project would not displace substantial numbers of existing people, housing, or necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would result**.**

15. PUBLIC SERVICES

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

SETTING:

Fire protection services for the project area are provided by the Central Fire District of Santa Cruz County (CFD). Seven fire stations serve the CFD, and the closest fire station to the project site is Station 7 La Selva Beach, located at 312 Estrella Avenue in La Selva Beach. Law enforcement services for the project area are provided by the Santa Cruz County Sheriff's Department. The nearest police station to the project site is the Aptos/La Selva Sheriff's Service Center located at 171 Aptos Village Way, Suite T1 in Aptos. Pajaro Valley Unified School District serves the elementary, middle, and high schools of the area.

IMPACT DISCUSSION:

a.i, ii, iii. Because the project is a water service and supply project, it would have no post-construction impact on the Fire Department or Sheriff's Department. Although unlikely, these departments could possibly be required to respond to potential construction-related emergencies. The beneficiary of the proposed project is Renaissance High School. The project would benefit Renaissance High School by providing adequate drinking water supplies and fire protection storage for the school. Construction is expected to be completed within 40 days and would not significantly impact fire protection or police protection services or require the construction of new or remodeled facilities. This represents a ***less than significant impact***.

a.iv, v. The water supply project would have no physical impact on parks, or other public facilities and would not require the construction of new or remodeled facilities. ***No impact*** would result from implementation of the proposed project.

16. RECREATION

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

SETTING:

The proposed project is a water system project. The project does not include any recreational facilities. There are no existing recreational facilities within the vicinity of the proposed project.

IMPACT DISCUSSION:

a, b. The project is a water system project and would not increase the use of surrounding recreational facilities and would not contribute to the physical deterioration of park facilities or necessitate the construction of new recreational facilities. ***No impact*** to recreational facilities would result from implementation of the project.

17. TRANSPORTATION

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

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	■	☐
d. Result in inadequate emergency access?	☐	☐	☐	■

SETTING:

The proposed project is located in the community of La Selva Beach in unincorporated Santa Cruz County. Regional access to the project site is provided from Highway 1 via the Buena Vista Drive exit and San Andreas Road. According to Figure 3-9 Functional Street Classification of the Aptos Planning Area in the Circulation Element of the 1994 County of Santa Cruz General Plan, San Andreas Road is considered an arterial. However, the County of Santa Cruz Geographic Information Services (GIS) Department published a FHWA layer and description where the Federal Highway Administration (FHWA) functional classification system applied to Santa Cruz County roads, San Andreas Road is classified as a major collector[2]. Spring Valley Road is classified as a local road according to the Circulation Element and the FHWA classification system. San Andreas Road is considered a Class II Bike Lane.

Per SqCWD staff, an easement along San Andreas Road would not be required for the proposed water main installation (WHA, 2022). The project would require excavation near the shoulder of the Santa Cruz County public right-of-way on the north side of San Andreas Road for the water main trenching. The proposed project applicant would be responsible for obtaining an encroachment permit from the County prior to the start of construction. The encroachment permit would require a traffic control plan.

It is anticipated that construction would generate approximately 10 trips per day over the course of approximately 40 days. Traffic control would occur along San Andreas Road and Sand Dollar Drive. The proposed project would require little to no vehicle trips during operation.

IMPACT DISCUSSION:

a. The proposed project would require very few vehicle trips once operational. The project would result in a temporary increase in traffic during construction. Construction-related vehicle trips would include workers traveling to and from the project construction sites and staging area(s) and other trucks associated with equipment and material deliveries. It is anticipated that construction would generate approximately 10 trips per day. Truck trips for materials and hauling for the proposed project would vary depending on delivery of materials and construction vehicles. Compared to the existing level of traffic traveling on San Andreas Road, the temporary construction-related traffic would be minimal. Work within San Andreas Road and Sand Dollar

[2] County of Santa Cruz. https://gis.santacruzcounty.us/gisweb/help/Transportation.pdf

Drive would require one way traffic controls with flaggers to construct the water main. In the event of any type of closure, clear signage (e.g., closure and detour signs) must be provided to ensure vehicles, pedestrians and bicyclists are able to adequately reach their intended destinations safely. The construction contractor would prepare a construction Traffic Control Plan as part of the encroachment permit from the County of Santa Cruz. This plan should address the construction schedule, street closures and/or detours, construction staging areas and parking, and planned truck routes. Construction is a short-term, temporary activity and construction trips would account for a relatively small portion of existing traffic on area roadways. Construction-related traffic impacts would be reduced through implementation of the required Traffic Control Plan. San Andreas Road is considered a Class II Bike Lane. Therefore, traffic flow impacts during construction would be ***less than significant***.

b. An assessment of vehicle miles traveled (VMT) requires estimating the vehicle trips for work trips, deliveries, shopping, etc. Vehicle trips can cross between jurisdictions as well as between cities and counties locally. For this reason, regional models, and household travel surveys are the preferred tool to estimate VMT under State law. The State's Technical Guidance published by the Office of Planning and Research (OPR) states:

Many agencies use "screening thresholds" to quickly identify when a project should be expected to cause a less than significant impact without conducting a detailed study. As explained below, this technical advisory suggests that lead agencies may screen out VMT impacts using project size, maps, transit availability, and provisions of affordable housing.

The Technical Advisory lists screening thresholds for various types of land use development project, including some that are presumed to have a less than significant impact of VMT and therefore, a less than significant adverse impact on transportation. OPR advises that small projects that generate or attract fewer than 110 trips per day can generally be assumed to cause a less than significant transportation impact. Operational maintenance trips to the proposed project would be minimal and infrequent. As stated above, it is estimated that the project would generate 10 trips per day during the construction period. This trips-estimate falls below the threshold of 110 trips per day, therefore the project has a ***less than significant impact*** related to an increase in VMT.

c. The project would not substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses. The project would generate little to no vehicle trips once operational. The project does not include the construction of hazardous design features and would not result in incompatible uses with the surrounding developed area. Implementation of a Traffic Control Plan would minimize potential traffic hazards during construction. This constitutes a ***less than significant impact***.

d. The proposed Traffic Control Plan would include traffic control measures in the event of a lane closure and would give priority access to emergency vehicles. The proposed project consists of new pipelines and would not impact emergency access. Therefore, ***no impact*** would result.

18. TRIBAL CULTURAL RESOURCES

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

SETTING:

To recognize California Native American tribal sovereignty and the unique relationship of California local governments and public agencies with California Native American tribal governments, and to respect the interests and roles of project proponents, the State Legislature enacted Assembly Bill (AB) 52 (Gatto. 2014) Native Americans: California Environmental Quality Act. California AB 52, in effect since July 2015, provides CEQA protections for tribal cultural resources. All lead agencies approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the potential impact of a project on tribal cultural resources before releasing an environmental document. Prior to the enactment of AB 52, the State of California found that current laws provided limited protection for sites, features, places, objects, and landscapes with cultural value to California Native American Tribes. Under California Public Resources Code §21074, tribal cultural resources include site features, places, cultural landscapes, sacred places, or objects that are of cultural value to a tribe and that are eligible for or listed on the California Register of Historical Resources (CRHR) or a local historic register, or that the lead agency has determined to be of significant tribal cultural value.

The NAHC maintains a Native American stakeholder contact list for groups or individuals who may have knowledge of important cultural resources affiliated with the geographic area. On behalf of Renaissance High School/PVUSD, Albion sent letters to the NAHC-identified stakeholders on April 28, 2023, followed by phone calls and emails in an effort to contact all NAHC-identified tribes and individuals. On May 5,

2023, Albion spoke with Mr. Patrick Orozco, the Chairman for the Costanoan Ohlone Rumsen-Mutsen Tribe and it is Albion's understanding that the resource listed in the Sacred Lands file is not within the proposed project area; however, Mr. Orozco is familiar with the proposed project area and shared concerns about the cultural resource sensitivity of the School campus. To date, no additional comments have been received.

IMPACT DISCUSSION:

a.i, ii Tribal cultural resources consider the value of a resource to tribal cultural tradition, heritage, and identity, in order to establish potential mitigation and to recognize that California Native American tribes have expertise concerning their tribal history and practices. No tribal cultural resources have been listed or determined eligible for listing in the California Register or a local register of historical resources.

AB 52 requires lead agencies to conduct formal consultations with California Native American tribes during the CEQA process to identify tribal cultural resources that may be subject to significant impacts by a project. Where a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document must discuss the impact and whether feasible alternatives or mitigation measures could avoid or substantially lessen the impact. This consultation requirement applies only if the tribes have sent written requests for notification of projects to the lead agency.

On behalf of Renaissance High School/PVUSD, Albion sent AB 52 Notification Letters to NAHC-identified stakeholders via USPS certified mail on April 28, 2023, notifying them of the proposed project and giving an opportunity for the tribes to request consultation under AB 52. On May 5, 2023, Albion spoke with the Chairman for the Costanoan Ohlone Rumsen-Mutsen Tribe who shared concerns about the cultural resource sensitivity of the campus and stated that a resource listed in the Sacred Lands file is not within the proposed project area. No responses were received from the five other Tribes that were contacted.

Based on the findings of the records search, Native American outreach, and pedestrian survey, it is Albion's judgment that the proposed project area does not contain cultural deposits and no further studies (e.g., resource identification or evaluation) are recommended. Should archaeological resources be unexpectedly discovered during construction, work shall be halted until it can be evaluated by a qualified professional archaeologist in collaboration with a Native American representative. If determined to be significant, appropriate mitigation measures will be formulated and implemented, as identified in Mitigation Measures CR-1 and CR-2. The project would have a ***less than significant impact with mitigation incorporated*** on tribal cultural resources.

Please see **Section 5. Cultural Resources** of this IS/MND for additional discussion.

Mitigation Measure(s) incorporated into the project:

CR-1 The full text of this mitigation is included in **Section 5. Cultural Resources**.

CR-2 The full text of this mitigation is included in **Section 5. Cultural Resources**.

19. UTILITIES AND SERVICE SYSTEMS

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

SETTING:

SqCWD is a nonprofit, local government agency that provides potable water service and groundwater resource management to approximately 50,000 customers with approximately 16,000 service connections within Aptos, La Selva Beach, Opal Cliffs, Rio Del Mar, Seascape, Soquel, and portions of the City of Capitola. SqCWD operates and maintains 167 miles of pipelines, 16 active production groundwater wells and produced 3,348 acre-feet of water in 2020 (SqCWD, 2023). In 2022, SqCWD customers received water from 15 wells pumping from the Santa Cruz Mid-County groundwater basin—specifically the Purisima Formation and the Aromas Red Sands primary aquifers. The Purisima Formation is naturally high in iron and manganese, and the water supplied from these aquifers is treated using oxidation and filtration to reduce these elements. Delivered water from both the Purisima Formation and the Aromas Reds Sands aquifers meets all current drinking water health standards.

The School currently has its own water system (No. CA4400758), which is designated as a Non-Transient Non-Community (NTNC) public water system. The existing Renaissance High School system currently utilizes a well to pump groundwater as the primary source of water. The School's water system has had a

known issue with elevated hexavalent chromium concentrations since at least January 2015. The pressure tanks, distribution system piping, and other appurtenances near the well head appear older than 2013 and may be near the end of their useful life span. School staff has indicated that these components are at least 20-years old; the precise age of these components is unknown. Based on the appearance of the pressure tanks, it can be assumed that they are near or beyond their usable life span.

The project would consolidate the Renaissance High School water system with the SqCWD system, and construct improvements to the existing system to deliver a reliable and potable water supply to the School. The School currently has one water meter, which measures the combined usage of domestic and irrigation water. The proposed project would include water meters on the domestic and irrigation water distribution lines. The water from the proposed project would be used by the School.

Weber Hayes Associates (WHA) prepared an Engineering Report (**Appendix A. Draft Engineering Report for Renaissance High School**) during project development, which explored several alternative methods of supplying potable water to the area. In addition, the Engineering Report found that average daily demand (ADD) is 4,947 gallons per day (gpd) and the maximum daily demand (MDD) is 8,212 gpd.

Pacific Gas and Electric Company (PG&E) has historically been the primary electricity and natural gas provider for the County of Santa Cruz. As stated above in **Section 6. Energy**, 3CE is a locally controlled public agency providing carbon-free electricity to residents and businesses. 3CE partners with PG&E, which continues to provide billing, power transmission and distribution, customer service, grid maintenance services and natural gas services to Monterey County. 3CE's standard electricity offering is carbon free and is classified as 31 percent renewable (3CE, 2024).

The Sanitation Division of Santa Cruz County Public Works is responsible for the collection of wastewater within unincorporated areas of the county, three sanitation districts and five county service areas.

Santa Cruz County Recycling & Trash Services is responsible for the operation and administration of solid waste diversion and disposal in the unincorporated area of the County. The County operates two solid waste facilities: the Buena Vista Landfill at 1231 Buena Vista Drive in Watsonville, and the Ben Lomond Transfer Station at 9835 Newell Creek Road in Ben Lomond. The Buena Vista Landfill is nearing capacity; new waste transfer stations would replace the landfill before it is anticipated to reach capacity in 2030. In order to continue to meet the County's waste disposal needs in the future, the Buena Vista Landfill Project would consolidate waste into transfer trucks and transport to the Monterey Peninsula Landfill in Marina. The County of Santa Cruz has an agreement with GreenWaste Recovery of Santa Cruz County for the collection of refuse, recycling and yard waste.

IMPACT DISCUSSION:

a. The project proposes to properly destroy the existing active well and inactive well at Renaissance High School and connect to the SqCWD water system. The project would not generate any additional wastewater or exceed or impact wastewater treatment requirements of the applicable Regional Water Quality Control Board. The project would require additional electrical power, natural gas, or telecommunication facilities. The project would not require additional construction or relocation of utility facilities which would cause significant environmental effects. The potential adverse environmental effects associated with the water expansion project are fully evaluated in this IS/MND. With implementation of recommended mitigation measures, construction of new water service facilities would result in a ***less than significant impact.***

b. The project proposes to properly destroy the existing active well and inactive well and to connect the Renaissance High School to the SqCWD water system. The project includes a water main, distribution lines, and a booster pump station. The SqCWD water system receives its water from local groundwater from the Santa Cruz Mid-County groundwater basin produced by the SqCWD's wells. As stated above and in **Section 10. Hydrology and Water Quality**, MGA and SqCWD are implementing the Groundwater Sustainability Plan, Community Water Plan, and Urban Water Management Plan to meet the goal of groundwater sustainability by 2040. The DWR considers the basin managed by MGA's GSP. Additionally, the PWS project will produce up to 1,500 acre-feet per year of purified water to help reduce overdraft and address water resource issues in the basin starting in 2024. Therefore, this is a ***less than significant impact***.

c. The primary objective of the project is to provide a reliable high-quality water source, which would provide long-term water supply reliability for the School. The project does not include any new wastewater generation compared to existing conditions and would not require wastewater service or expansion. There would be ***no impact*** in connection with the project.

d. Operation of the proposed project would not generate additional solid waste compared to existing conditions. Solid waste is transported from unincorporated Santa Cruz County and disposed of at the Santa Cruz County Landfill in Watsonville. The anticipated Buena Vista Landfill Project would present a local disposal site for recyclables, organics and waste materials. Therefore, there would be a ***less than significant impact*** in connection with the project.

e. Waste disposal to landfills would be minimized, and all waste would be properly disposed of in a safe, appropriate, and lawful manner in compliance with all applicable regulations of local, state (California Integrated Waste Management Act of 1989 & California Green Building Standards), and federal regulations related to solid waste. Since the project would require compliance with all county, state, and federal regulations and conditions, there would be no violation of the regulations concerning solid waste disposal as conditions for approval. This constitutes a ***less than significant impact***.

20. WILDFIRE

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	■	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	■

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	■
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	■

SETTING:

The State Fire Marshal is mandated to classify lands within State Responsibility Areas (SRA) into Fire Hazard Severity Zones (FHSZ). Fire Hazard Severity Zones are defined by the California Department of Forestry and Fire Protection (CALFIRE) based on the presence of fire-prone vegetation, climate, topography, assets at risk (e.g., high population centers), and a fire protection agency's ability to provide service to the area (CALFIRE, 2023a). FHSZs are designated as "Very High," "High," or "Moderate." The project site is not located within a designated Very High, High, or Moderate FHSZ (CALFIRE, 2023b). The project site consists of disturbed or developed areas.

IMPACT DISCUSSION:

a. The proposed project does not include any characteristics or features that would interfere with an adopted emergency response plan or emergency evacuation plan. The project would not result in the closure of any roads. For these reasons, this is considered a ***less than significant impact***.

b. The project site is located within an existing road right-of-way, railroad easement, and on the Renaissance High School campus. The site is relatively flat and lacks physical and biological features that would be conducive to wildland fire. The project site is primarily surrounded by irrigated agricultural land and rural residences. The project site is not located within or adjacent to a designated FHSZ, and the CALFIRE Hazard Severity Zone map designates the project site is located within a Local Responsibility Area (LRA). Therefore, the project would not exacerbate wildfire risks or result in exposure to pollutant concentrations from a wildfire or the uncontrolled spread of wildfires and ***no impact*** would result.

c. The project is a water system improvement project located within an existing road right-of-way and within a school campus. The project would include the installation three fire hydrants along San Andreas Road, thereby allowing for more efficient firefighting in the unlikely event of a wildfire. The project does not include infrastructure facilities that would exacerbate fire risk; therefore, ***no impact*** would result.

d. The project site is relatively flat and is not located in the vicinity of slopes that would be susceptible to landslides. As mentioned in the previous discussions above, the project is not located within a State Responsibility Area (SRA) Fire Hazard Zone and is not at risk of downslope or downstream flooding or landslides, therefore ***no impact*** would result.

21. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. 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?	☐	■	☐	☐
2. 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.)	☐	☐	■	☐
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	■	☐

IMPACT DISCUSSION:

1. The proposed water main, distribution line, and appurtenances are primarily within the school campus and the public right-of-way that contains suitable habitat wildlife species. Mitigation measures are identified to address potential direct and indirect impacts to species that may be present on the project site as well as potential impacts to habitat areas adjacent to the project site. Based on this analysis, the project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

   The proposed project would be constructed within the school campus and existing San Andreas Road right-of-way and the water line would be installed below the railroad grade to avoid impacts to a historical resource. Additionally, mitigation measures are identified to protect cultural resources requiring work to stop and any finds evaluated should unanticipated archaeological

resources be discovered during construction. Therefore, the project would not eliminate important examples of the major periods of California history or prehistory with implementation of mitigation measures identified in this document. This is a ***less than significant impact with mitigation incorporated.***

2. Section 15355 of the CEQA Guidelines defines “cumulative impacts” as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental effects. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts could occur due to indirect growth-inducing impacts, which include consideration of whether the project would remove an obstacle to additional growth and development. The project area and school to be served by this project is already developed and pumps groundwater from a well onsite. The project would not include housing or development that could induce growth and would not remove any barriers that could result in population growth.

   The project impacts are temporary and localized along the pipelines and appurtenances during the construction period. Upon operation, the project would not have significant adverse environmental impacts or induce new development in the area that could combine with other projects’ effects to create cumulatively significant impacts. Project operational activities would not significantly alter the existing environment, particularly since the project components would primarily be underground. There are no known projects in the immediate project vicinity of a similar nature proposed or reasonably foreseeable for development. When considered cumulatively along with past, current, and probable future projects that may occur in the area, the project’s contribution is considered negligible and would not be cumulatively considerable. This is a ***less than significant impact.***

3. The project would not result in environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. The project involves construction of the proposed components within already developed areas within an established community. Construction of the proposed project would result in impacts to biological resources, cultural/tribal resources, and noise. These impacts would be minimized by implementation of identified mitigation measures. This is a ***less than significant impact.***

This Page Intentionally Left Blank

10. Summary of Potentially Significant Impacts

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

This Page Intentionally Left Blank

11. Determination

On the basis of the Initial Study, the lead agency:

_____ Finds that the proposed project is a Class ___ **CATEGORICAL EXEMPTION** and no further environmental review is required.

_____ Finds that the proposed project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

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

_____ Finds that the proposed project **MAY** have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

_____ Finds 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 acceptable standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on the attached sheets. An **ENVIRONMENTAL IMPACT REPORT (EIR)/SUBSEQUENT EIR/SUPPLEMENTAL EIR/ADDENDUM** is required, but it must analyze only the effects that remain to be addressed.

_____ Finds that although the proposed project could have a significant effect on the environment, because all significant effects (a) have been analyzed adequately in an earlier **EIR** or **NEGATIVE DECLARATION** pursuant to acceptable standards, and (b) have been avoided or mitigated pursuant to that earlier **EIR** or **NEGATIVE DECLARATION**, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Herlindo Fernandez

Director of Facilities, Maintenance and Operations

7/12/24

Date

This Page Intentionally Left Blank

12. References

Albion. 2023. *Phase 1 Cultural Resource Inventory for the Renaissance High School Water Systems Project, La Selva Beach, Santa Cruz County, California*. June 2023.

California Air Resources Control Board (CARB). 2005. *Air Quality and Land Use Handbook: A Community Perspective*. Available at: https://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf.

California Department of Conservation. 2023. *California Geological Survey, Fault Activity Map of California*. Available at: https://maps.conservation.ca.gov/cgs/fam/.

California Department of Conservation. 2023. *Earthquake Zones of Required Investigation*. Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/.

California Department of Conservation. 2023. *California Important Farmland Finder*. Available at: https://maps.conservation.ca.gov/DLRP/CIFF/.

California Department of Toxic Substance Control (DTSC). 2023. *EnviroStor Database*. Available at: https://www.envirostor.dtsc.ca.gov/public/map/.

California Department of Water Resources (DWR). *2023 Sustainability Groundwater Management Act (SGMA)*. Available at: https://water.ca.gov/programs/groundwater-management/sgma-groundwater-management.

California Department of Water Resources (DWR). 2023. *Groundwater Basin Boundary Assessment Tool*. Available at: https://gis.water.ca.gov/app/bbat/.

California Department of Forestry & Fire Protection (CALFIRE). 2023a. *Santa Cruz County Fire Hazard Severity Zones*. Available at: https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones/fire-hazard-severity-zones-maps.

California Department of Forestry & Fire Protection (CALFIRE). 2023b. *Fire Hazard Severity Zone Viewer*. Available at: https://egis.fire.ca.gov/FHSZ/.

California Department of Transportation (Caltrans). 2023. *California State Scenic Highway System Map*. Available at: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa.

Central Coast Community Energy (3CE). 2023. *About 3CE*. Available at: https://3cenergy.org/about-us/.

City of Watsonville. 2023. *Watsonville Municipal Airport Master Plan*. Available at: https://www.cityofwatsonville.org/1820/Airport-Master-Plan-Update.

County of Santa Cruz. 1994. *County of Santa Cruz 1994 General Plan and Local Coastal Program*. Available at: https://sccoplanning.com/PlanningHome/SustainabilityPlanning/GeneralPlanTownPlans.aspx

County of Santa Cruz. 2011. *Construction Site Stormwater Pollution Control BMP Manual.* Available at: https://www.sccoplanning.com/Portals/2/County/Planning/env/ConstructionStormwaterBMPManual-Oct%20312011version.pdf

County of Santa Cruz. 2021. *Local Hazard Mitigation Plan 2021-2026.* Available at: https://www.sccoplanning.com/Portals/2/County/Planning/policy/LHMP/County%20of%20Santa%20Cruz%20LHMP%202021-2026%20%282023%20update%29.pdf

County of Santa Cruz. 2023a. *Santa Cruz County GIS*. Available at: https://gis.santacruzcounty.us/

County of Santa Cruz. 2023b. *Santa Cruz County Code*. Available at: https://www.codepublishing.com/CA/SantaCruzCounty/

County of Santa Cruz. 2023c. *When is a Grading Permit Required?* Available at: https://www.sccoplanning.com/PlanningHome/Environmental/Grading/GradingPermits/WhenisaGradingPermitRequired.aspx

County of Santa Cruz, Public Works. 2023. *Buena Vista Landfill Project*. Available at: https://dpw.co.santa-cruz.ca.us/Home/RecyclingTrash/BuenaVistaProject.aspx

County of Santa Cruz, Public Works. 2024. *Recycling & Trash*. Available at: https://dpw.co.santa-cruz.ca.us/Home/RecyclingTrash.aspx.

County of Santa Cruz, Environmental Health. 2024. *Santa Cruz County Watersheds*. Available at: https://scceh.com/NewHome/Programs/WaterResources/FisheriesWatershedManagement/SantaCruzCountyWatersheds.aspx

Denise Duffy and Associates, Inc (DD&A). 2023. *Renaissance High School Project Biological Resource Report*. July 2023.

Federal Emergency Management Agency (FEMA). 2023. *FEMA Flood Map Service Center*. Available at: https://msc.fema.gov/portal/home

Monterey Bay Air Resources District (MBARD). 2016. *Guidelines for Implementing the California Environmental Quality Act.* Available at: https://www.mbard.org/files/b4d8179d3/CEQA+Implementation.pdf.

Monterey Bay Air Resources District (MBARD). 2017. *2012-2015 Air Quality Management Plan.* Available at: https://www.mbard.org/files/6632732f5/2012-2015-AQMP_FINAL.pdf.

Pajaro River Watershed Flood Prevention Authority (PRWFPA). 2019. *Pajaro River Watershed Integrated Regional Water Management Plan).* Available at: https://www.pajaroriverwatershed.org/projects/irwmp

Pajaro Valley Water Management Agency (PV Water). 2022. *Pajaro Valley Subbasin Water Year 2021 Annual Report.* Available at: https://www.pvwater.org/images/about-pvwma/assets/annual_reports_assets/SGMA-WY/PVWater_AR_SGMA3-002.01WY2021.pdf

Santa Cruz Mid-County Groundwater Agency (MGA). 2023. *Santa Cruz Mid-County Basin Water Year 2022 Annual Report*. Available at: https://www.midcountygroundwater.org/sustainability-plan. March 2023.

Santa Cruz Mid-County Groundwater Agency (MGA). 2024. *Groundwater Plan Process*. Available at: https://www.midcountygroundwater.org/groundwater-plan.

Soquel Creek Water District (SqCWD). 2010. *Soquel Creek Water District Well Master Plan Draft Environmental Impact Report State Clearinghouse No. 2006072018*. Available at: https://www.soquelcreekwater.org/DocumentCenter/View/1714/Well-Master-Plan-PDF. September 2010.

SqCWD. 2022. *2022 Consumer Confidence/Water Quality Report*. Available at: https://www.soquelcreekwater.org/210/Water-Quality-Report

SqCWD. 2022. *Fall 2022 Community Water Report*. Available at: https://www.soquelcreekwater.org/ArchiveCenter/ViewFile/Item/118

SqCWD. 2023. *Facts, Figures & Maps*. Available at: https://www.soquelcreekwater.org/242/Facts-Figures-Maps.

SqCWD. 2024a. *Groundwater.* Available at https://www.soquelcreekwater.org/185/Groundwater

SqCWD. 2024b. *Pure Water Soquel – Water Transformed*. Available at: https://www.soquelcreekwater.org/184/Pure-Water-Soquel

State Water Resources Control Board (SWRCB). 2023. *GeoTracker Database*. Available at: https://geotracker.waterboards.ca.gov/.

U.S. Department of Agriculture. 2023. Web Soil Survey, Area of Interest Interactive Map. Available at: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.

U.S. Department of the Interior. 1997. *Geologic Map of Santa Cruz County, California*. Available at: https://pubs.usgs.gov/of/1997/of97-489/scruzmap.pdf.

U.S. Fish & Wildlife Service. 2010. *Ellicott Slough National Wildlife Refuge: Final Comprehensive Conservation Plan and Environmental Assessment.* Available at: https://ecos.fws.gov/ServCat/DownloadFile/216474.

Weber, Hayes & Associates (WHA). 2022. *Draft Engineering Report for Renaissance High School.* October 2022.

This Page Intentionally Left Blank

Appendix A

Final Engineering
Report
Renaissance High School

This Page was Intentionally Left Blank

WEBER, HAYES & ASSOCIATES
Hydrogeology and Environmental Engineering
(831) 722-3580 www.weber-hayes.com

Engineering Report

Renaissance High School Water System

La Selva Beach, Santa Cruz County, California

March 10, 2023

Prepared for:

Pajaro Valley Joint Unified School District

via Technical Assistance from

California State Water Resources Control Board; administered by

Rural Community Assistance Corporation (RCAC)

WHA Project 2T162

Contents

Figures

Tables

Appendices

Executive Summary

This is the *Engineering Report* (ER) for water system improvements at Renaissance High School (the School), located at 11 Spring Valley Road, La Selva Beach, Santa Cruz County, California. See Figure 1 for the project location. The ER evaluates various alternatives to resolve elevated hexavalent chromium (hex-chromium) concentrations in the School's water supply.

Weber, Hayes & Associates prepared the ER on behalf of the School under a Technical Assistance (TA) Grant from the California State Water Resources Control Board (State Water Board) assigned to and administered by the Rural Community Assistance Corporation (RCAC).

The intent of this *Engineering Report* (ER) is to:

- Define the problems the School's water system is facing
- Identify and evaluate alternatives to provide the School's students and staff with safe and reliable drinking water (i.e., resolve the elevated hex-chromium concentration issue)
- Choose the best alternative to provide the School's students and staff with safe and reliable drinking water.

The best alternative was chosen based on the ability to:

- Supply safe and reliable drinking water and to comply with regulatory requirements
- Meet the water system's Operation and Maintenance (O&M) needs
- Be financially viable, sustainable, and cost effective
- Satisfy public concerns
- Satisfy Regulatory concerns
- Meet environmental requirements

> The most sustainable long-term solution is consolidation with the Soquel Creek Water District's water system.

Background Project Information

Renaissance High School (the School) is located in La Selva Beach, Santa Cruz County; which is in the Coast Ranges Geomorphic Province of California (see Figure 1). The School's single existing water supply well, designated Well-2, draws water from the Pajaro Valley Groundwater Basin. The Department of Water Resources (DWR) classified the Basin as a high-priority groundwater basin in critical overdraft due to excessive pumping and the ongoing threat of further seawater intrusion into Basin groundwater supplies.

The School operates its own Water System (No. CA4400758). The School's water system has had a known issue with elevated hexavalent chromium concentrations since at least January 2015.

In 2014, the State Water Board established a hexavalent chromium (hex-chromium) Maximum Contaminant Level (MCL) of 10 micro-grams per Liter (µg/L). The concentration of hex-chromium in the School's water has ranged from 20 to 23 µg/L. This MCL was later disputed at the State level and is not currently enforced. However, in March 2022 the State Water Board issued a hex-chromium MCL Administrative "Draft" containing a proposed MCL of 10 µg/L (once again) and more supporting documentation for the feasibility of implementing this regulation. We anticipate that this proposed "draft" MCL will pass into law and be enforced. Due to the "draft-status" of the MCL, there is not a legally enforceable regulatory document / directive in place requiring the School to resolve the elevated hex-chromium concentration issue. However, it is prudent to resolve the issue now while funding is available and before the "draft" MCL becomes an enforceable regulation.

Potential solutions include the following: (1) a centralized hex-chromium treatment system at the wellhead (i.e., treating all domestic water coming from the existing water supply well); (2) a water source free of elevated hex-chromium concentrations (i.e., a new water supply well); or (3) consolidation with a nearby public water system, that provides "acceptable" water quality. By

"acceptable", we mean water quality that meets the regulatory requirements. See Figure 2 for a Vicinity Map showing the nearby water company service area boundaries.

Seawater intrusion is a major issue in the Pajaro Valley Groundwater Basin. Soquel Creek Water District staff consider the new well and the treatment system options unfeasible because these options leave the existing well in place - which is subject to (and contributes to) sea-water intrusion (i.e., high chloride / salinity levels in groundwater).

Based on financial challenges, the School received Technical Assistance grant funding to evaluate various alternatives to bring their water system into regulatory compliance.

The Local Primacy Agency with jurisdiction over the School's water system is the Santa Cruz County Health Services Agency, Environmental Health Division (Santa Cruz County).

This *Engineering Report* (ER) further identifies the School's water system problems, then evaluates various alternative solutions to bring the School into regulatory compliance.

1. Water System Existing Facilities

The School utilizes groundwater as its potable water source. The capacity of their single source well, designated Well-2, was noted at approximately 150+ gallons per minute (gpm) in a Santa Cruz County field inspection dated January 11, 2015.

Groundwater well specifications (Well-2: installed in July 2013):

- Sanitary seal extends from the ground surface to 340-feet below ground surface (bgs)
- Filter pack (8x16 sand) extends from 340 to 425-feet bgs
- 7.4-inch inner diameter SDR-17 polyvinyl chloride (PVC) casing to a depth of 420-feet bgs
- Well screen interval(s) are not noted on the Well Completion Report (WCR). We assume that well screen interval(s) are present from approximately 350 to 420-feet (i.e., within the filter pack interval). The Well-2 WCR is presented in Appendix A
- Electric Submersible Well Pump with capacity of 150+ gallons per minute (gpm).

The groundwater is not treated.

The groundwater is pumped from the well via a submersible pump to seven pressure tanks. See Figure 3 (existing) and Figures 4a & 4b (proposed) for a Schematic and Map of the Water System. The submersible pump and the pressure tanks pressurize the School's water distribution system (for domestic and irrigation purposes). On September 8, 2022, we observed that two of the pressure tanks were water-logged and therefore not functioning properly. This was communicated to School staff, who indicated that they would have these two pressure tanks serviced. Near Well-2, there is a backflow prevention assembly for irrigation water (there is another backflow prevention assembly in this area that is not used / shut off). The existing domestic water line does not contain a backflow prevention assembly.

The irrigation water line (1-inch galvanized steel) runs from the backflow preventer to the nearby irrigation system sprinklers. See Figure 3.

The domestic water line (2-inch galvanized steel) runs from the pressure tanks toward the northwest side of Building E, where it eventually connects to the School buildings. On February 18, 2023, a private utility locator was not able to locate exactly where this 2-inch galvanized water line runs or connects to the various school buildings. We conclude that this galvanized line may contain non-conductive PVC repair couplers (or perhaps portions of the galvanized line have been replaced with PVC) which do not allow the locator's signal to travel through the entire water line.

The School does not have a potable water storage tank or a backup power supply in use. This is not an ideal setup, because if the well's submersible pump ever loses power – then the School quickly runs out of water. In the event of failure, submersible pumps can take a significant amount of time to procure and install, leaving the School without water. The School has an unused backup generator near Well-2. However, this generator is not electrically compatible with the Well-2 submersible pump.

2. Analysis of Water System's Current Water Demand

To determine the School's current water demand, we evaluated water-meter-recorded monthly water usage from 2016 through 2021. The corresponding Average Daily Demand (ADD) is 4,947 gallons per day (gpd). The School only has one water meter, which measures the combined usage of domestic and irrigation water.

To determine Maximum Day Demand (MDD), we multiply the Average Daily Demand by 1.66.

4,947-gpd x 1.66 = 8,212-gpd (MDD)

From 2016 to 2021, we also note that a maximum daily average of 14,792-gpd occurred in September 2020 (considered the "peak" maximum daily average, based on monthly water meter data). This peak was likely associated with irrigation usage during September, typically one of the warmest / driest months of the year.

The various water demand usages presented above include all water from the active Well-2 (i.e., domestic + irrigation).

3. Existing Water System Operations and Maintenance (O&M)

The School is classified as a Non-Transient Non-Community (NTNC) public water system. The existing water system operations and maintenance (O&M) is performed by Jeremy Montes, a state-certified water system operator. O&M tasks generally include: (1) collecting water samples for analytical testing; (2) completing various regulatory compliance tasks; (3) maintaining the water well, pressure tanks, water lines, and associated appurtenances.

Problem Description

The School's current water source is a groundwater well (Well-2), which has elevated hexavalent chromium concentrations. This is the primary problem with the School's water system. Hexavalent chromium (hex-chromium) concentrations have exceeded the March 2022 "draft" Maximum Contaminant Level (MCL) proposed by the State Water Board, and therefore pose a health risk.

Per the State database (Drinking Water Watch - website) and laboratory reports provided by Santa Cruz County, hex-chromium concentrations to date are presented in the table below (a more complete list of various analytes is presented in Table 1) :

Analyte	Date	Concentration (µg/L)	MCL (µg/L)*
Hex-chromium	1/26/15	21	10
	7/8/15	20	
	10/5/15	21	
	1/11/16	23	
	4/5/16	21	

* µg/L = milligrams per liter (this MCL is currently in draft status)

The School's water supply well (Well-2) was installed in July 2013 (9-years-old). The pressure tanks, backflow prevention assembly, distribution system piping, and other appurtenances near the well head appear older than 2013 and may be near their useful life span. School staff indicated that these components were at least 20-years old (i.e., how long the maintenance director has been working there), but did not know the date they were installed. Based on the appearance of the pressure tanks, we assume that they are near or beyond their usable lifetime.

If the School were to move forward with "Alternative #2 – Treatment System" or "Alternative #3 – New Well", then we recommend that the pressure tanks, backflow prevention assembly, distribution system piping, and other appurtenances be replaced.

If the School were to move forward with "Alternative #4 – Consolidation", the existing 2-inch domestic galvanized domestic line running from the well head toward Building E is currently planned to be left in place. Division of Financial Assurance (DFA) staff indicated that this domestic line and the entire distribution system may need to be thoroughly located / mapped. Currently, there are no as-built drawings of the School's distribution system and our utility locator was not able to conclusively locate the School's water lines. If DFA staff require the distribution system to be mapped and approve funding for it as part of this project, then we offer the following considerations:

- Mapping the distribution system will take a significant amount of hand dug "pot-holing" to definitively locate the various water lines. This is a slow and expensive process.
- Mapping the existing Distribution System (DS) portion from the well head toward the northwest side of Building E, where there is a network of five water valves (DS: Part 1, see Figure 3), would take an order of magnitude less effort than mapping the distribution system from this network of water valves to the various school buildings (DS: Part 2), as "DS: Part 1" is primarily in unpaved areas (i.e., grass field), and "DS: Part 2" is primarily in paved areas. Some of the water lines likely extend underneath buildings and rise through the buildings' foundation and into the buildings' interior plumbing - several of the School buildings do not have a visible water line entering the outside of the building, above ground (i.e., so, the water line is likely entering the building from underground).
- A water distribution system typically ends when it enters a building and becomes "interior plumbing". Because Renaissance High School consists of approximately fifteen buildings connected by an unknown network of exterior distribution lines (i.e., located outside of building footprints) and interior plumbing connections (i.e., potentially running

underground and up through the building foundations), we think that "DS: Part 2" could be considered "interior plumbing" for all practical purposes. Again, "interior plumbing" typically denotes the end of a water distribution system. As such, we recommend that if DFA approves funding to map out the distribution system – that only "DS: Part 1" is mapped out.

- If DFA approves funding to map out "DS: Part 1", then we could potentially design a new "DS: Part 1" distribution system. This portion of the distribution system may be near the end of its useful lifespan, so it would likely be prudent to replace it - if possible.

For Alternative #4 - Consolidation, the water supplied by the Soquel Creek Water District water main is anticipated to be at a relatively lower pressure [approximately 50 pounds per square inch (psi), per SqCWD staff]. Once this water passes through the respective domestic and irrigation: (1) water meters, (2) backflow prevention assemblies, and (3) the two-inch water distribution lines, we anticipate that the water pressure will be approximately 35 to 40-psi. Due to this relatively low pressure, it appears that both the irrigation line and the domestic line will require a booster pump to raise the respective water pressures to approximately 80 to 100-psi (i.e., the water pressure range that the current domestic and irrigation lines operate at).

To confirm the need for booster pumps, we performed the following evaluation on February 17, 2023: we lowered the water pressure at the wellhead from 80 to 100-psi (i.e., its current operating pressure range) to a range of 35 to 50-psi. We did this to observe how the domestic and irrigation systems would perform at this lower pressure (i.e., the anticipated water pressure from SqCWD alone, without on-site booster pumps). The irrigation system was not effective at this lower pressure. The toilets in the School did flush, but with significantly less force. The School's maintenance staff concluded that the toilets would not operate effectively at this lower pressure. Based on this evaluation, we conclude that booster pumps are required for both the irrigation and domestic lines - if the Consolidation Alternative is selected.

On February 17, 2023, we turned the irrigation system water off via a valve on the associated backflow prevention assembly. This turned off all water to the irrigation system only; the domestic water line still actively supplied the School. Then we turned the domestic water line off via a gate valve near the Well-1 wellhead (the active Well-2 water line extends into the decommissioned Well-1 well shed). This shut off water to the School only; the irrigation water line still actively supplied the irrigation system. These observations indicate that a cross connection does not exist between the domestic and the irrigation systems.

The various alternatives mentioned above are discussed in greater detail in the sections below.

1 – Alternative Analysis – No Action

Project Alternative #1 involves taking no corrective actions. This alternative does not address the primary problem of hex-chromium concentrations above the March 2022 "draft" Maximum Contaminant Level (MCL). The ramification of not addressing this issue includes School students and staff potentially becoming ill. Project Alternative #1 also does not address the various secondary problems presented above in the Problem Description section.

> For these reasons, we do not recommend the No Action Alternative.

2 - Alternative Analysis – Hexavalent chromium Treatment System

1. Description

Project Alternative #2 involves installing an Ion Exchange (I-X) treatment system to remove hexavalent chromium (hex-chromium) from the groundwater. Alternative #2 addresses the primary problem of hex-chromium concentrations above the "draft" Maximum Contaminant Level (MCL). However, there are several significant disadvantages as presented in the sections below.

Soquel Creek Water District staff consider the treatment option unfeasible because it leaves the existing well in place, which is subject to (and contributes to) sea-water intrusion (i.e., high chloride / salinity levels in groundwater). Sea water intrusion is a major issue in the Pajaro Valley Groundwater Basin.

2. Design Criteria

The design criteria are generally based on the anticipated hex-chromium concentrations, the overall water quality, and the School's water usage / flow parameters (only domestic water would be treated, and not the irrigation water). The treatment system would generally include an Ion-Exchange (strong base anion exchange) lead-lag pair of 4-feet diameter treatment vessels and prefiltration assembly.

For this alternative, we assumed that the Ion Exchange system "I-X concentrate" (high concentration brine and hex-chromium wastewater produced by the system) would need to be hauled off-site for disposal. The "I-X concentrate" likely cannot be discharged to the ground

surface or put in a septic system for environmental reasons. An "I-X concentrate" storage tank would be used to store the concentrate prior to hauling for off-site disposal.

We also considered the treatment options "Reverse Osmosis" (RO) and "Reduction, Coagulation & Filtration" (RCF). The RCF process is not considered appropriate for very small water systems (i.e., those serving less than 500 people)[1]. This conclusion is based on the nature of the technology and the equipment used. In addition, RCF also can only achieve a hex-chromium concentration of approximately <5 µg/L, whereas I-X and RO can achieve <1 µg/L.

RO was generally not considered feasible due to the high loss of water in the RO process. The School is in a sea-level intrusion prone area that draws from an over-drafted aquifer. In addition, a substantial amount of "RO wastewater concentrate" would need to be managed – most likely off-hauled for disposal at a water treatment plant (which is expensive). For these reasons and the relatively high monthly operations and maintenance costs, RO is not considered a viable treatment technology at the School.

3. Environmental Impacts

Alternative #2 has generally minor to moderate environmental impacts, including land disturbance associated with replacing the distribution system, installing a new potable water storage tank and a fire prevention storage tank; and installing the treatment system infrastructure. Additional environmental impacts include: (1) vehicle emissions from periodically hauling away the "I-X concentrate"; (2) water treatment plant would need to treat or otherwise dispose of the "I-X concentrate"; and (3) the ion exchange process adds salt to the treated water, which via entering the septic system - could increase groundwater aquifer salinity concentrations.

[1] Blute et al. (2015) *Microfiltration in the RCF Process for Hexavalent Chromium Removal from Drinking Water*. Water Research Foundation: Web Report #4365.

4. Land Requirements

There are no property or lease purchases required for this alternative. The hex-chromium treatment system and water supply system would be located on School-owned property, so no easements are required either.

5. Construction and Site Considerations

There is currently room near the existing Well-2 to construct the hex-chromium treatment system. The treatment system would need to be housed on a new concrete pad in a cement block building. The pad and building would be subject to Division of the State Architect (DSA) review. The DSA is essentially the building department for Schools.

6. Cost Estimate

Table 2 summarizes costs for a new potable water storage and supply system. Table 3 summarizes costs for the entire Alternative #2 (this includes the costs from Table 2). The treatment system costs are based on our understanding of Ion Exchange systems and discussions with various water treatment system design engineers. Only the domestic water would need to be treated. Because the existing water meter combines both domestic and irrigation water usage, our treatment system water flow assumptions are likely biased high – which in turn could have biased our cost estimate high. To refine our cost estimate, we could install a dedicated water meter to the existing domestic water distribution line and track domestic water usage over several months. However, treatment does not appear to be a viable alternative, so we do not recommend installing a water meter.

7. Advantages / Disadvantages

The advantages of Alternative #2 include removing hex-chromium from the groundwater. The disadvantages include the following:

- Moderate cost to install Ion Exchange treatment system
- High monthly Operations and Maintenance (O&M) cost to maintain the treatment system, especially to off-haul the "I-X concentrate" (high concentration brine and hex-chromium wastewater produced by the system). The monthly O&M cost would be born by the School in perpetuity.
- Considerably more complicated / expensive Operations and Maintenance (O&M) tasks to maintain the treatment system (as compared to a water system without centralized hex-chromium treatment at the well head). High monthly O&M costs would be a financial burden for the School, which likely could not draw upon outside funding to pay for such costs.
- Ion Exchange process adds salt to the treated water, which could increase aquifer salinity concentrations.
- This alternative includes leaving the existing well in place, which is a potential conduit for elevated hex-chromium concentrations to migrate within aquifer zones.
- Soquel Creek Water District staff consider the treatment option unfeasible because it leaves the existing well in place - which is subject to (and contributes to) sea-water intrusion (i.e., high chloride levels / salinity in groundwater). Sea water intrusion is a major issue in the Pajaro Valley Groundwater Basin.

8. Alternative Evaluation and Selection

This treatment system alternative could effectively remove elevated hex-chromium concentrations. However, we do not recommend this alternative based on the disadvantages listed above.

> Per the disadvantages listed above, we do not recommend Alternative #2 a hexavalent chromium treatment system.

3 - Alternative Analysis – New Well

1. Description

Project Alternative #3 involves installing a new well in search of non-elevated hexavalent chromium (hex-chromium) concentrations in groundwater. The term "non-elevated" generally implies non-detect to trace hex-chromium concentrations [i.e., less than 5 micro-grams per Liter (µg/L)]. The hex-chromium March 2022 "draft" Maximum Contaminant Level (MCL) is 10 µg/L. A successful new well installation would also need to avoid elevated concentrations of nitrate and other potential contaminants.

Soquel Creek Water District staff consider the new well option unfeasible because it leaves the existing well in place - which is subject to (and contributes to) sea-water intrusion (i.e., high chloride / salinity levels in groundwater). Sea water intrusion is a major issue in the Pajaro Valley Groundwater Basin.

Alternative #3 addresses the primary problem of elevated hex-chromium concentrations, but there are several disadvantages as presented in the sections below.

2. Design Criteria

The design parameters generally include installing a 7.4-inch inner diameter polyvinyl chloride (PVC) SDR-17 casing water supply well. The proposed well would be screened at a different interval than the four previous wells installed [Well-2 (active), Well-1, Well-1973, Well-1961], as these wells all encountered elevated contaminants (Well-2: elevated hex-chromium; Well-1: elevated nitrate; Well-1973: assumed elevated nitrate, Well-1961: elevated nitrate).

The appropriate well screen interval may be below or in-between the existing water-bearing layers containing elevated concentrations of nitrate and hex-chromium. Because four previous

wells at the School (all screened at different intervals) encountered contamination above the respective MCL's for either nitrate or hex-chromium, we anticipate that locating acceptable quality water would be significantly challenging and costly.

To determine where to screen a potential new well, we must first understand where the School's four water supply wells were screened. The well screen is the interval(s) of the vertical well casing containing perforations that allow groundwater to enter the well casing. Well-2 is the active well; the other three wells presented below have been destroyed.

Well ID	Depth (ft)	Screened Intervals (ft)	Contamination
Well-1961	120	90 - 120	Elevated nitrate
Well-1973	205	100-105; 185-200	Elevated nitrate (assumed)
Well-1	534	unknown	Elevated nitrate
Well-2	425	330 – 420 (assumed)	Elevated hex-chromium

The information provided above/below was sourced from approximately 560 online files provided by Santa Cruz County staff (via their online portal). It also includes info from: (1) Santa Cruz County and Renaissance High School staff; (2) Department of Water Resources (DWR) online Well Completion Report Map Application; and (3) State Water Board Groundwater Ambient Monitoring and Assessment Program (GAMA) online map application. These various sources were carefully examined to discover useful information. We were not able to find all the information we wanted for these wells, and therefore had to make some assumptions based on our experience with similar projects.

Well-1961 construction information was from an engineering drawing dated 1961. Based on conversations with Renaissance High School staff, this was the first well installed at the School's property. This well, screened from 90 to 120-feet bgs, was destroyed due to elevated nitrate concentrations.

Because nitrate likely migrated down to this screened interval from ground surface agricultural applications (fertilizer), we assume that groundwater located above 90-feet bgs also has elevated nitrate concentrations. We could not find analytical data associated with this well.

Well-1973 [old irrigation / domestic well installed in 1973 per the Well Completion Report (WCR) presented in Appendix A] is assumed to be inactive / destroyed. Per the WCR, this well was installed in an agricultural field approximately 900-ft northeast of the closest School building (over 1,200-feet away from Well-2). We do not have analytical data associated with this well.

Well-1 extends to a depth of 534-feet bgs per a Santa Cruz County inspection report; however, we do not know where this well is screened nor when it was installed. Based on the nitrate contamination encountered in Well-1961, we assume that the top of the Well-1 screen was at least 180-feet bgs (i.e., to avoid the shallower nitrate contamination encountered in Well-1961) – and likely extends to approximately 530-feet bgs. Based on conversations with Renaissance High School staff, Well-1 is at least 25-years old. Well-1 is located adjacent to the active Well-2. Well-1 has been properly destroyed.

Analytical data from Well-2 indicates that elevated hex-chromium concentrations are present in groundwater from approximately 330 to 420-feet bgs (i.e., the assumed well screen interval). See Figure 3 for the Well-2 location.

In June 2001, three water samples collected from an unknown well source (could be Well-1961, Well-1973, or Well-1) show hex-chromium concentrations ranging from 8 to 10 µg/L (draft MCL is 10 µg/L). This indicates elevated hex-chromium concentrations near the draft MCL, present potentially above and/or below the Well-2 screen interval of 330 to 420-feet bgs.

Summary of the above Well Information: although the well information is not fully complete, it appears that nitrate and/or hex-chromium contamination is likely present from near the ground surface to at least approximately 530-feet bgs.

A potential new well would therefore need to be screened deeper than 530-feet bgs. Acceptable quality water may (or may not) be present at this depth – especially considering that sea water

intrusion (i.e., elevated chloride) is more likely at these deeper depths. So, a new water supply well could potentially require an expensive treatment system. Based on conversations with Pajaro Valley Water Management Agency staff, we anticipate that bedrock would be present at approximately 600-feet bgs, which further complicates well installation and would limit water production.

We performed a detailed analysis of nearby wells, searching for wells screened at depths near 600-feet bgs. We did not locate any wells screened near this interval within 2,500-feet of Well-2. Our well search analysis included online information from the GAMA, United States Geological Survey (USGS), and the Department of Water Resources Well Completion Map Application – in addition to information provided by Santa Cruz County staff.

3. Environmental Impacts

Alternative #3 has limited to moderate environmental impacts including installation of a new well, and land disturbance associated with replacing the water supply system and installing water and fire prevention storage tanks. In addition, a new well may contribute to sea level intrusion.

4. Land Requirements

There are no property or lease purchases required for this alternative. The proposed new well would be located on School-owned property, so no easements are required either.

5. Construction and Site Considerations

There is currently room near the existing wellhead to construct a new well. The new wellhead, pressure pump / pressure tanks, and water system control panel would be protected from the elements by a building that meets Division of State Architect (DSA) requirements.

6. Cost Estimate

Table 2 summarizes costs for a new potable water storage and supply system. Table 4 summarizes costs for the entire Alternative #3 (this includes the costs from Table 2).

7. Advantages / Disadvantages

The advantages of Alternative #3 is that it may provide a reliable long-term drinking water source for the School. In addition, Operations and Maintenance costs are similar to the existing system.

The disadvantages include:

- Moderate cost to install a new well, potable / fire prevention water storage tanks, and supply system
- There is no guarantee that acceptable water quality would be encountered in a new well. It's possible that even with a new well, an expensive treatment system may still be needed
- Bedrock is most likely present at a depth of approximately 600-feet bgs
- Soquel Creek Water District staff indicate that a new well is not feasible, because it is subject to (and contributes to) seawater intrusion, which is a significant issue in the Pajaro Valley Groundwater Basin

8. Alternative Evaluation and Selection

For the reasons stated above, we do not recommend Alternative 3.

> Based on the disadvantages listed in the sections above, we do not recommend that a new well is installed (Alternative #3)

4 - Alternative Analysis – Consolidation

1. Description

Project Alternative #4 involves connecting the School to the existing Soquel Creek Water District (SqCWD) water system.

Alternative #4 addresses the primary problem of elevated hex-chromium concentrations, because SqCWD delivers water that meets current drinking water requirements. SqCWD will comply with the proposed hex-chromium MCL including a proposed implementation schedule. Currently SqCWD has three wells that exceed the proposed MCL, but plans to proceed down a path to meet state regulations. These three wells are above 10 µg/L but below 20 µg/L. SqCWD has studied options for treatment and intends to comply with the MCL.

2. Design Criteria

The design parameters include extending the existing SqCWD water main on San Andreas Road southeast to service the School. The existing SqCWD water main currently terminates near the intersection of San Andreas Road and Sand Dollar Drive. A new, 12-inch diameter PVC C900 water main would extend from this intersection southeast approximately 550-feet along San Andreas Road. See Figures 4a & 4b.

At a strategic location in front of the School property along San Andreas Road, the proposed 12-inch diameter water main would terminate. See Figures 4a & 4b.

Two, 2-inch diameter water distribution lines (domestic & irrigation) would extend perpendicularly from the 12-inch water main toward the School property. On the San Andreas Road side of the railroad tracks, two water meter boxes would be installed (i.e., one water meter box for the domestic water line and one for the irrigation line). The 12-inch water main would terminate approximately 4-feet southeast of the two water distribution line connection points. A

fire hydrant placed near the end of the 12-inch water main extension would allow the water main to be periodically flushed (i.e., it would function as a blow-off valve in addition to its primarily function as a fire hydrant). A 12-inch blind flange would be placed on the southeast end of the 12-inch water main, which would help facilitate a potential water main extension (if necessary) at some point in the future.

From the water meter boxes mentioned above, the two water distribution lines would extend underneath the existing railroad tracks (the railroad tracks run parallel to and northeast of San Andreas Road). The two water distribution lines would be encased in a protective 60-feet long, 12-inch diameter; 3/8-inch wall thickness; steel casing that is centered on (and perpendicular to) the railroad tracks. This aspect of the project is regulated by the Santa Cruz County Regional Transportation Commission (SCC-RTC), who have jurisdiction over the railroad.

The steel casing would be installed using "jack & bore" - which is a trenchless, horizontal steel casing installation method. This method consists of excavating one pit on each side of the railroad tracks spaced about sixty feet apart (i.e., one "sending" and one "receiving" pit). Then the "jack & bore machine", placed in the sending pit, cuts a horizontal boring underground from the sending pit to the receiving pit, without disturbing the ground surface above. As the machine drills the hole, it also functions like a jack hammer to push the steel casing into place. The steel casing would be installed horizontally approximately six feet below the railroad tracks. Once the steel casing is installed, then the two water distribution lines would be placed inside the steel casing, and the annular space between the water lines and the steel casing would be properly sealed at each end of the steel casing. The steel casing is designed to protect both the water distribution lines and the railroad tracks.

As the two water distribution lines exit the School side of the steel casing, they would extend onto the School property and connect to two backflow prevention assemblies (i.e., one for the domestic line and one for the irrigation line). The domestic distribution line would extend approximately 200-feet and tie into the School's existing domestic water system located near Well-2. A booster pump would be placed on this distribution line to boost the water pressure up

from approximately 35-psi to approximately 90-psi, the average pressure that the current irrigation system operates at. A blow-off valve assembly would be installed near the end of the proposed domestic distribution line, to facilitate periodic flushing of this distribution line. See Figures 4a & 4b.

The irrigation distribution line would extend approximately 200-feet and tie into the School's existing irrigation system (the irrigation and domestic water lines would share the same trench). A booster pump would be placed on this distribution line to boost the water pressure up from approximately 35-psi to approximately 90-psi, the average pressure that the current irrigation system operates at. A blow-off valve assembly would be installed near the end of the proposed irrigation distribution line, to facilitate periodic flushing of this distribution line.

The domestic and irrigation water line booster pumps would be powered by the electrical service that powers the existing well. An existing generator will provide back-up power to the booster pumps whenever the primary PG&E electrical source is interrupted (booster pumps must be compatible with the existing generator: 480-volt; 90-amp; 60-hertz; 3-phase; the existing generator is not compatible with "Delta" power connections). Pressure sensors would be incorporated into the booster pump controls to protect them in the event of a water outage. The sensors/alarms would also notify School maintenance personnel if there was a water pressure loss.

3. Environmental Impacts

Alternative #4 has limited environmental impacts including land disturbance associated with installation of a new water main, two distribution lines, and associated appurtenances. We anticipate that soil excavated near the railroad may contain railroad-related contaminants. We have included this potential cost in our cost estimate table (Table 5).

4. Land Requirements

There are no property or lease purchases required for this alternative.

Per SqCWD staff, an easement along San Andreas Road will not be required for the proposed water main installation. San Andreas Road is within the jurisdiction of Santa Cruz County.

A Pipeline Occupancy Agreement is required to install the two new water distribution lines and protective steel casing underneath the existing railroad. The railroad is under the jurisdiction of Santa Cruz County Regional Transportation Commission (SCC-RTC) and the County Utilities Department. A Coastal Development Permit is also required. The efforts to obtain the Coastal Development Permit and the Pipeline Occupancy Agreement are in process.

5. Construction and Site Considerations

We anticipate that there is enough room to install the proposed water main, "jack & bore" steel casing, water distribution lines, water meter boxes, backflow prevention assemblies, booster pumps, and associated appurtenances. There is somewhat limited space to install the "jack & bore" receiving pit adjacent to San Andreas Road. However, a prime contractor and an associated jack & bore subcontractor indicated it can be done.

6. Cost Estimate

Table 5 summarizes costs for the entire Alternative #4.

7. Advantages / Disadvantages

The advantages of Alternative #4 is that it provides a reliable long-term drinking water source for the School. In addition, monthly Operations and Maintenance (O&M) water system costs would

be much lower for the School because Soquel Creek Water District (SqCWD) would supply domestic and irrigation water to the School.

The disadvantages include:

- Moderate cost to install
- The School would have to pay a SqCWD water bill each month. The monthly water bill cost would be significant. The School will want to consider lowering their daily water use, especially for irrigation. There is technical assistance and many technologies available to optimize irrigation water use. SqCWD requires that the School install water efficient fixtures, which will help lower the School's monthly water bill. These fixtures are included in the consolidation cost estimate. We anticipate that Division of Financial Assurance (DFA) staff will provide funding for the water efficient fixtures. See Table 5 for details.

8. Alternative Evaluation and Selection

For the reasons stated above, we recommend Alternative 4.

> Based on the advantages listed in the sections above, we recommend water system consolidation with Soquel Creek Water District (Alternative #4)

Selected Project

The selected project is water system consolidation with Soquel Creek Water District (SqCWD): which includes a new water main extension, water distribution lines, "jack & bore" steel casing installation under the railroad tracks, water meters, backflow prevention assemblies, booster pumps, and associated appurtenances.

1. Description

See the Alternative #4 "Design Criteria" section above for the project description and design details.

2. Schematic and Map of System's Proposed Facilities

See Figures 4s & 4b for a schematic and map of the proposed Alternative #4 Consolidation Project.

3. Justification

There were three viable alternatives to consider: (1) a hex-chromium treatment system; (2) a new water supply well; and (3) consolidation with SqCWD. Of these three alternatives, consolidation is simpler for the School to operate and more sustainable, making it the best long-term solution. In addition, SqCWD staff do not consider the treatment system or the new well to be viable solutions – because each of these alternatives include an active groundwater well (which is subject to, and contributes to seawater intrusion).

4. Describe Potential O&M Challenges and Solutions

If the consolidation option is selected, then the potential O&M challenges would be minor – because SqCWD would supply the water. The School would just need to maintain the new water distribution lines, the backflow prevention assemblies, booster pumps, associated appurtenances, and jack & bore horizontal casing underneath the railroad (everything on the School side of the SqCWD water meters). The backflow prevention assembly maintenance also includes annual testing / certification for both backflow devices.

The School will need to satisfy SCC-RTC insurance requirements for constructing a steel casing with water lines underneath the railroad track right of way (i.e., 25-feet perpendicular from the centerline of railroad tracks in each direction). The insurance requirements include: (1) workers' compensation, (2) auto insurance; and (3) general liability [plus additional general liability endorsement to work within 50-feet of a railroad, or Railroad Protective Liability Insurance]. These three insurance policies are only required for the School and the contractor during the construction phase of the project (we expect DFA will fund this as part of the construction process). Following construction, the SCC-RTC does not require ongoing insurance. If the steel casing and water lines within the railroad right of way (i.e., 25-feet perpendicular from the centerline of railroad tracks) were ever to require maintenance, then the SCC-RTC would again require the above three insurances policies – and the School would be required to verify "right to entry" with the SCC-RTC prior to performing the maintenance.

5. Determine if the Project is Consistent with Local/County Planning

To our knowledge, this project is consistent with local and County planning. A Coastal Development Permit is needed for this project, which is in process.

6. Project to Include Green and Resilient Components

See the "Comprehensive Response to Climate Change" section below for details on green and resilient components.

7. If Project Selected is a Consolidation Project, List All Parties Involved and Discuss New Structure

The consolidation stakeholders include the School, School District, and Soquel Creek Water District (SqCWD). The School will become a water customer of SqCWD. The Renaissance High School State & County regulated water system (#CA4400758) will cease to exist.

8. List Any Land that Will Need to Be Purchased or Acquired to Complete the Construction Project

No land will need to be purchased or acquired for the consolidation project (Alternative 4).

9. Describe Final Plans, Specifications, and Other Technical Aspects of the Project

The selected project includes connecting the School to the existing SqCWD water system. The overall conceptual design and process flow details are described above in the "Alternative Analysis – Consolidation: Design Criteria" section. Further detail of the proposed water system components is presented in Figures 4a & 4b and Table 5. We are currently working on the 90% plans and specifications (the 60% plans and specifications have been previously submitted).

10. Provide Water Demand and Capacity Analysis

As presented in the "Background Project Information" section above, the anticipated maximum day demand ranges from 8,212 (average daily demand x 1.66) to 14,792 gallons per day (peak average daily demand from September 2020). We anticipate that the SqCWD water system has enough capacity to supply water to the School.

11. Estimated Useful Life

We estimate the useful life for the following major components:

- New 12-inch water main: 40-years+
- New 2-inch water distribution lines (domestic & irrigation): 40-years+
- Horizontal "jack & bore" steel casing: 40-years+
- Booster pumps: 20+ years
- Backflow prevention assemblies: 20+ years
- Water Meters: 20+ years

Detailed Cost Estimate for the Selected Project

See Table 5 for the detailed cost estimate. See Table 6 for a cost comparison with the other two viable alternatives (i.e., new water supply well and treatment system). A 20-year life cycle cost analysis performed on the three alternatives indicated that consolidation would cost less than treatment, but cost marginally more than the new well. However, a new well does not appear feasible, so we consider consolidation the best, most sustainable long-term option for the School.

The 20-year life cycle cost analysis includes construction related costs (funded by DFA) plus 20-year project projection after construction is complete (funded by the School; not funded by DFA). Tables 3, 4, 5, and 6 specify "DFA-funded" and "School-funded" costs for the various alternatives.

Proposed Schedule

We anticipate the following schedule for submittals to the TA Team:

Engineering Report	March 13, 2023
90% plans to the TA Team	March 31, 2023
Technical Package	May 31, 2023
Environmental Package	May 31, 2023

The schedule may be affected by DFA's decision on mapping the existing distribution system.

Schematic and map of system's proposed facilities

See Figures 4a & 4b for details.

Comprehensive Response to Climate Change

This section describes climate change preparedness for the project and is organized as follows:

Vulnerability – Describes the effects of climate changes that the proposed project is susceptible to, including critical threshold conditions that may cause damage to the facility or result in loss of services

Adaptation – Describes the applied adaptation measures considered for the project, including adaptation measures deemed unnecessary, and explains why such measures were eliminated

Mitigation – Describes the mitigation measures considered for the project, including mitigation measures deemed unnecessary, and explains why such measures were eliminated

1. Vulnerability

Vulnerability is used to identify effects of climate change that the project may be susceptible to. Vulnerability includes sea level rise, water supply depletion, adverse water supply quality, flooding/storm surges, wildfires, and drought.

The climate change effects the Project may be susceptible to are discussed below.

Sea Level Rise

The project is not susceptible to sea level rise, as the School's elevation is approximately 120-feet above the Pacific Ocean. The ocean is located approximately 2,700-feet south-southwest of the School.

Water Supply Quality issues

The School has an existing water supply well with elevated hex-chromium concentrations. We recommend that this well is destroyed and that the School be connected to the Soquel Creek Water District (SqCWD) water system.

A significant portion of Santa Cruz County is occupied by forest, prairie, and agricultural land. Wildfire is a common occurrence in the Region due primarily to the warm, dry climate. Longer and warmer seasons are likely to result in a low to moderate increase in fire risk. This could result in increased sedimentation to reservoirs, possibly negatively impacting surface water quality. However, because the School utilizes groundwater (currently and would also with the proposed consolidation alternative) and is primarily surrounded by irrigated agricultural land – the risk from wildfires is considered generally low. In addition, the School is located within 2,700-feet of the Pacific Ocean in a mild climate that includes significant cloud cover and moisture from marine fog.

Statewide, rainfall and snowfall are expected to change in terms of both type and timing. At the local level, changes in the timing and intensity of precipitation could negatively affect groundwater recharge and the local groundwater supply.

Flooding/Storm Surges

The project is not susceptible to flooding or storm surges. The School is located outside of the Federal Emergency Management Agency's (FEMA) 100-year flood plain.

Forest Fires

The project is generally not susceptible to forest fires, because it is primarily surrounded by irrigated agricultural fields.

Drought

Longer or more frequent droughts due to climate change may adversely affect all water supplies. This could lead to water supply issues for all of California, including the School. Water conservation should be practiced to help insure a long-term water supply. Water efficient fixtures are required by SqCWD and have been included in this project.

Other

No other vulnerability effects of climate change were identified for the Project.

2. Adaptation

Adaptation is the term used to identify measures taken as a direct response to climate change effects. Multiple measures can be taken in response to a single vulnerability. For example, in response to sea level rise an agency may investigate constructing sea walls or levees to prevent flooding. Flood contingencies could also be explored to protect the project if the levees fail or in the event of severe storm surges.

Adaptive measures in the Project in response to Climate Change are described below.

Renewable Energy Sources

Energy usage will not be significantly changed as this project consists of simply replacing the School's existing water supply well with groundwater produced from the SqCWD water supply wells. The School's existing submersible pump would no longer be used, but two booster pumps will be needed to increase the SqCWD water pressure for the School's needs. SqCWD strives to use energy efficient technologies in their water system.

Drought Resiliency and Flood Contingency

SqCWD will provide potable water for the proposed consolidation alternative. SqCWD sources 100% groundwater from CA Basin 3-001, Santa Cruz Mid-County Groundwater Basin (comprises two primary aquifers: the Purisima Aquifer Formation and the Aromas Red Sands). This basin is in overdraft, meaning that more water is pumped out than is naturally replenished by rainfall. SqCWD has 16 active groundwater supply wells (plus 2 standby wells and 2 inactive wells) and 18 groundwater storage tanks. Even though the basin is in overdraft, the amount of supply wells contributes to drought resiliency, because if some wells run low on water, they could rely on other wells that may still contain adequate water. This is a better situation than if SqCWD only had a few wells. SqCWD is working diligently to remedy the basin overdraft.

The project is not subject to flooding. The School is located outside of the Federal Emergency Management Agency's (FEMA) 100-year flood plain.

Permeable Pavements

No permeable pavements are incorporated in the Project.

Elevated Construction, Sea Walls, Levees

No elevated construction, sea walls or levees are necessary for the Project, and none have been incorporated into the Project.

Green Roofing

No green roofing has been incorporated in the Project, as no building structures are involved.

Fire Resistant Water Connections and Hydrants

Two fire hydrants are proposed along San Andreas Road. Fire resistant water connections are not part of the Project.

Other

No other adaptations are included in the Project.

3. Mitigation

Mitigation is the term used to identify measures taken to slow or stop changes caused by greenhouse gas emissions in the atmosphere. Measures identified in adaptation may also be used for mitigation. For example, water conservation may be an adaptation response to drought vulnerability but also a mitigation measure by reducing the energy consumed to move excessive volumes of water. Green roofing as an adaptation measure will help to reduce the heat island effect of an urban community, and as a mitigation measure will reduce the energy consumed to heat and cool the building.

Mitigation measures taken to reduce concentrations of greenhouse gases in the atmosphere as part of the Project are described below.

Renewable Energy Sources

Renewable energy sources are not a part of this project.

Energy Conservation

High efficiency booster pump motors are the primary energy conservation measure incorporated into this project.

Water Conservation

Water conservation components of the Project include:

- New water main and water distribution lines which will be “tight” (no leaks)

- Water meters on the domestic and irrigation water distribution lines to quantify water usage
- The anticipated high cost of the School's water bill from SqCWD will inspire the School to use less water (especially for irrigation).
- Water efficient fixtures to be installed at the School. This is a SqCWD requirement.

Other

No other mitigation measures were included in the Project.

An Environmental Analysis of the various Engineering Alternatives is presented in Appendix B.

Limitations

Our service consists of professional opinions and recommendations made in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all others, either expressed or implied. The analysis and conclusions in this report are based on site observations and existing data, some of which have been conducted or collected by others, all of which are necessarily limited. Additional data from future work may lead to modifications of the opinions expressed herein. All work was conducted under the direct supervision of a Professional Engineer, registered in the state of California, and experienced in drinking water system design and water resource engineering.

Thank you for the opportunity to prepare this *Engineering Report*. If you have any questions or comments regarding this project, please contact us at 831-722-3580.

Sincerely yours,

Weber, Hayes and Associates

A California Corporation

By: _____
Shawn Mixan, EIT, D2, T2
Project Engineer

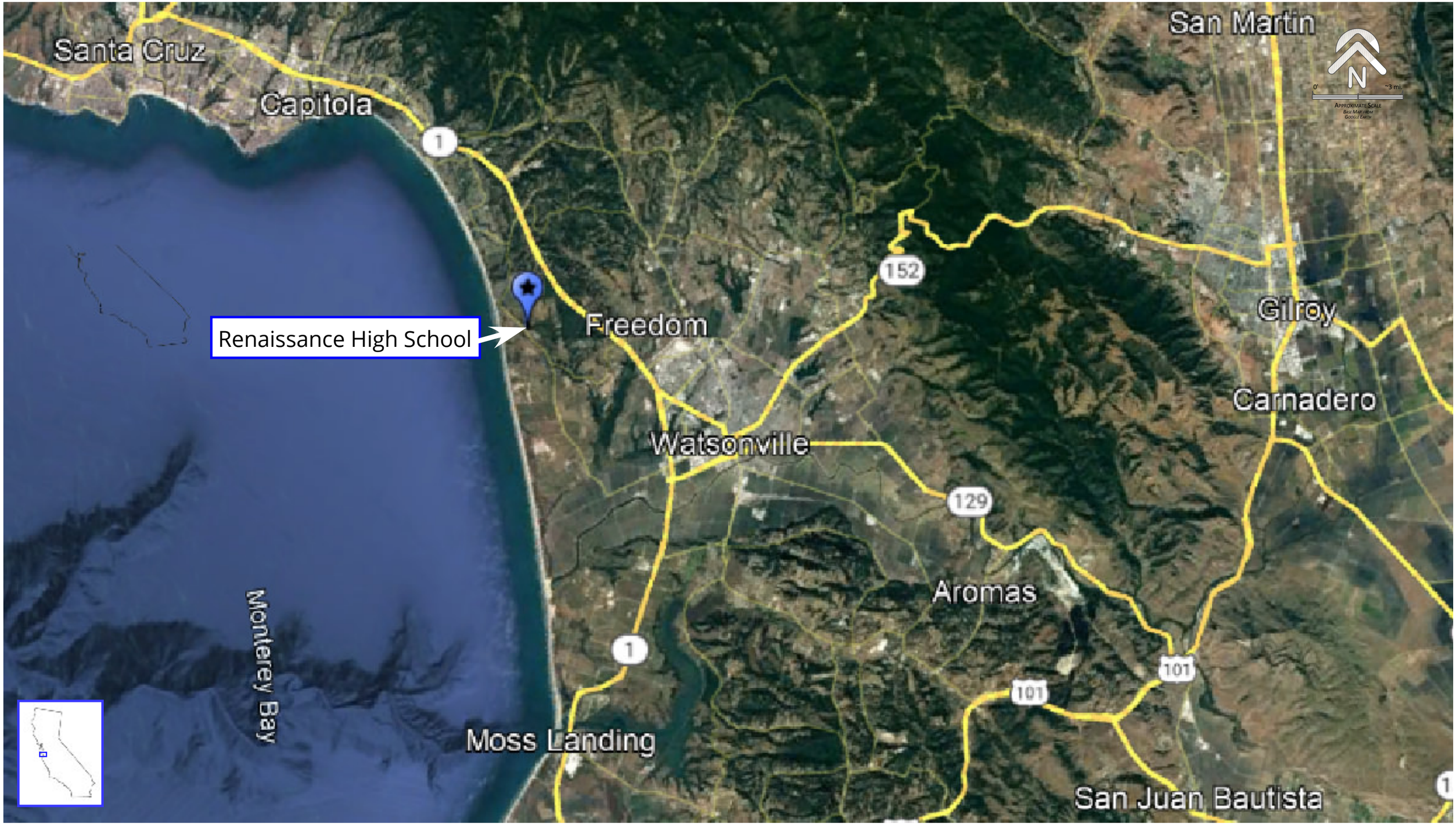
And: _____
Craig B. Drizin, PE
Principal Engineer

References

- Blute et al. (2015) Microfiltration in the RCF Process for Hexavalent Chromium Removal from Drinking Water. Water Research Foundation: Web Report #4365. This reference was cited by the State Water Board in the document shown below:

- State Water Resources Control Board – Division of Drinking Water (August 10, 2021) *Request for External Scientific Peer Review of the Scientific Basis of Proposed Hexavalent Chromium Maximum Contaminant Level Best Available Technologies* (page 6)

FIGURES



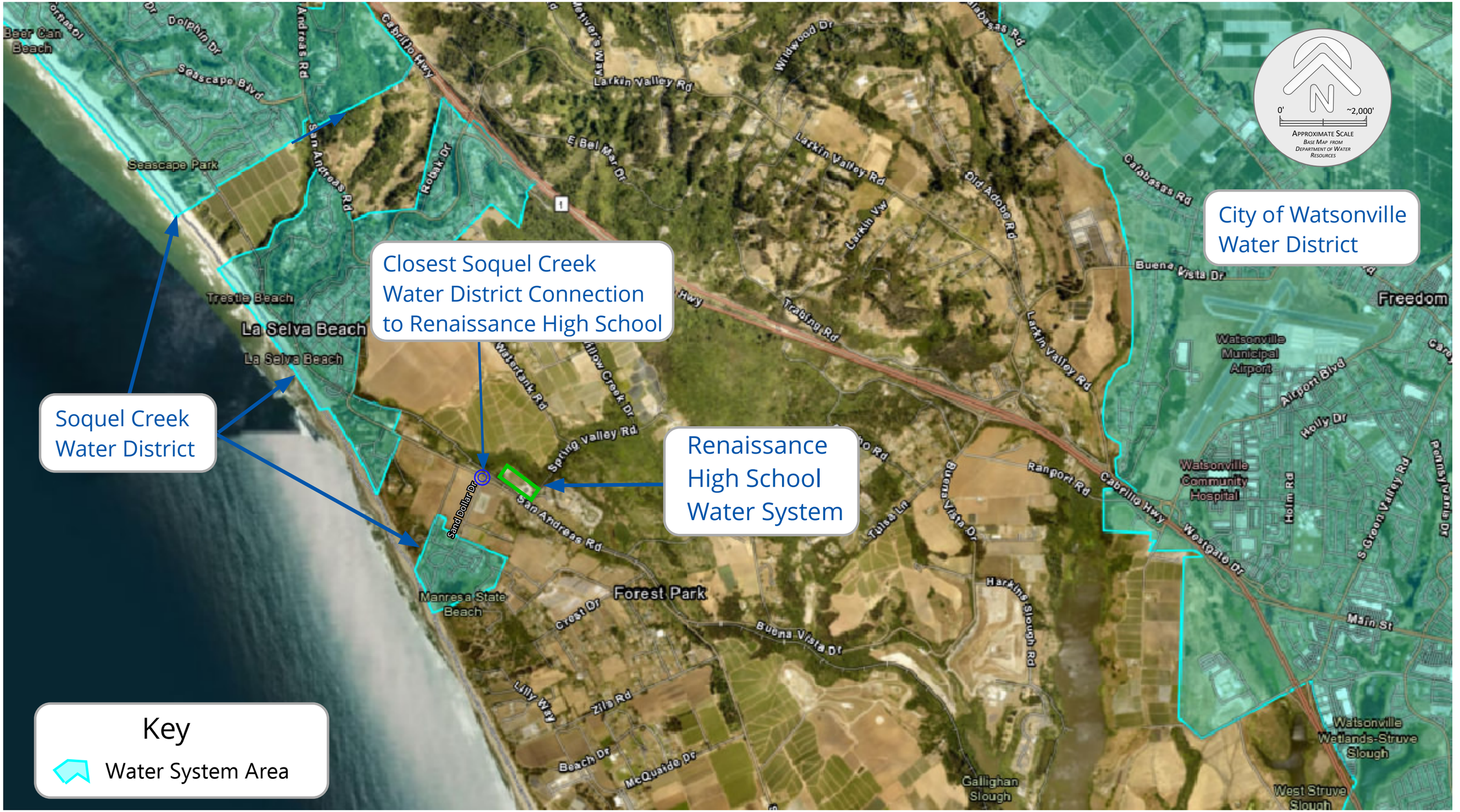
Weber Hayes Associates

Location Map

Renaissance High School 11 Spring Valley Rd, La Selva Beach, CA

Figure 1

March 2023



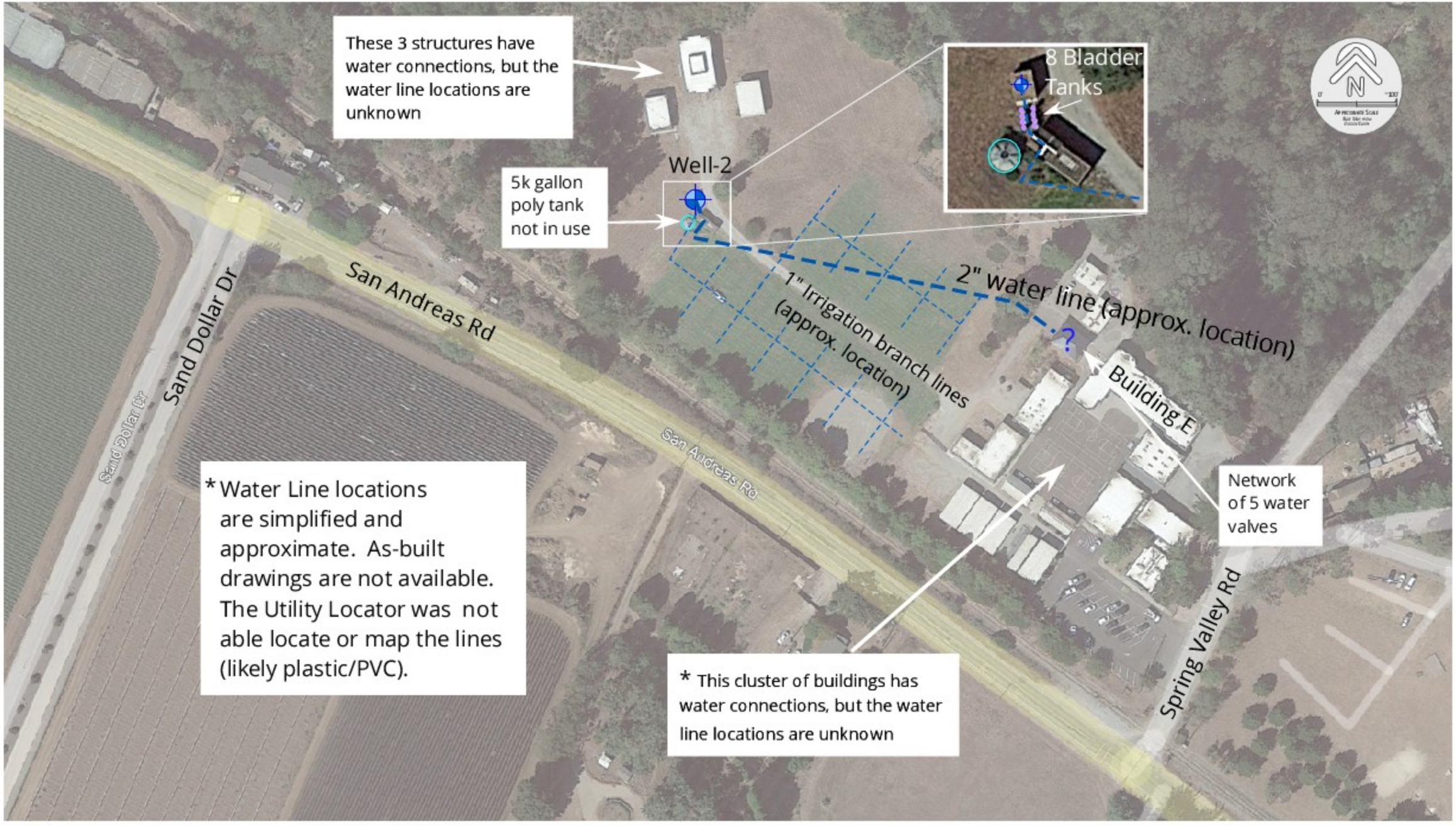
Weber Hayes Associates

Vincinity Map with Water Company Service Area Boundaries

Renaissance High School 11 Spring Valley Rd, La Selva Beach, CA

Figure 2

March 2023



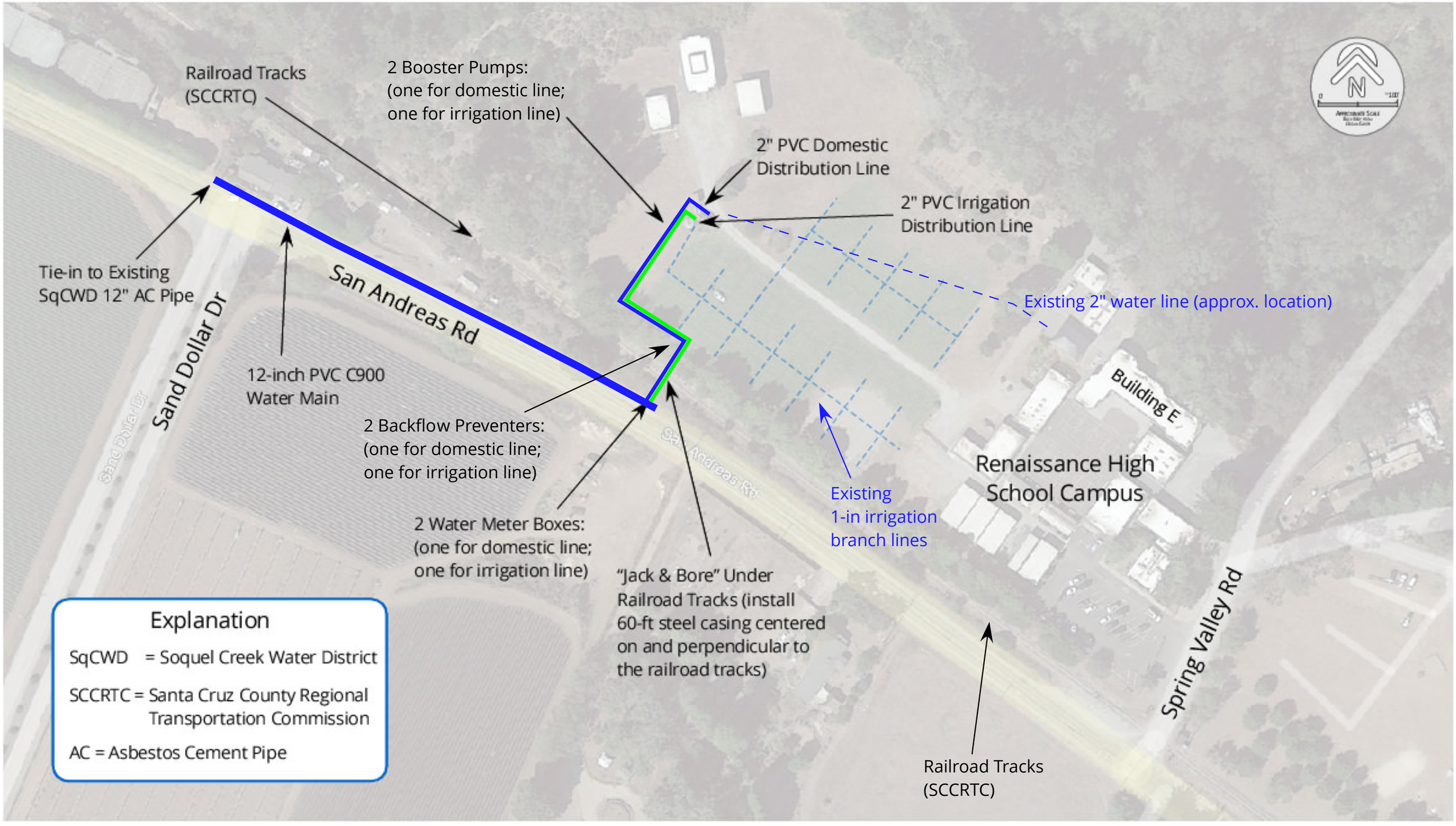
Weber Hayes Associates

Schematic and Map of the Water System - Existing

Renaissance High School 11 Spring Valley Rd, La Selva Beach, CA

Figure 3

March 2023



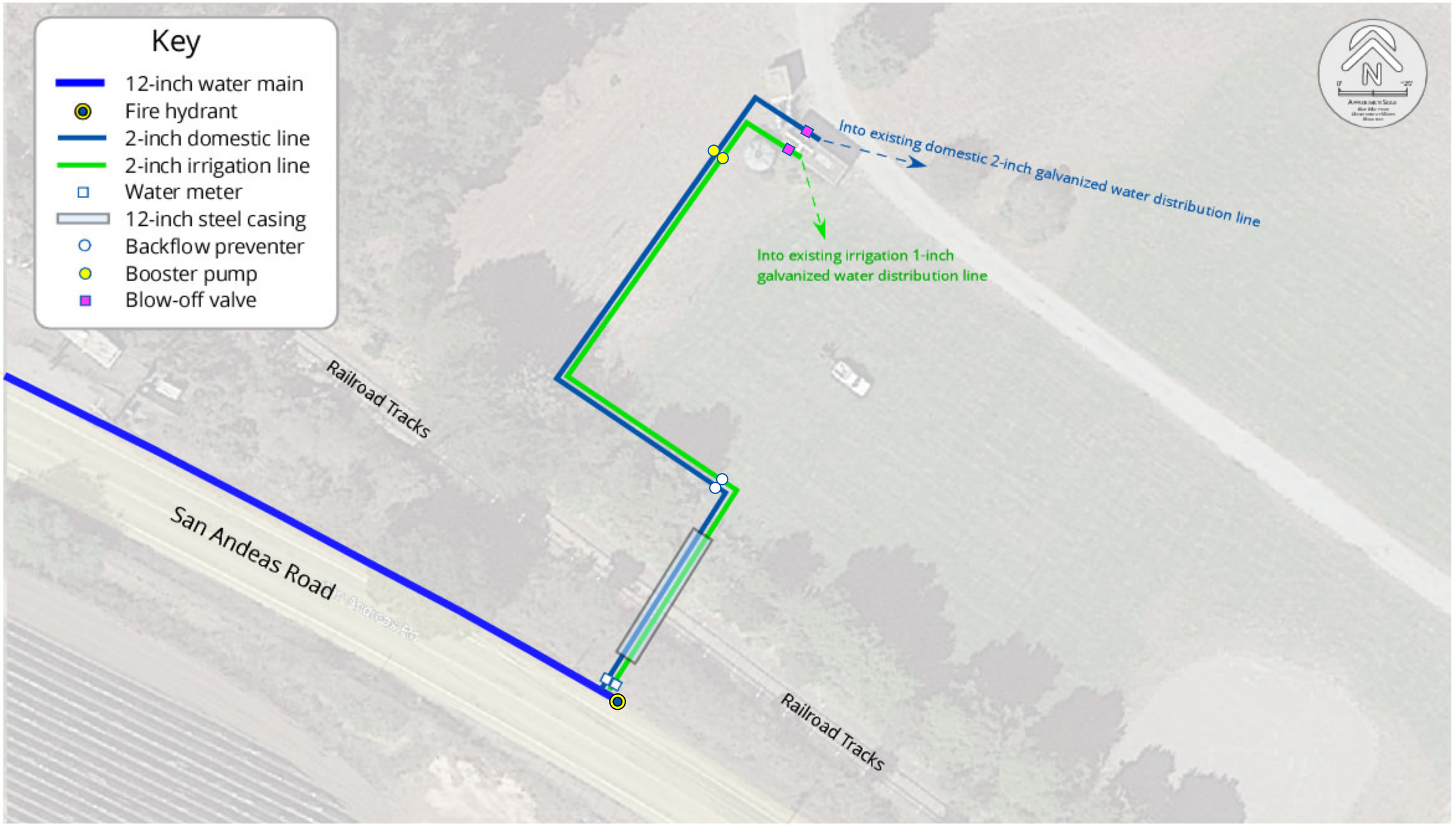
Weber Hayes Associates

Schematic and Map of the Water System - Proposed Improvements

Renaissance High School 11 Spring Valley Rd, La Selva Beach, CA

Figure 4a

March 2023



Weber Hayes Associates

Schematic and Map of Water System - Proposed Improvements (Detailed)

Renaissance High School 11 Spring Valley Rd, La Selva Beach, CA

Figure 4b

March 2023

TABLES

Table 1 - Water Quality Data (Well-2)

Analyte	Sample Date	Result	Unit	MCL
HYDROXIDE AS CALCIUM CARBONATE	10/5/21	ND	MG/L	---
CYANIDE	10/5/21	ND	UG/L	150
NITRATE	10/5/21	ND	mg/L	10
NITRATE	9/8/20	0.11	mg/L	10
NITRATE	6/4/19	ND	mg/L	10
NITRATE	9/27/18	0.17	mg/L	10
NITRATE	5/9/18	ND	mg/L	10
NITRATE	4/2/18	0.11	mg/L	10
NITRATE	7/11/16	0.11	mg/L	10
NITRATE	6/7/16	0.12	mg/L	10
NITRATE	9/6/15	0.13	mg/L	10
CHROMIUM, HEX	1/26/15	21	UG/L	10
CHROMIUM, HEX	7/8/15	20	UG/L	10
CHROMIUM, HEX	10/5/15	21	UG/L	10
CHROMIUM, HEX	1/11/16	23	UG/L	10
CHROMIUM, HEX	4/5/16	21	UG/L	10
ALKALINITY, TOTAL	10/5/21	150	MG/L	---
ALKALINITY, BICARBONATE	10/5/21	150	MG/L	---
ALKALINITY, CARBONATE	10/5/21	ND	MG/L	---
1,2,3-Trichloropropane (123-TCP)	12/21/18	ND	UG/L	0.005
1,2,3-Trichloropropane (123-TCP)	2/16/19	ND	UG/L	0.005
2,3,7,8-TCDD	6/22/22	ND	NG/L	0.03
TRICHLOROFLUOROMETHANE	8/23/21	ND	UG/L	150
TRANS-1,3-DICHLOROPROPENE	8/23/21	ND	UG/L	.5
CIS-1,3-DICHLOROPROPENE	8/23/21	ND	UG/L	.5
METHYL TERT-BUTYL ETHER	8/23/21	ND	UG/L	13
1,2,4-TRICHLOROBENZENE	8/23/21	ND	UG/L	5
CIS-1,2-DICHLOROETHYLENE	8/23/21	ND	UG/L	6
1,3-DICHLOROPROPENE	8/23/21	ND	UG/L	.5
TRICHLOROTRIFLUOROETHANE	8/23/21	ND	UG/L	1200
XYLENES, TOTAL	8/23/21	ND	UG/L	1750
XYLENE, META AND PARA	8/23/21	ND	UG/L	---
DICHLOROMETHANE	8/23/21	ND	UG/L	5
O-DICHLOROBENZENE	8/23/21	ND	UG/L	600
P-DICHLOROBENZENE	8/23/21	ND	UG/L	5
VINYL CHLORIDE	8/23/21	ND	UG/L	.5
1,1-DICHLOROETHYLENE	8/23/21	ND	UG/L	6
1,1-DICHLOROETHANE	8/23/21	ND	UG/L	5
TRANS-1,2-DICHLOROETHYLENE	8/23/21	ND	UG/L	10
1,2-DICHLOROETHANE	8/23/21	ND	UG/L	.5
1,1,1-TRICHLOROETHANE	8/23/21	ND	UG/L	200
CARBON TETRACHLORIDE	8/23/21	ND	UG/L	.5
1,2-DICHLOROPROPANE	8/23/21	ND	UG/L	5
TRICHLOROETHYLENE	8/23/21	ND	UG/L	5

Table 1 - Water Quality Data (Well-2)

Analyte	Sample Date	Result	Unit	MCL
1,1,2-TRICHLOROETHANE	8/23/21	ND	UG/L	5
TETRACHLOROETHYLENE	8/23/21	ND	UG/L	5
1,1,2,2-TETRACHLOROETHANE	8/23/21	ND	UG/L	1
CHLOROBENZENE	8/23/21	ND	UG/L	70
BENZENE	8/23/21	ND	UG/L	1
TOLUENE	8/23/21	ND	UG/L	150
ETHYLBENZENE	8/23/21	ND	UG/L	300
STYRENE	8/23/21	ND	UG/L	100
O-XYLENE	8/23/21	ND	UG/L	---

Notes:

MCL = Maximum Contminant Level

Result exceeds the draft MCL

mg/L = milligrams per Liter

pCi/L = picocuries per Liter

µg/L = micrograms per Liter

t.o.n. = threshold odor number

NTU = Nephehelometric Turbidity Units

Table 2

Engineer's Opinion of Probable Costs for New Potable Water Storage and Supply System

(this table is a component for "Alternative #2 Treatment System" and "Alternative #3 New Well")

ITEM	Cost per Unit	Quantity	Unit	COST ($)
Water Storage (domestic water use only) - two, 5,000-gallon poly tanks	10,000	2	EA	20,000
Fire prevention storage tank - 35,000-gallon steel bolted tank (includes 2-inch PVC Schedule 80 piping from the well head)	180,000	1	LS	180,000
Fire hydrant water line from fire prevention storage tank to School parking lot: 4-inch PVC C900	100	750	1	75,000
New Fire Hydrant (See SCWD Standard Plans No. S-9, S-10, and S-11); include 4 bollards for each hydrant	18,000	2	EA	36,000
Water distribution lines for domestic (700-ft) & irrigation (200-ft) - 2-inch Schedule 80 (includes trenching and backfill)	125	900	FT	112,500
Backflow Prevention Assemblies (domestic & irrigation) - 2-inch	4,000	2	EA	8,000
Blow-off valve assemblies for domestic & irrigation lines	2,000	2	EA	4,000
New Pressure Pump and Bladder Tanks (ASME rated)	80,000	1	LS	80,000
Water flow meters at: (1) well head; (2) water storage tanks outlet to School; (3) fire prevention tank inlet; and (4) irrigation water pipe	1,800	4	EA	7,200
Basic SCADA system	50,000	1	LS	50,000
Permanent Backup Generator (school already has one that is unused near Well-2)	0	1	LS	0
Fence and improve water system site (area including wellhead, bladder tanks, storage tanks); concrete pad with weather cover for control panel	65,000	1	LS	65,000
Engineering field oversight of system upgrade	25,000	1	LS	25,000
Engineering & project administration (including as-built plans & completion report)	15,000	1	LS	15,000
Total Cost	---	---	---	677,700

Notes:

This cost estimate table includes "New Potable Water Storage and Supply System" related items common to Project Alternatives 2 and 3. As such, the total cost reflected in this cost estimate table is shown as the first line item in Table 3 (Alternative 2) and Table 4 (Alternative 3). This was done to simplify the presentation of the various cost estimate tables.

LS = Lump Sum
LF = Lineal Feet
EA = Each
HR = Hour
ASME = American Society of Mechanical Engineers

Table 3

Engineer's Opinion of Probable Costs for Treatment System (Alternative #2)

TREATMENT SYSTEM - ITEM	COST ($)
New Potable Water Storage and Supply System (see Table 2 for details)	677,700
Engineering design of treatment system; as built plans	60,000
Treatment system Permitting at the County / State level (also including permitting the Ion Exchange (I-X) system concentrate waste stream for off-site disposal)	15,000
Ion Exchange Treatment System (to remove hexavalent chromium concentrations). Ion-Exchange (strong base anion exchange) lead-lag pair of 4-feet diameter treatment vessels and prefiltration assembly. The Ion-Exchange (I-X) resin would be single use capacity.	160,000
Installation of Ion Exchange equipment and electrical power connection	25,000
Structure with concrete pad to house the treatment system (meets DSA[1] requirements)	75,000
New piping from well to Ion Exchange (I-X) system; new piping from I-X System to distribution system	8,000
Install tank to hold brine stream prior to off-haul for disposal at a wastewater treatment plant	10,000
Engineering oversight during treatment system installation	12,500
Admin Costs - Coordination with School, bid documents, contractor selection	20,000
Project management	25,000
Subtotal of Treatment System Construction-Related Costs (this portion will be funded by DFA[2])	1,088,200

Water-Related Costs that Renaissance High School must pay (i.e., DFA[2] will not fund these items; not a part of this project)	
Annual Operations and Maintenance - service visits	18,000
Annual Operations and Maintenance - Ion Exchange "I-X Concentrate" stream waste disposal	15,014
Annual Operations and Maintenance - Ion Exchange resin & prefilter filter replacements	7,500
20-Year Operations and Maintenance Cost	810,288
20-year Capital Expenditures (expect pipe & appurtenances to last 20+ years)	30,000
Project administration (20-years)	75,000
Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-year project projection, after construction is complete)	915,288
Costs the School must pay (not part of this project): Project Projection (20-years)	915,288

Construction-Related Costs (DFA[2]-funded) + 20-year Project Projection (School-funded) = 20-Year Project Lifecycle Costs	2,003,488
Total + 20% contingency	2,404,186

Notes:

1 - DSA = Division of the State Architect

2 - DFA = Division of Financial Assurance (State Water Board)

Table 4

Engineer's Opinion of Probable Costs for New Well (Alternative #3)

NEW WELL - ITEM	COST ($)
New Potable Water Storage and Supply System (see Table 2 for details)	677,700
Engineering oversight during well drilling	45,000
Permitting	5,000
Environmental	7,500
Mobilization / Demobilization	12,000
Drill boring for new well (Assume 900 feet deep)	110,000
Install well casing, filter pack, and well seal	125,000
Well development and pump test	50,000
E-log & caliper logs	30,000
Site Clean Up	7,500
Well surface completion, well pad, and enclosure structure (meets DSA[1] requirements). Well pump, controls, connection, and commissioning	100,000
Destroy existing well - using explosives	15,000
Admin Costs - Coordination with School, bid documents, contractor selection	20,000
Project management	20,000
DSA approved inspector for construction project	25,000
Subtotal of New Well Construction-Related Costs (this portion will be funded by DFA[2])	1,249,700

Water-Related Costs that Renaissance High School must pay (i.e., DFA[2] will not fund these items; not a part of this project)	
Annual Operations and Maintenance (including potential chlorine treatment)	12,000
20-Year Operations and Maintenance Cost (including potential chlorine treatment)	240,000
20-year Capital Expenditures (expect pipe & appurtenances to last 20+ years)	35,000
Project administration (20-years)	60,000
Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-year project projection, after construction is complete)	335,000
Costs the School must pay (not part of this project) - Project Projection (20-years)	335,000

Construction-Related Costs (DFA[2]-funded) + 20-year Project Projection (School-funded) = 20-Year Project Lifecycle Costs	1,584,700
Total + 20% contingency	1,901,640

Notes:

1 - DSA = Division of the State Architect | 2 - DFA = Division of Financial Assurance (State Water Board)

Table 5

Engineer's Opinion of Probable Costs for Consolidation (Alternative #4)

CONSOLIDATION - ITEM	Cost per unit	# Units	Unit	COST ($)
Engineering oversight during consolidation related construction	1,500	40	Days	60,000
Permitting	7,500	1	LS	7,500
Encroachment Permit	6,000	1	LS	6,000
Environmental	7,500	1	LS	7,500
Coastal Development Permit application (handled in design phase)	0	1	LS	0
Railroad related jack & bore excavation soil sampling and reporting	15,000	1	LS	15,000
SCC-RTC required insurance policy during construction phase of project	15,000	1	LS	15,000
Admin Costs - Coordination with School, bid documents, contractor selection	20,000	1	LS	20,000
Project management	20,000	1	LS	20,000
Install water efficient fixtures to the school buildings	75,000	1	LS	75,000
Destroy existing well - using explosives	15,000	1	LS	15,000
Contractor mobilization / demobilization	10,000	1	LS	10,000
LAFCO Costs (completed in design phase)	0	1	LS	15,000
DSA approved inspector for construction project	25,000	1	LS	25,000
SqCWD - Water Capacity Charges for 2-inch domestic connection	26,430	1	EA	26,430
Various Items Above | Subtotal	---	---	---	317,430

Table 5

Engineer's Opinion of Probable Costs for Consolidation (Alternative #4)

CONSOLIDATION - ITEM	Cost per unit	# Units	Unit	COST ($)
New Water Main (12-inch)				
Water Main: 12-inch PVC (AWWA C900) with locating wire per the SCWD spec (see SCWD Standard Plan No. S-14; Materials & Construction - pg 4)	275	550	FT	151,250
Trenching & Backfill for 12-inch water main; minimum trench width 30-inches; minimum pipe cover 42-inches; trenching to be excavated through asphalt near the shoulder of the road (north side of San Andreas Rd). [see SCWD Standard Plan No. S-14] - includes the off-haul of excavated soil	175	550	FT	96,250
In-line butterfly type valves for 12-inch water main. (see "Design Criteria - page 4-3" and "Materials & Construction - pg 20-23")	4,500	3	EA	13,500
New Fire Hydrants (See SCWD Standard Plans No. S-9, S-10, and S-11); include 4 bollards for each hydrant	18,000	2	EA	36,000
Combination air and vacuum release valve: (SCWD Standard Plan No. S-11)	4,500	1	EA	4,500
Connection to Soquel Creek Water District (SCWD) existing water main at San Andreas Rd and Sand Dollar Drive (northwest corner of intersection); existing SCWD water main is composed of 12-inch Asbestos Cement (i.e. "AC Pipe")	15,000	1	LS	15,000
"T" connection PVC component at southeast end of the proposed water main (12-inch x 12-inch x 4-inch). The 4-inch "T" section will connect to a fire hydrant. The 12-inch downstream end of the "T" to have a "flange cap" to allow for future expansion of the water main (should it be further extended at some point in the future)	6,000	1	EA	6,000
Traffic Control along Sand Andreas Rd and Sand Dollar Drive during all construction activities associated with the water main installation	20,000	1	LS	20,000
New Water Main | Subtotal	---	---	---	342,500

Table 5

Engineer's Opinion of Probable Costs for Consolidation (Alternative #4)

CONSOLIDATION - ITEM	Cost per unit	# Units	Unit	COST ($)
New Water Distribution System				
Connect the 2-inch domestic water distribution line to the 12-inch water main	4,000	1	EA	4,000
Connect the 2-inch irrigation water distribution line to the 12-inch water main	School-Funded [4]			
Precast water meter Christy boxes for the 2-inch domestic distribution line (SCWD Material & Construction - pg 32)	1,500	1	EA	1,500
Precast water meter Christy boxes for the 2-inch irrigation distribution line (SCWD Material & Construction - pg 32)	School-Funded [4]			
Backflow Prevention Assembly for 2-inch domestic distribution line (SCWD standard Plan No. 16; pg 1 & 2)	4,000	1	EA	4,000
Backflow Prevention Assembly for 2-inch irrigation distribution line (SCWD standard Plan No. 16; pg 1 & 2)	School-Funded [4]			
Distribution system water line (domestic); 2-inch PVC & Trenching / Backfill (with locating wire) [SCWD Standard Plan No. S-14] - includes the off-haul of excavated soil	100	200	FT	20,000
Distribution system water line (irrigation); 2-inch PVC & Trenching / Backfill (with locating wire) [SCWD Standard Plan No. S-14] - includes the off-haul of excavated soil	School-Funded [4]			
Booster pump: 2-inch domestic line; boost pressure from 35-psi to 100-psi (480-Volt; 3-phase power compatible)[3]	45,000	1	EA	45,000
Booster pump: 2-inch irrigation line; boost pressure from 35-psi to 100-psi (480-Volt; 3-phase power compatible)[3]	School-Funded [4]			
Blow Off Assembly for distribution system water line (domestic) [SCWD standard plan No. S-12]	2,000	1	EA	2,000
Blow Off Assembly for distribution system water line (irrigation) [SCWD standard plan No. S-12]	School-Funded [4]			
Connect the proposed 2-inch domestic line to the existing 2-inch domestic line currently feeding the School. Assumes that pot-holing will be required	7,500	1	LS	7,500
Connect the proposed 2-inch irrigation line to the existing 1-inch irrigation line at the visible irrigation system backflow assembly (existing)	School-Funded [4]			
Traffic Control along Sand Andreas Rd during construction activities associated with the distribution system installation. Should only need traffic control while working on the San Andreas Rd side of the existing railroad tracks	10,000	1	LS	10,000
Water Distribution System | Subtotal	---	---	---	94,000

Table 5

Engineer's Opinion of Probable Costs for Consolidation (Alternative #4)

CONSOLIDATION - ITEM	Cost per unit	# Units	Unit	COST ($)
Jack & Bore - Steel Casing & Carrier Pipes (domestic & irrigation) - Under the Railroad				
Install horizontal "jack & bore" steel casing (12-inch diameter; 3/8" wall thickness; SCWD Standard Plan No. 13) to protect the 2-inch domestic line and the 2-inch irrigation line (both 2-inch carrier pipes to be placed inside of the one 12-inch steel casing). Steel casing to be sealed on both ends [See the SCWD Standard Plan No. S-13; also to comply with Arema (American Railway Engineering and Maintenance-of-Way Association) Specifications: Chapter 1; Part 5 Pipelines]. Steel casing to have cathodic protection and a anode test station.	1,800	60	FT	108,000
All necessary excavations to support the horizontal "jack & bore" process.	60,000	1	LS	60,000
Backfill of all excavations per SqCWD and SCCRTC (Santa Cruz County Regional Transportation Commission) specifications. Restore the ground surface to the previously existing condition.	40,000	1	LS	40,000
Off-haul potentially contaminated soil (associated with excavations near railroad tracks)	250	100	Tons	25,000
Traffic Control along Sand Andreas Rd during all construction activities associated with jack and bore steel casing installation	20,000	1	LS	20,000
Jack & Bore - Steel Casing & Carrier Pipes | Subtotal	---	---	---	253,000

Consolidation Construction-Related Costs | Subtotal (this portion will be funded by DFA[2])	---	---	---	1,006,930

Table 5

Engineer's Opinion of Probable Costs for Consolidation (Alternative #4)

CONSOLIDATION - ITEM	Cost per unit	# Units	Unit	COST ($)
Water-Related Costs that Renaissance High School must pay (i.e., DFA[2] will not fund these items; not a part of this project)				
Prepare Engineering Design & Plans	25,000	1	EA	25,000
Connect the 2-inch irrigation water distribution line to the 12-inch water main	4,000	1	EA	4,000
Precast water meter Christy boxes for the 2-inch irrigation distribution line (SCWD Material & Construction - pg 32)	1,500	1	EA	1,500
Backflow Prevention Assembly for 2-inch irrigation distribution line (SCWD standard Plan No. 16; pg 1 & 2)	4,000	1	EA	4,000
Distribution system water line (irrigation); 2-inch PVC & Trenching / Backfill (with locating wire) [SCWD Standard Plan No. S-14] - (will share the same trench as the domestic line; this cost only includes the irrigation 2-inch PVC with locating wire; domestic water line trench line item pays for the trenching)	50	200	FT	10,000
Booster pump: 2-inch irrigation line; boost pressure from 35-psi to 100-psi (480-Volt; 3-phase power compatible)[3]	45,000	1	EA	45,000
Blow Off Assembly for distribution system water line (irrigation) [SCWD standard plan No. S-12]	2,000	1	EA	2,000
Connect the proposed 2-inch irrigation line to the existing 1-inch irrigation line at the visible irrigation system backflow assembly (existing)	7,500	1	LS	7,500
SqCWD - Water Capacity Charges for 2-inch irrigation connection	26,430	1	EA	26,430
"20-Year" water usage bills from SqCWD; based on average daily demand of 3,000[1] gpd & $0.0187 per gallon	2,932	240	Months	703,571
"20-year" Operations & Maintenance Cost (including: (1) maintaining water system piping and appurtenances downstream of the SqCWD water meter; (2) annual testing of backflow prevention assemblies	400	240	Months	96,000
"20-year" Capital Expenditures (expect pipe & appurtenances to last 20+ years)	500	20	Years	10,000
Subtotal of Operations & Maintenance, Capital Expenditure, and Administration Costs (20-year project projection, after consolidation construction is complete)				935,001
Costs the School must pay (not part of this project) - Project Projection (20-years)				935,001

Consolidation Construction-Related Costs (DFA[2]-funded) + 20-year Project Projection (School-funded) = 20-Year Project Lifecycle Costs	1,941,931
Total + 20% contingency	2,330,317

Table 5

Engineer's Opinion of Probable Costs for Consolidation (Alternative #4)

CONSOLIDATION - ITEM	Cost per unit	# Units	Unit	COST ($)

Notes:

SqCWD - Soquel Creek Water District | gpd = gallons per day | SCC-RTC = Santa Cruz County Regional Transportation Commission

1 = The School's average daily demand water usage is approximately 4,947 gallons/day. For the corresponding cost estimate, we assumed that the School could reduce monthly usage to 3,000-gallons per day by installing water efficient fixtures and reducing irrigation

2 - DFA = Division of Financial Assurance (State Water Board)

3 - Booster pumps must be compatible with School's existing generator: 480-Volt; 3-phase; 90-amp; 60 hz. The generator is not compatible with "Delta" power connections

4 - School Funded = The School is to fund these items, as DFA will not pay for irrigation portion of distribution system. These various costs are presented near the bottom of this table in the "Water-Related Costs that Renaissance High School must pay" section

Table 6

Alternative Comparison Summary

Consideration	Alternative #2 Ion Exchange (I-X) Hexavalent Chromium Treatment System	Alternative #3 Install a New Well	Alternative #4 Consolidation with Soquel Creek Water District (SqCWD)
Meets Regulatory Compliance	Most likely	Likely Not	Yes
Meets O&M Needs	Most likely	Most likely	Yes
Financially Viable	Likely Not	Likely	Most likely
Long Term Sustainability	Likely Not	Likely Not	Most likely
Environmental Concerns	Minor to moderate; off-site disposal of "I-X concentrate waste stream"; land disturbance to install new distribution system, treatment system, and water storage tanks	Minor; land disturbance installing new well and associated piping and appurtenances	Minor; land disturbance installing new water main, distribution lines, and appurtenances. Potential contaminated associated with excavations near the railroad
Satisfy Public Concerns	Most likely	Most likely	Most likely
Water Rates	NA	NA	Yes, SqCWD water rates
Other considerations	The I-X treatment system produces a brine + concentrated hex-chromium waste stream that would not be suitable to flow into septic systems or the ground surface. This waste stream is expensive to dispose of.	The is no guarantee that we could find hex-chromium-free, acceptable water quality via a new well. It's possible that even with a new well, an expensive treatment system would still be needed.	SCWD provides acceptable water quality. This is the most sustainable, long term solution for the School
Construction-Related Costs (funded by DFA[1])	1,088,200	1,249,700	1,006,930
20-year project projection, after construction is complete (funded by School; not funded by DFA[1])	915,288	335,000	935,001
Construction-Related Costs (DFA[1]-funded) + 20-year Project Projection (School-funded) = Total Lifecycle Cost (20-years)	2,003,488	1,584,700	1,941,931
Total Lifecycle Cost (20-years) + 20% Contingency	2,404,186	1,901,640	2,330,317

Notes

NA = Not Applicable | SqCWD = Soquel Creek Water District

1 - DFA = Division of Financial Assurance (State Water Board)

APPENDIX A

Well Completion Reports (WCR)

TRIPLICATE
Owner's Copy

Well-2

Page 1 of 1

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 801259

Owner's Well No. 3

Date Work Began 6/13/2013 Ended 7/3/2013

Local Permit Agency Santa Cruz County Environmental Health Depart.

Permit No. 13-20 Permit Date 2/20/13

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) X VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD Mud Rotary FLUID Bentonite

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
0	6	Red sandy topsoil
6	22	Red clay
22	70	Red sand
70	110	1" x 1/4" gravel
110	310	Red sand w/small gravel 1/8 x 1/4"
310	316	White clay
316	328	Blue Clay
328	425	Red sand

TOTAL DEPTH OF BORING 425 (Feet)

TOTAL DEPTH OF COMPLETED WELL 420 (Feet)

WELL OWNER

Name Pajaro Valley Unified School District

Mailing Address 294 Green Valley Road

Watsonville, CA 95076
CITY STATE ZIP

WELL LOCATION

Address 11 Spring Valley Road

City Watsonville, CA 95076

County Santa Cruz

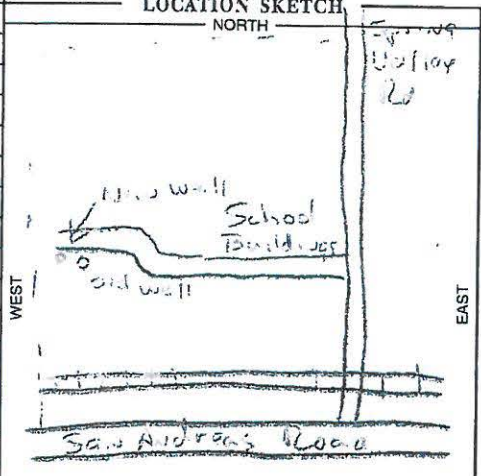
APN Book 046 Page 121 Parcel 08

Township ___ Range ___ Section ___

Latitude ___ DEG. ___ MIN. ___ SEC. NORTH

Longitude ___ DEG. ___ MIN. ___ SEC. WEST

LOCATION SKETCH



*Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. **PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

X NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

___ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic X Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER 116 (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL 116 (Ft.) & DATE MEASURED 7/3/13

ESTIMATED YIELD 300+ (GPM) & TEST TYPE airlift

TEST LENGTH 3 (Hrs.) TOTAL DRAWDOWN ? (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
0	64	26			X		A53-D	15.5	.250	
64	360	14-5/8	X				SDR17/PVC	7.4		
360	420	14-5/8	X				PVC	7.4	SDR17	

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
0	340	X			
340	425				8x16 Sand
0	64	X			

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
___ Other ___

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME LANDINO DRILLING COMPANY
(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS PO BOX 419 CITY Davenport, CA STATE 95017 ZIP

Signed [signature] WELL DRILLER/AUTHORIZED REPRESENTATIVE

DATE SIGNED 7/8/13

C-57 LICENSE NUMBER 334499

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

Well-1973

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

ORIGINAL CONFIDENTIAL LOG
File with DWR
Water Code Sec. 13752

Do Not Fill In

No 74189

State Well No. 11S/1E-34P2

Other Well No. 11S/1E-34-

(1) OWNER:
Name Santa Cruz Co. Office of Education
Governmental Center
Address 701 Ocean St Room 200
Santa Cruz, CA 95060

(2) LOCATION OF WELL:
County Santa Cruz Owner's number, if any 46-021-08
Township, Range, and Section Watsonville
Distance from cities, roads, railroads, etc. ¼ m. E. on Spring Vly Rd from San Andreas Rd--200' N. off road

(3) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) EQUIPMENT:
Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:
STEEL: X OTHER:
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
Seal 0	50	18"	10
0	205	10"	10

If gravel packed

Diameter of Bore	From ft.	To ft.
36"	0	50
18"	50	205

Size of shoe or well ring:
Size of gravel: #6 Sand
Describe joint Welded

(7) PERFORATIONS OR SCREEN: Johnson
Type of perforation or name of screen Irrigator

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
100	105			40 Slot
185	200			

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Grout

(9) WATER LEVELS:
Depth at which water was first found, if known 90 ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing ft.

(10) WELL TESTS: Tested with drill rig at time of drilling
Was pump test made? Yes [X] No [ ] If yes, by whom?
Yield: 100+ gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes [ ] No [X]
Was electric log made of well? Yes [ ] No [X] If yes, attach copy

(11) WELL LOG:
Total depth 205 ft. Depth of completed well 205 ft.
Formation: Describe by color, character, size of material, and structure

ft. to	ft.	
0-50'		Top Soil--Sand
50-80'		Fine Sand & Gravel
80-90'		Sand & Coarse Gravel
90-100'		Colored Gravel
100-115'		Clay & Sand
115-130'		Clay & Sand
130-140'		Sandstone
140-150'		Light Sandstone
150-205'		Fine Sand

Work started 8-1 1973 Completed 8-3 1973

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Maggiora Bros. Drilling, Inc.
(Person, firm, or corporation) (Typed or printed)

Address 595 Airport Blvd
Watsonville, CA 95076

[SIGNED] Martin J. Maggiora
(Well Driller)

License No. C-57-249957 Dated Sept. 11, 1973

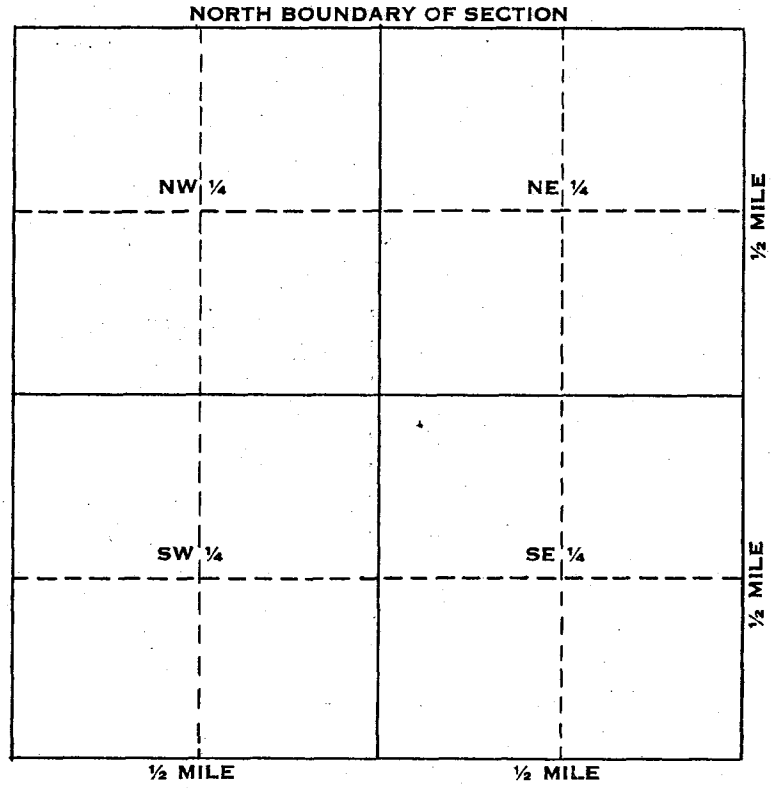
SKETCH LOCATION OF WELL ON REVERSE SIDE

CONFIDENTIAL LOG
Water Code Sec. 13752

DWR 188 (REV. 9-68)

25179-950 9-68 50M TRIP △D OSP

WELL LOCATION SKETCH

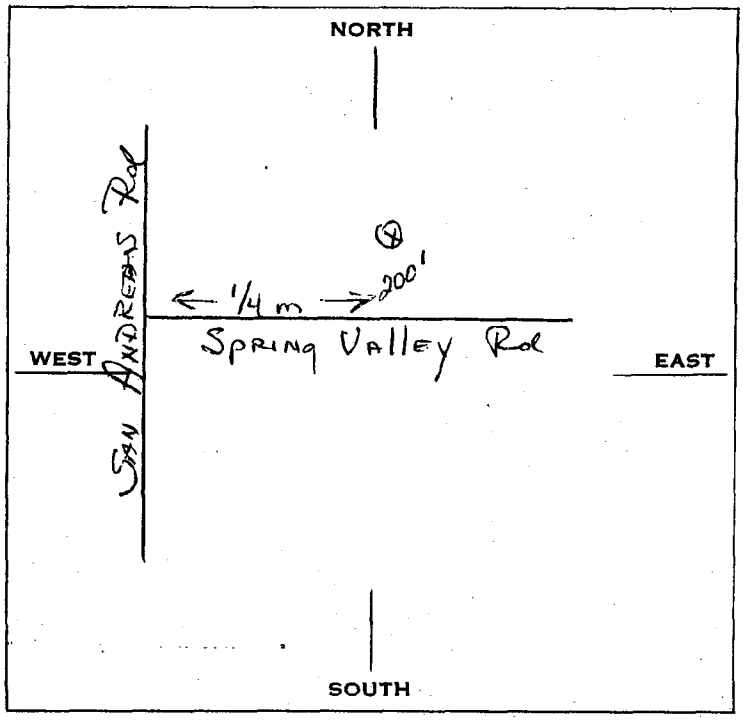


Township 11 N/S

Range 1 E/W

Section No. 34

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

11 Spring Vly Rd
Rm 14 S.
046-021-08

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

Do Not Fill In
No 74189
State Well No.
Other Well No.

(1) OWNER:
Name Santa Cruz Co. Office of Education
Governmental Center
Address 701 Ocean St Room 200
Santa Cruz, CA 95060

(2) LOCATION OF WELL:
County Santa Cruz Owner's number, if any 46-021-08
Township, Range, and Section Watsonville
Distance from cities, roads, railroads, etc. ¼ m. E. on Spring Vly Rd from San Andreas Rd--200' N. off road

(3) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) EQUIPMENT:
Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:
STEEL: X OTHER:
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
Seal 0	50	18"	10	36"	0	50
0	205	10"	10	18"	50	205

If gravel packed

Size of shoe or well ring:
Size of gravel: #6 Sand
Describe joint Welded.

(7) PERFORATIONS OR SCREEN: Johnson
Type of perforation or name of screen Irrigator

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
100	105			40 Slot
185	200			

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Grout

(9) WATER LEVELS:
Depth at which water was first found, if known 90 ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing ft.

(10) WELL TESTS: Tested with drill rig at time of drilling
Was pump test made? Yes [X] No [ ] If yes, by whom?
Est Yield: 100+ gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes [ ] No [X]
Was electrical log made of well? Yes [ ] No [X] If yes, attach copy

(11) WELL LOG:
Total depth 205 ft. Depth of completed well 205 ft.
Formations: Describe by color, character, size of material, and structure

ft. to	ft.	
0-50'		Top Soil--Sand
50-80'		Fine Sand & Gravel
80-90'		Sand & Coarse Gravel
90-100'		Colored Gravel
100-115'		Clay & Sand
115-130'		Clay & Sand
130-140'		Sandstone
140-150'		Light Sandstone
150-205'		Fine Sand

Seal At 130'

Work started 8-1 1973 Completed 8-3 1973

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Maggiora Bros. Drilling, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 595 Airport Blvd
Watsonville, CA 95076
[SIGNED] C. Martin Maggiora
(Well Driller)
License No. C-57-249957 Dated Sept. 11 19 7

... OF WELL ON REVERSE SIDE

046-021-08

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

ORIGINAL
File with DWR

Do Not Fill In
№ 74189
State Well No.
Other Well No.

(1) OWNER: Santa Cruz Co. Office of Education
Name Governmental Center
Address 701 Ocean St Room 200
Santa Cruz, CA 95060

(2) LOCATION OF WELL:
County Santa Cruz Owner's number, if any 46-021-08
Township, Range, and Section Watsonville
Distance from cities, roads, railroads, etc. ¼ m. E. on Spring Vly Rd from San Andreas Rd--200' N. off road

(3) TYPE OF WORK *(check)*:
New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check)*:
Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

(5) EQUIPMENT:
Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:
STEEL: X OTHER:
SINGLE ☒ DOUBLE ☐

If gravel packed

	From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
Seal	0	50	18"	10	36"	0	50
	0	205	10"	10	18"	50	205

Size of shoe or well ring: Size of gravel: #6 Sand
Describe joint Welded.

(7) PERFORATIONS OR SCREEN: Johnson
Type of perforation or name of screen Irrigator

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
100	105			40 Slot
185	200			

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes ☒ No ☐ To what depth 50 ft.
Were any strata sealed against pollution? Yes ☐ No ☒ If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Grout

(9) WATER LEVELS:
Depth at which water was first found, if known 90 ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing ft.

(10) WELL TESTS: Tested with drill rig at time of drilling
Was pump test made? Yes ☒ No ☐ If yes, by whom?
Est Yield: 100+ gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes ☐ No ☒
Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) WELL LOG:
Total depth 205 ft. Depth of completed well 205 ft.
Formation: *Describe by color, character, size of material, and structure*

ft. to ft.	
0-50'	Top Soil--Sand
50-80'	Fine Sand & Gravel
80-90'	Sand & Coarse Gravel
90-100'	Colored Gravel
100-115'	Clay & Sand
115-130'	Clay & Sand
130-140'	Sandstone
140-150'	Light Sandstone
150-205'	Fine Sand

Work started 8-1 1973 Completed 8-3 1973

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Maggiora Bros. Drilling, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 595 Airport Blvd
Watsonville, CA 95076
[SIGNED] (Well Driller)
License No. C-57-249957 Dated Sept. 11, 1973

... ON REVERSE SIDE

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES

WATER WELL DRILLERS REPORT

ORIGINAL
File with DWR

Do Not Fill In
No 74189
State Well No.
Other Well No.

(1) OWNER:
Name Santa Cruz Co. Office of Education
Governmental Center
Address 701 Ocean St Room 200
Santa Cruz, CA 95060

(2) LOCATION OF WELL:
County Santa Cruz Owner's number, if any 46-021-08
Township, Range, and Section Watsonville
Distance from cities, roads, railroads, etc. ¼ m. E. on Spring Vly Rd from San Andreas Rd--200' N. off road

(3) TYPE OF WORK (check):
New Well [X] Deepening [ ] Reconditioning [ ] Destroying [ ]
If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (check):
Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

(5) EQUIPMENT:
Rotary [X]
Cable [ ]
Other [ ]

(6) CASING INSTALLED:
STEEL [X] OTHER [ ]
SINGLE [X] DOUBLE [ ]

From ft.	To ft.	Diam.	Gage or Wall
Seal 0	50	18"	10
0	205	10"	10

If gravel packed

Diameter of Bore	From ft.	To ft.
36"	0	50
18"	50	205

Size of shoe or well ring:
Size of gravel: #6 Sand
Describe joint Welded.

(7) PERFORATIONS OR SCREEN: Johnson
Type of perforation or name of screen Irrigator

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
100	105			40 Slot
185	200			

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes [X] No [ ] To what depth 50 ft.
Were any strata sealed against pollution? Yes [ ] No [X] If yes, note depth of strata
From ft. to ft.
From ft. to ft.
Method of sealing Grout

(9) WATER LEVELS:
Depth at which water was first found, if known 90 ft.
Standing level before perforating, if known ft.
Standing level after perforating and developing ft.

(10) WELL TESTS: Tested with drill rig at time of drilling
Was pump test made? Yes [X] No [ ] If yes, by whom?
Est Yield: 100+ gal./min. with ft. drawdown after hrs.
Temperature of water Was a chemical analysis made? Yes [ ] No [X]
Was electric log made of well? Yes [ ] No [X] If yes, attach copy

(11) WELL LOG:
Total depth 205 ft. Depth of completed well 205 ft.
Formations: Describe by color, character, size of material, and structure

ft. to	ft.	
0	50'	Top Soil--Sand
50	80'	Fine Sand & Gravel
80	90'	Sand & Coarse Gravel
90	100'	Colored Gravel
100	115'	Clay & Sand
115	130'	Clay & Sand
130	140'	Sandstone
140	150'	Light Sandstone
150	205'	Fine Sand

Work started 8-1 1973 Completed 8-3 1973

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Maggiora Bros. Drilling, Inc.
(Person, firm, or corporation) (Typed or printed)
Address 595 Airport Blvd
Watsonville, CA 95076
[SIGNED] Martin J. Maggiora
(Well Driller)
License No. C-57-249957 Dated Sept. 11 1973

SKETCH LOCATION OF WELL ON REVERSE SIDE

APPENDIX B

Environmental Analysis of Engineering Alternatives

Environmental Analysis of Engineering Alternatives
Renaissance High School

The project is needed because the Renaissance High School (the School) current water source is a well, which contains hexavalent chromium (hex-chromium) concentrations above the drinking water "draft-status" Maximum Contaminant Level (MCL). The School's water system also does not have a water storage tank or a back-up generator. So, if the School loses power – they are quickly run out of water.

Four potential alternatives were considered to solve these problems:

- **Alternative 1** – No Action: Maintain existing system with no improvements. Water supply issues would not be addressed, and supply would still contain hex-chromium above the "draft-status" MCL
- **Alternative 2** – Treatment System for hex-chromium: install an Ion Exchange (I-X) treatment system to remove hex-chromium from the groundwater
- **Alternative 3** – Drill a new well: drill deeper to potentially find acceptable quality groundwater
- **Alternative 4** – Consolidation with the existing Soquel Creek Water District (SqCWD) water system

Each of the project alternatives result in varying temporary and permanent environmental impacts, which are compared in the following table. When Alternatives have differing impacts on an environmental factor, the alternative with less impact is preferred and marked with a (+).

Environmental Alternatives Analysis – Renaissance High School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Treatment System for hex-chromium	Alternative 3: Drill a new well	Alternative 4: Preferred Project - Consolidation
Aesthetics	No Impact	No Impact	No Impact	No Impact
Agricultural and Forestry Resources	No Impact	No Impact	No Impact	No Impact
Air Quality	(+) No Impact	Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be generally somewhat higher than existing, due to increased emissions from truck hauling Ion Exchange system "I-X concentrate" for off-site disposal.	Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be similar to existing.	Construction-generated air pollutant emissions likely less-than-significant. Operational emissions for the proposed Project would be similar to existing.
Biological Resources	No Impact	*In Process*	*In Process*	*In Process*

Environmental Alternatives Analysis – Renaissance High School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Treatment System for hex-chromium	Alternative 3: Drill a new well	Alternative 4: Preferred Project - Consolidation
Cultural and Tribal Resources	No Impact	*In Process*	*In Process*	*In Process*
Geology and Soils	No Impact	No Impact. No unique geologic features identified.	No Impact. No unique geologic features identified.	No Impact. No unique geologic features identified.
Greenhouse Gas Emissions	(+) No Impact	Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than-significant impact. Long term "I-X concentrate" off-haul emissions.	Project construction and operations would adhere to statewide efforts to minimize GHG emissions. Short-term impacts of construction would likely have a less-than-significant impact.	Project construction & operations would adhere to statewide efforts to minimize GHG emissions. Short-term construction impacts would likely have a less-than- significant impact.
Hazards and Hazardous Materials	No Impact	There is a potential that the "I-X concentrate" would be classified as hazardous waste	No Impact	No Impact

Environmental Alternatives Analysis – Renaissance High School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Treatment System for hex-chromium	Alternative 3: Drill a new well	Alternative 4: Preferred Project - Consolidation
Hydrology and Water Quality	(+) No Impact	The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant. I-X treatment system could increase aquifer salinity.	The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant.	The project would involve ground disturbance such as trenching that could result in temporary impacts on surface water quality. Accidental spill controls and best stormwater construction management practices would be implemented to ensure impacts remain less than significant.
Land Use and Planning	No Impact	No Impact	No Impact	No Impact
Mineral Resources	No Impact	The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a valuable mineral resource.	The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a valuable mineral resource.	The project area is not in an area of known mineral resource potential and would not result in the loss of availability of a valuable mineral resource.

Environmental Alternatives Analysis – Renaissance High School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Treatment System for hex-chromium	Alternative 3: Drill a new well	Alternative 4: Preferred Project - Consolidation
Noise	No Impact	During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent properties.	During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent properties.	During construction, a minor increase in noise levels is anticipated. Construction-related noise and ground borne vibration during construction would be temporary and occur only during daylight hours and have a less than significant impact on the adjacent properties.
Population and Housing	No Impact	The project would neither induce growth nor displace existing housing. No replacement housing would be required.	The project would neither induce growth nor displace existing housing. No replacement housing would be required.	The project would neither induce growth nor displace existing housing. No replacement housing would be required.
Public Services	No Impact – water supply does not meet Hex-chromium "draft" MCL	The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public	The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The	The project would not cause impacts on government facilities or negatively affect fire/police protection, schools, parks, or public facilities. The

Environmental Alternatives Analysis – Renaissance High School				
Environmental Factor	Alternative 1: No Action	Alternative 2: Treatment System for hex-chromium	Alternative 3: Drill a new well	Alternative 4: Preferred Project - Consolidation
		facilities. The improvements to the water facilities would ensure that the School had adequate drinking water supplies.	improvements to the water facilities would ensure that the School had adequate drinking water supplies, assuming hex-chromium-free water is found.	improvements to the water facilities would ensure that the School had adequate drinking water supplies.
Recreation	No Impact	There are no recreational facilities in or adjacent to the project area.	There are no recreational facilities in or adjacent to the project area.	There are no recreational facilities in or adjacent to the project area.
Transportation and Traffic	(+) No Impact	Potential minor disruption to on-site School parking lot traffic	Potential minor disruption to on-site School parking lot traffic	Disruption to local and on-site School traffic during pipeline installation
Utilities and Service Systems	No Impact	No Impact	No Impact	Consolidation would likely have no significant impact

Appendix B

Renaissance High
School Project Biological
Resource Report

This Page was Intentionally Left Blank

Renaissance High School Project
Biological Resources Report

Report Preparation Date	July 10, 2023
County of Santa Cruz Application Number	TBD
Assessor Parcel Numbers	046-02-108, 046-02-109
Physical Address	11 Spring Valley Road, Selva Beach, CA 95076
Applicant	Soquel Creek Water District
Reporting Biologist	Rikki Lougee Associate Environmental Scientist Denise Duffy & Associates, Inc. 947 Cass Street, Suite 5 Monterey, California 93940 (831) 373–4341

As a County-approved biologist, I hereby certify that this Biological Resources Assessment was prepared according to the Guidelines established by the County of Santa Cruz Planning Department and that the statements furnished in the report and associated maps are true and correct to the best of my knowledge and belief; and I further certify that I was present throughout the site visit(s) associated with this report.

Rikki Lougee, Associate Environmental Scientist
DENISE DUFFY & ASSOCIATES, INC.

This page was left intentionally blank

TABLE OF CONTENTS

APPENDICES

FIGURES

1.0 INTRODUCTION

Denise Duffy & Associates, Inc. (DD&A) was contracted by Weber, Hayes & Associates to prepare a Biological Resources Report for the Renaissance High School Project (project). The project is located at Renaissance High School (RHS) in La Selva Beach, Santa Cruz County, California (**Figure 1**). RHS's single water supply well draws water from the Pajaro Valley Groundwater Basin, which the Department of Water Resources classified as a high-priority groundwater basin in critical overdraft due to the ongoing threat of further seawater intrusion. RHS is proposing to consolidate their existing water system with Soquel Creek Water District (SCWD), which includes a new water main, water distribution lines, "jack & bore" steel casing installation under the railroad tracks, water meters, backflow prevention assemblies, a pressure pump, and associated appurtenances.

The existing SCWD water main currently terminates near the intersection of San Andreas Road and Sand Dollar Drive. A new, 12-inch diameter PVC C900 water main would extend from this intersection southeast approximately 800-feet along San Andreas Road. The proposed 12-inch diameter water main would terminate in front of the RHS property along San Andreas Road. Two, 2-inch diameter water distribution lines (domestic & irrigation) would extend perpendicularly from the 12-inch water main toward the RHS property. Two water meter boxes and two backflow prevention assemblies (i.e., one water meter box and one backflow prevention assembly for the domestic water line and one for the irrigation line) would be installed adjacent to the north side of San Andreas Road. The 12-inch water main would terminate approximately 4-feet southeast of the water distribution line connection points. A fire hydrant placed in this area would allow the 12-inch water main to be periodically flushed. A 12-inch blind flange would be placed on the southeast end of the 12-inch water main, which would help facilitate a water main extension at some point in the future.

From the water meter boxes and the backflow prevention assemblies mentioned above, the two water distribution lines would extend underneath the existing railroad tracks (the railroad tracks run parallel to and northeast of San Andreas Road). The two water distribution lines would be encased in a protective 50-feet long, 15.25-inch diameter steel casing that is centered on (and perpendicular to) the railroad tracks. The steel casing would be installed using "jack & bore", which is a trenchless steel casing installation method. This method consists of excavating one pit on each side of the railroad tracks spaced about fifty feet apart (i.e., one "sending" and one "receiving" pit). As the two water distribution lines exit the far side of the steel casing, they would extend onto the RHS property. The domestic distribution line would extend approximately 400-feet and tie into the RHS existing domestic water system located near the northwest side of Building E. The irrigation distribution line would extend approximately 550-feet and tie into the RHS existing irrigation system. A pressure pump would be placed on this distribution line to boost the water pressure.

This report describes the existing biological resources within and adjacent to the survey area, including any special-status species or sensitive habitats known or with the potential to occur within and adjacent to the site. This report also assesses the potential impacts to biological resources that may result from the project, and recommends appropriate avoidance, minimization, and mitigation measures necessary to reduce those impacts to a less-than-significant level in accordance with the California Environmental Quality Act (CEQA).

1.1 Summary of Results

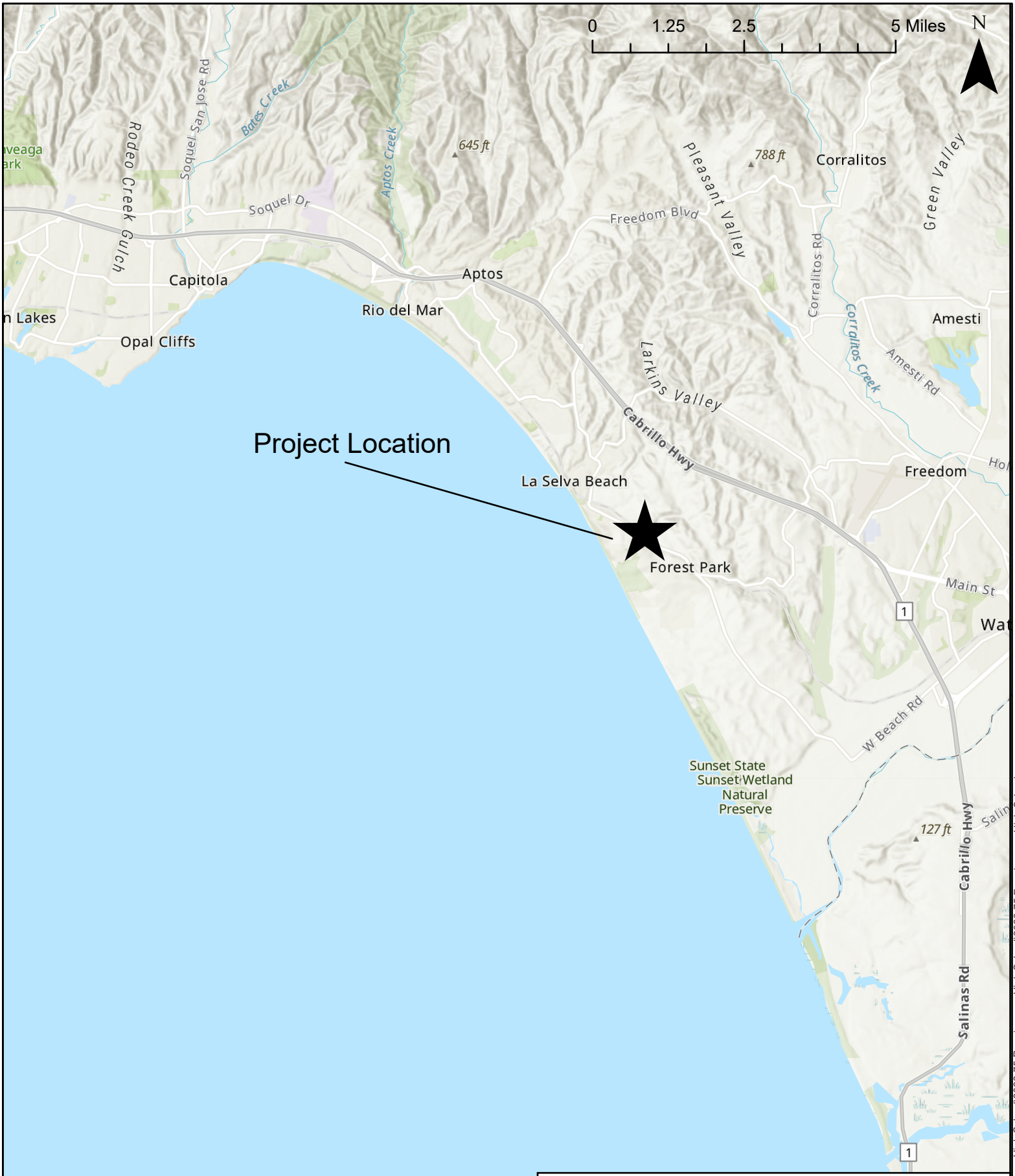
The project is located within the Coastal Zone, approximately 0.5 miles east of the Pacific Ocean. The survey area was provided by the project team and includes the RHS parcel and adjacent areas along San Andreas Road and Spring Valley Road that will be impacted by the project (**Figure 2**). Four vegetation types were observed within the undeveloped portions of the survey area: ruderal/disturbed, Monterey pine forest, oak woodland, and scrub. The remainder of the survey area consists of developed areas (paved areas and RHS facilities).

Multiple special-status wildlife species have the potential to occur within and adjacent to the survey area. Additionally, trees within and adjacent to the survey area may provide suitable nesting habitat for avian species. Sensitive habitats within the survey area include Critical Habitat for California red-legged frog (*Rana draytonii*; CRLF) and coast live oak woodland habitat. The following special-status species are known or have a moderate or high potential to occur within or immediately adjacent to the survey area:

- California tiger salamander (*Ambystoma californiense;* CTS) – FT/ST[1],
- Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum;* SCLTS) – FT/SE/FP,
- California red-legged frog (*Rana draytonii;* CRLF) – FT/CSC,
- San Francisco dusky footed woodrat (*Neotoma fuscipes annectens*) – CSC,
- Pallid bat (*Antrozous pallidus)* – CSC,
- Townsend's big-eared bat (*Corynorhinus townsendii)* – CSC, and
- Raptors and other protected avian species.

Impacts to these special-status wildlife species and their habitats would be considered significant under CEQA; however, mitigation is provided to reduce potential impacts to a less-than-significant level, including avoidance of nesting and roosting season, pre-construction surveys, a worker education program, coordination and consultation with regulatory agencies, and acquisition of regulatory permits. Published occurrence data within the proposed project areas and surrounding USGS quadrangles were evaluated to compile a table of special-status species known to occur in the vicinity of the survey area (**Appendix A**). All other species within the table are assumed "unlikely to occur" or have a low potential to occur for the species-specific reason presented in **Appendix A**.

[1] Status Definitions – CSC: California Species of Concern; FE: Federally Endangered; FT: Federally Threatened; SE: State Endangered; ST: State Threatened; SR: State Rare; FP: California Fully Protected Species; 1B: California Rare Plant Rank 1B.



Project Location

Denise Duffy & Associates, Inc. Planning and Environmental Consulting	Date 3/24/2023	Figure 1
	Scale 1:130,000	

Path: C:\GIS\2022-75 Renaissance High School\2022-75 Renaissance High School.aprx

Survey Area

Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

Date
3/24/2023

Scale
1:3,200

Figure
2

Path: C:\GIS\2022-75 Renaissance High School\2022-75 Renaissance High School\2022-75 Renaissance High School.aprx

2.0 METHODS

2.1 Personnel and Survey Dates

DD&A Assistant Environmental Scientist, Rikki Lougee, conducted a reconnaissance level survey of the survey area on March 20, 2023, to identify any special-status wildlife species or suitable habitat for these species, characterize vegetation types, and identify any sensitive habitats present within the survey area. Survey methods included walking the survey area using aerial maps and GPS to map biological resources. Available reference materials were reviewed prior to conducting the field survey (see "Data Sources" below). Data collected during the survey were used to assess the environmental conditions of the survey area and its surroundings, evaluate environmental constraints at the site and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts.

The survey area was surveyed for botanical resources following the applicable guidelines outlined in the U.S. Fish and Wildlife Service (USFWS) *Guidelines for Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants* (USFWS, 2000), the CDFW *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2018), and the California Native Plant Society (CNPS) *Botanical Survey Guidelines* (CNPS, 2001).

2.2 Data Sources

The primary literature and data sources reviewed to determine the occurrence or potential for occurrence of special-status species within and adjacent to the survey area include:

- Current agency status information from the USFWS and CDFW for species listed, proposed for listing, or candidates for listing as Threatened or Endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA), and those considered CDFW "species of special concern" (CDFW, 2023a);
- CDFW's California Natural Diversity Database (CNDDB) occurrence reports for the Watsonville West quadrangle and the surrounding quadrangles (Laurel, Loma Prieta, Mt. Madonna, Soquel, Watsonville East, Moss Landing, and Prunedale) (CDFW, 2023b; **Appendix B**);
- The USFWS's Information for Planning and Consulting (IPaC) Resource List (USFWS, 2023a: **Appendix C**); and
- The CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2023).

From these resources, a list of special-status plant and wildlife species known or with the potential to occur within and adjacent to the survey area was created (**Appendix A**). The list presents these species along with their legal status, habitat requirements, and a brief statement of the likelihood to occur.

Botany

Vegetation types identified in *A Manual of California Vegetation* (Sawyer et.al., 2009) were utilized to determine if vegetation types identified as sensitive on CDFW's *California Natural Communities List* (CDFW, 2023c) are present within the survey area. Scientific nomenclature for plant species identified within this document follows *The Jepson Manual: Vascular Plants of California, Edition 2* (Baldwin et al., 2012); common names follow *The Plants of Monterey County: An Illustrated Field Key* (Matthews and

Mitchell, 2015). The California Invasive Plant Council (Cal-IPC) Inventory (Cal-IPC, 2023) was reviewed to determine if any invasive plant species are present within the survey area.

Wildlife

The wildlife literature and data sources were reviewed include CDFW reports on special-status wildlife (Remsen, 1978; Williams, 1986; Jennings and Hayes, 1994; Thelander, 1994), California Wildlife Habitat Relationships Program species-habitat models (Zeiner et al., 1988; and Zeiner et al., 1990), and general wildlife references (Stebbins, 1972, 1985, and 2003).

2.3 Special-Status Species

Special-status species are those plants and animals that have been formally listed or proposed for listing as Endangered or Threatened or are Candidates for such listing under ESA or CESA. Listed species are afforded legal protection under the ESA and CESA. Species that meet the definition of rare or endangered under the CEQA Section 15380 are also considered special-status species. Animals identified as "species of special concern" (most of which are species whose breeding populations in California may face extirpation if current population trends continue) on the CDFW's "Special Animals" list (CDFW, 2023a) meet this definition and are typically provided management consideration through the CEQA process, although they are not legally protected under the ESA or CESA.

Plants listed as rare under the California Native Plant Protection Act (CNPPA) or included in CNPS California Rare Plant Ranks (CRPR; formerly known as CNPS Lists) 1A, 1B, 2A, and 2B are also treated as special-status species as they meet the definitions of Sections 2062 and 2067 of the CESA and in accordance with CEQA Guidelines Section 15380.[2] In general, CDFW requires that plant species on CRPR 1A (Plants presumed extirpated in California and Either Rare or Extinct Elsewhere), CRPR 1B (Plants rare, threatened, or endangered in California and elsewhere), CRPR 2A (Plants presumed extirpated in California, but more common elsewhere), and CRPR 2B (Plants rare, threatened, or endangered in California, but more common elsewhere) of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2023) be fully considered during the preparation of environmental documents relating to CEQA.[3] In addition, species of vascular plants, bryophytes, and lichens listed as having special-status by the CDFW are considered special-status plant species (CDFW, 2023b).

Raptors (e.g., eagles, hawks, and owls) and their nests are protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto." In addition, fully protected species under the Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal species. Species with no formal special-status designation but thought by experts to be rare or in serious decline may also be considered special-status animal species in some cases, depending on project-specific analysis and relevant, localized conservation needs or precedence.

[2] CNPS initially created five CRPR to categorize degrees of concern; however, to better define and categorize rarity in California's flora, the CNPS Rare Plant Program and Rare Plant Program Committee have developed the new CRPR 2A and CRPR 2B.

[3] Species on CRPR 3 (Plants about which we need more information - a review list) and CRPR 4 (Plants of limited distribution - a watch list) may, but generally do not, meet the definitions of Sections 2062 and 2067 of CESA, and are not typically considered in environmental documents relating to CEQA.

2.4 Sensitive Habitats

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, and unusual or regionally restricted habitat types. Vegetation types considered sensitive include those identified as sensitive on the CDFW's *California Natural Communities List* (i.e., those habitats that are rare or endangered within the borders of California) (CDFW, 2023c) and those that are occupied by species listed under ESA or are critical habitat in accordance with ESA, and those that are defined as ESHA under the CCA. Specific habitats may also be identified as sensitive in city or county general plans or ordinances. Sensitive habitats are regulated under federal regulations (such as the Clean Water Act [CWA] and Executive Order 11990 – Protection of Wetlands), state regulations (such as CEQA and the CDFW Streambed Alteration Program), or local ordinances or policies (such as city or county tree ordinances and general plan policies).

2.5 Regulatory Setting

The following regulatory discussion describes the laws that may be applicable to the project.

Federal Regulations

Federal Endangered Species Act

Provisions of the ESA of 1973 (16 USC 1532 et seq., as amended) protect federally Listed Threatened or Endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register. The ESA is administered by the USFWS or National Marine Fisheries Service (NMFS). In general, NMFS is responsible for the protection of ESA-Listed marine species and anadromous fish, whereas other listed species are under USFWS jurisdiction.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered or threatened. Take, as defined by ESA, is "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm is defined as "any act that kills or injures the fish or wildlife…including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife." In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for incidental take of a federally listed fish or wildlife species, take of listed species can be authorized through either the Section 7 consultation process for federal actions or a Section 10 incidental take permit process for non-federal actions. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. The USFWS is responsible for overseeing compliance with the MBTA.

State Regulations

California Endangered Species Act

CESA was enacted in 1984. The California Code of Regulations (Title 14, §670.5) lists animal species considered Endangered or Threatened by the State. Section 2090 of CESA requires State agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an Endangered species or a Threatened species. “Take” is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” A Section 2081 Incidental Take Permit from the CDFW may be obtained to authorize “take” of any State Listed species.

California Native Plant Protection Act

The CNPPA of 1977 directed the CDFW to carry out the legislature’s intent to “preserve, protect and enhance rare and Endangered plants in the State.” The CNPPA prohibits importing rare and Endangered plants into California, taking rare and Endangered plants, and selling rare and Endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA; however, these plants may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research.

California Fish and Game Code

Birds: Section 3503 of the Fish and Game Code states that it is “unlawful to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal MBTA. Section 3800 prohibits take of nongame birds.

Fully Protected Species: The classification of fully protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (§5515), mammals (§4700), amphibians and reptiles (§5050), and birds (§3511). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Species of Special Concern: As noted above, the CDFW also maintains a list of wildlife “species of special concern.” Although these species have no legal status, the CDFW recommends considering these species during analysis of project impacts to protect declining populations and avoid the need to list them as Endangered in the future.

California Coastal Act

The California Coastal Commission (CCC) was established by voter initiative in 1972 (Proposition 20) and later made permanent by the California State Legislature through adoption of the California Coastal Act of

1976 (CCA). The CCC, in partnership with coastal cities and counties, plans and regulates the use of land and water in the coastal zone. California's coastal zone generally extends 1,000 yards inland from the mean high tide line. In significant coastal estuarine habitat and recreational areas, it extends inland to the first major ridgeline or five miles from the mean high tide line, whichever is less. In developed urban areas, the boundary is generally less than 1,000 yards. Development activities, which are broadly defined by the CCA to include (among others) construction of buildings, divisions of land, and activities that change the intensity of use of land or public access to coastal waters, generally require a Coastal Development Permit (CDP) from either the CCC or the local government if a Local Coastal Program (LCP) has been certified. After certification of an LCP, coastal development permit authority is delegated to the appropriate local government, but the CCC retains original permit jurisdiction over certain specified lands (such as tidelands and public trust lands). The Commission also has appellate authority over development approved by local governments in specified geographic areas as well as certain other developments. A CDP is required in addition to any other permit required from resource agencies.

The CCC or the local government may designate areas of rare or unique biological value, such as wetland and riparian habitat and habitats for special-status species, as ESHA. Section 30107.5 of the CCA defines an "environmentally sensitive area" as any area in which plant or animal life or their habitat are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments. Development is restricted within the coastal zone and prohibited within designated ESHA, unless the development is coastal dependent and does not have a significant effect on the resources. Section 30240 of the CCA states that "environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas." This section also states that "development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas."

In Santa Cruz County, the Coastal Zone extends approximately five miles inland from the North Coast and is regulated under the County's Local Coastal Program. In accordance with Santa Cruz County Code (SCCC) Section 13.20, any person who wishes to do any sort of land development must obtain a Level 5 development permit from the County. "Development" includes:

- Construction, reconstruction, size alteration, or demolition of a structure,
- Grading, removing, placement, and extraction of any earth material,
- Subdivision and minor land division,
- Change in the density or intensity of land use, and
- Harvesting of major vegetation, except for agriculture and timber harvesting.

California Essential Habitat Connectivity Project

In 2010, CDFW and the California Department of Transportation (Caltrans) commissioned a team of consultants to produce a statewide assessment of essential habitat connectivity using the best available science, data sets, spatial analyses, and modeling techniques. The goal was to identify Essential Habitat Connectivity Area (EHCA), which are large remaining blocks of intact habitat or natural landscape and model linkages between them that need to be maintained, particularly as corridors for wildlife. Over sixty

federal, state, local, tribal, and non-governmental organizations collaborated in the creation of a statewide wildlife habitat connectivity map using a GIS-based modeling approach, an assessment of the biological value of identified connectivity areas, and a strategic plan that helps varied end users interpret and use the statewide map and outlines a methodology necessary for completing connectivity analyses at finer spatial scales. The project site is not located within an EHCA.

Local Regulations

Sensitive Habitat Protection

Santa Cruz County Code (SCCC) Section 16.32 regulates the disturbance of biological communities which are rare or especially valuable because of their special nature or role in an ecosystem, and which could be easily disturbed or degraded by human activity. These communities include but are not limited to oak woodlands. Because the survey area is within the Coastal Zone, oak woodland habitat also constitutes ESHA under the CCA. Per SCCC Section 16.32.060, no person shall commence any development activity within an area of biological concern until a biotic approval has been issued or unless such activity has been reviewed for biological concerns concurrently with the review of a development or land-division application.

Tree Protection

Per SCCC Section 16.34, a tree removal permit from the County Planning Director is required to remove or damage significant trees, as defined in SCCC Section 16.34.030, in the County's Coastal Zone. Per SCCC Section 16.32, a tree removal permit is also required to remove or damage any tree located in a sensitive habitat, as defined by SCCC Section 16.32.040.

This page was left intentionally blank

3.0 RESULTS

3.1 Vegetation Types

The survey results include mapping and quantification of the acreage of four vegetation types within the survey area (**Figure 3; Table 1**). The remainder of the survey area consists of developed areas. A description of these vegetation types can be found below along with the identification of the presence or potential presence of special-status species within each type. The following is the acreage of each vegetation type within the survey area:

Table 1 – Quantification of Vegetation Types in the Survey Area

Vegetation Type	Acreage
Ruderal/Disturbed	9.3
Monterey Pine Forest	3.0
Oak Woodland	3.6
Scrub	0.9

3.1.1 Developed

- *A Manual of California Vegetation* classification(s): None
- *California Natural Communities List*: Not listed
- *Sensitive Habitat as Defined by SCCC Section 16.32: Not Sensitive*

Approximately 6.3 acres of the survey area is developed, including paved roads, parking areas, and structures (**Figure 3**). No special-status wildlife species were observed within the developed areas; however, raptors and other protected avian species may nest within trees present in developed areas.

3.1.2 Ruderal/Disturbed

- *A Manual of California Vegetation* classification(s): None
- *California Natural Communities List*: Not listed
- *Sensitive Habitat as Defined by SCCC Section 16.32:* Not Sensitive

Ruderal and disturbed areas are those areas which have been subject to historic and ongoing disturbance by human activities and are devoid of vegetation or dominated by non-native and/or invasive weed species. Ruderal areas within the survey area include the RHS field and garden, the Union Pacific railroad tracks adjacent to RHS, landscaped areas, and other disturbed areas (**Figure 3**). These areas are dominated by non-native weedy species, are regularly maintained, or are devoid of vegetation. Dominant species observed include slender wild oat (*Avena barbata*), red-stemmed filaree (*Erodium cicutarium*), ribwort plantain (*Plantago lanceolata*), soft chess (*Bromus hordeaceus*), hairy cats-ear (*Hypochaeris radicata*), velvet grass (*Holcus lanatus*), wild radish (*Raphanus sativus*), black mustard (*Brassica nigra*), Bermuda buttercup (*Oxalis pes-caprae*), and bur clover (*Medicago polymorpha*). Approximately 9.3 acres of ruderal and disturbed habitat is present within the survey area.

Ruderal and disturbed areas provide only low-quality habitat for plants and wildlife. Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), scrub jay (*Aphelocoma californica*), European starling (*Sturnus vulgaris*), western fence lizard (*Sceloporus occidentalis*), and rock dove (*Columba livia*). Protected avian species, including raptors, may nest within trees present throughout this habitat type. CTS may utilize ruderal areas as upland habitat where small mammal burrows are present, and CRLF have the potential to disperse through ruderal areas.

3.1.3 Monterey Pine Forest

- *A Manual of California Vegetation* classification(s): Monterey cypress – Monterey pine woodland stand (*Hesperocyparis macrocarpa – Pinus radiata* forest and woodland alliance)
- *California Natural Communities List*: Sensitive
- *Sensitive Habitat as Defined by SCCC Section 16.32*: Not Sensitive

Monterey pines occur in three disjunct populations throughout California: southern San Mateo County, the Monterey Peninsula, and the Cambria-San Simeon area; however, this species is widely planted throughout California. Monterey pine forest habitat in the survey area is comprised of a closed canopy of Monterey pine (*Pinus radiata*) with a limited understory due to a thick layer of duff and fallen trees on the forest floor. Where present, understory vegetation includes coast live oak (*Quercus agrifolia*) seedlings, and non-native annual plant species such as Italian thistle (*Carduus pycnocephalus*) and annual grasses. Blue gum (*Eucalyptus globulus*) trees are present on the edges of Monterey pine forest habitat. Approximately 3.0 acres of Monterey pine forest habitat is present within the survey area (**Figure 3**).

Monterey pine forest habitat may provide suitable habitat for black-tailed deer (*Odocoileus hemionus columbianus*), raccoon, red-tailed hawk (*Buteo jamaicensis*), scrub jay, chestnut-backed chickadee (*Poecile rufescens*), and American robin (*Turdus migratorius*). Monterey pine forest habitat may provide upland habitat for SCLTS and roosting habitat for special-status bat species. Multiple woodrat nests were observed within this habitat during the March 2023 reconnaissance level survey.

Monterey pine is a CNPS List 1B species and Monterey pine forest is a sensitive habitat as identified on CDFW's *California Natural Communities List*; however, the survey area is outside the native range of the species (CDFW, 2023b). Monterey pine forest located outside of the native range are typically not given the same management considerations and therefore are not considered sensitive.

3.1.4 Oak Woodland

- *A Manual of California Vegetation* classification(s): Coast live oak woodland (*Quercus agrifolia* woodland alliance)
- *California Natural Communities List*: Not sensitive
- *Sensitive Habitat as Defined by SCCC Section 16.32*: Sensitive

Coast live oak woodlands occur in the more mesic areas of coastal California from Sonoma County south into Baja California. They are dominated by open to nearly closed canopies of coast live oak. The oak woodland habitat within the survey area consists of a relatively open canopy of coast live oak with Monterey pine and golden wattle (*Acacia longifolia*) scattered throughout. Non-dominant plant species present within this habitat include coyote brush (*Baccharis pilularis*) and coffee berry (*Frangula californica*). The oak

woodland habitat on either side of the Union Pacific railroad tracks is highly disturbed by the presence of non-native species including jubata grass (*Cortaderia jubata*) and golden wattle. Approximately 3.6 acres of coast live oak woodland is present within the survey area (**Figure 3**).

Oak woodland is an important habitat for many wildlife species. Oaks provide nesting sites for many avian species and cover for a variety of mammals. Acorns provide an important food source for acorn woodpecker (*Melanerpes formicivorus*), western scrub jay, and black-tailed deer. Other common wildlife species found in coast live oak woodland are Nuttall's woodpecker (*Picoides nuttallii*), northern flicker (*Colaptes auratus*), bobcat (*Lynx rufus*), and coyote (*Canis latrans*). Coast live oak woodland habitat may provide upland habitat for SCLTS and roosting habitat for special-status bat species. Multiple woodrat nests were observed within this habitat during the March 2023 reconnaissance level survey. Coast live oak woodlands are not considered sensitive on the *California Natural Communities List;* however, this habitat is considered sensitive under the County's Sensitive Habitat Protection Ordinance (SCCC Chapter 16.32.40). Coast live oak woodland within the project site occurs within the Coastal Zone and, therefore, is considered ESHA.

3.1.5 Scrub

- *A Manual of California Vegetation* classification(s): Coyote brush scrub (*Baccharis pilularis* shrubland alliance)
- *California Natural Communities List*: Not sensitive
- *Sensitive Habitat as Defined by SCCC Section 16.32*: Not Sensitive

The structure of plant associations that comprise scrub habitat typically consist of low to moderate-sized shrubs with sclerophyllous leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system. Dominant species within scrub habitat in the survey area include coyote brush, coffee berry, and poison oak (*Toxicodendron diversilobum*). The understory vegetation includes mugwort (*Artemisia douglasiana*), California blackberry (*Rubus ursinus*), and Italian thistle. Approximately 0.9 acres of scrub habitat occur within the survey area (**Figure 3**).

Though vegetative productivity is lower in scrub habitat than in adjacent chaparral habitats associated with it, scrub habitat appears to support roughly the same number of vertebrate species (Gray, 1982; Stebbins, 1978). Common wildlife observed within scrub habitat include scrub jay, chestnut-backed chickadee, western fence lizard, and brush rabbit (*Sylvilagus bachmani*). Scrub habitat within the survey area may provide upland habitat for SCLTS and roosting habitat for special-status bat species. Multiple woodrat nests were observed within this habitat during the March 2023 reconnaissance level survey.

3.2 Sensitive Habitats

The eastern half of the survey area lies within Critical Habitat Mapping Unit SCZ-2 for CRLF, which the Service designated on April 13, 2006 (71 FR 19244-19346) and revised on March 17, 2010 (75 FR 12816-12959). Additionally, coast live oak woodland is considered a sensitive habitat under SCCC Section 16.32.040. Development within this habitat is subject to the approval of the County. Coast live oak woodland within the project site occurs within the Coastal Zone and, therefore, is considered ESHA.

3.3 Special-Status Species

Published occurrence data within the proposed project areas and surrounding USGS quadrangles were evaluated to compile a table of special-status species known to occur in the vicinity of the survey area (**Appendix A**).[4] Each of these species was evaluated for their likelihood to occur within and immediately adjacent to the survey area. The special-status species that are known to or have been determined to have a moderate to high potential to occur within or immediately adjacent the survey area are discussed below. All other species within the table are assumed "unlikely to occur" or have a low potential to occur for the species-specific reasons presented in **Appendix A**.

Special-Status Wildlife Species

California Tiger Salamander

The CTS is a federal and state threatened species. The CTS is a large, stocky salamander most commonly found in annual grassland habitat, but also occurring in the grassy understory of valley-foothill hardwood and chaparral habitats, and uncommonly along stream courses in valley-foothill riparian habitats (USFWS, 2004). Adults spend most of their lives underground, typically in burrows of ground squirrels and other animals (USFWS, 2004). The California tiger salamander has been eliminated from an estimated 55 percent of its documented historic breeding sites. Currently, about 150 known populations of California tiger salamanders remain. The CTS persists in disjunct remnant vernal pool complexes in Sonoma County and Santa Barbara County, in vernal pool complexes and isolated stockponds scattered along a narrow strip of rangeland on the fringes of the Central Valley from southern Colusa County south to northern Kern County, and in sag ponds and human maintained stockponds in the coast ranges from the San Francisco Bay Area south to the Temblor Range.

Above-ground migratory and breeding activity may occur under suitable environmental conditions from mid-October through May. Adults may travel long distances between upland and breeding sites; adults have been found two kilometers (1.24 miles) from breeding sites (USFWS, 2004). Breeding occurs from November to February, following relatively warm rains (Stebbins, 2003). The CTS breeds and lays eggs primarily in vernal pools and other temporary rainwater ponds. Permanent human-made ponds are sometimes utilized if predatory fish are absent; streams are rarely used for reproduction. Eggs are laid singly or in clumps on both submerged and emergent vegetation and on submerged debris in shallow water (Stebbins, 1972; Jennings and Hayes, 1994). Males typically spend 6-8 weeks at breeding ponds, while females typically spend only 1-2 weeks (Loredo et al., 1996). Eggs hatch within 10-14 days (USFWS, 2004) and a minimum of 10 weeks is required to complete development through metamorphosis (Jennings and Hayes, 1994), although the larval stage may last up to six months and some larvae in Contra Costa and Alameda Counties may remain in their breeding sites over the summer (USFWS, 2004).

The CNDDB reports 36 occurrences of CTS within the seven quadrangles evaluated. The nearest CNDDB occurrence is located approximately 0.3 miles (0.5 km) from the survey area in Ellicott Pond, a known CTS breeding resource (**Figure 4**). Ellicott Pond is located within Ellicott Slough National Wildlife Refuge, which is located adjacent to the survey area and is managed for the protection of multiple special-status species, including CTS (USFWS, 2023b). One additional occurrence is located within the known dispersal distance for this species (1.4 miles [2.2 km]) of the survey area, located approximately 1.3 miles (2.1 km)

[4] The USGS quadrangles in which published CNDDB data was searched included Laurel, Loma Prieta, Mt. Madonna, Soquel, Watsonville West, Watsonville East, Moss Landing, and Prunedale.

from the survey area. No suitable breeding habitat is present within the survey area; however, suitable upland habitat for CTS is present within all undeveloped areas of the survey area where small mammal burrows are present. Therefore, this species has a moderate potential to occur within the survey area.

Santa Cruz Long-Toed Salamander

The SCLTS is listed as a federal and state Endangered species and is also a California fully protected species. The SCLTS is a subspecies of long-toed salamander (*Ambystoma macrodactylum*) that occurs in a small number of restricted localities in Santa Cruz and Monterey Counties. This subspecies is known to use several different plant community types for upland habitat, including riparian, willow thickets, coast live oak woodlands, dense coastal scrub, coastal chaparral, and Monterey pine forest (USFWS, 1999). Adults use upland areas immediately adjacent to their breeding site, as well as the surrounding areas up to 0.6 km; however, SCLTS has been recorded as far as 1.6 km (1.0 mi) from the nearest breeding site (Ruth and Tollestrup, 1973). For much of the year SCLTS find refuge in cool, moist places, such as small mammal burrows or under decayed wood piles, logs, or thick leaf litter. The upland habitat must also support an abundance of prey. Adult and sub-adult SCLTS eat a variety of invertebrates, including earthworms, slugs, isopods, beetles, and spiders.

Adult SCLTS migrate to breeding sites at night during rain events between November and March, with peak activity between December and February. During migration, the SCLTS may be found under surface objects such as rocks or logs near the breeding site. Ideal breeding locations appear to be shallow, temporary, freshwater ponds that lack fish and hold water at least through the spring months; however, they may also breed in permanent waterbodies, such as sloughs. Males often arrive at breeding sites before females and may stay longer. Females lay approximately 300 eggs singly on submergent aquatic vegetation in shallow water, approximately five to eight cm (2-3.2 inches) below the surface. Eggs hatch within 15-30 days and the larvae metamorphose between 90 and 145 days after hatching, depending on water temperature and food availability (USFWS, 1999). Terrestrial juveniles may spend the entire first summer of life in mammal burrows or under surface objects in the immediate vicinity of the breeding pond.

The CNDDB reports 26 occurrences of SCLTS within the quadrangles reviewed, one of which overlaps the eastern boundary of the survey area (**Figure 4**). This occurrence is mapped generally as the Ellicott Slough National Wildlife Refuge, which was established in 1975 to protect habitat for this species and includes two of the 24 known breeding populations of this species (USFWS, 2023b). SCLTS is known to occur in Ellicott Pond, which is located approximately 0.5 miles (0.7 km) from the survey area and is within the known dispersal distance for this species (1.0 miles [1.6 km]). Two additional CNDDB occurrences are located within the dispersal distance of this species. No suitable breeding habitat is present within the survey area; however, suitable upland habitat for SCLTS is present within the oak woodland, scrub, and Monterey pine habitats within the survey area. Therefore, this species has a moderate potential to occur within the survey area.

California Red-Legged Frog

The CRLF is listed as a federally Threatened and is also a CDFW species of special concern (USFWS, 1996). The CRLF is the largest native frog in California (44-131 mm snout-vent length) and was historically widely distributed in the central and southern portions of the state (Jennings and Hayes, 1994). Adults generally inhabit aquatic habitats with riparian vegetation, overhanging banks, or plunge pools for cover, especially during the breeding season (Jennings and Hayes, 1988). They may take refuge in small mammal burrows, leaf litter, or other moist areas during periods of inactivity or to avoid desiccation (Rathbun et al.,

1993; Jennings and Hayes, 1994). Radiotelemetry data indicates that adults engage in straight-line breeding season movements irrespective of riparian corridors or topography and they may move up to two miles between non-breeding and breeding sites (Bulger et al., 2003). During the non-breeding season, a wider variety of aquatic habitats are used including small pools in coastal streams, springs, water traps, and other ephemeral water bodies (USFWS, 1996). CRLF may also move up to 300 feet from aquatic habitats into surrounding uplands, especially following rains, where individuals may spend days or weeks (Bulger et al., 2003).

This species requires still or slow-moving water during the breeding season where it can deposit large egg masses, which are most often attached to submergent or emergent vegetation. Breeding typically occurs between December and April depending on annual environmental conditions and locality. Eggs require 6 to 12 days to hatch, and metamorphosis generally occurs after 3.5 to 7 months, although larvae are also capable of over-wintering. Following metamorphosis, generally between July and September, juveniles are 25-35 mm in size. Juvenile CRLF appear to have different habitat needs than adults. Jennings and Hayes (1988) recorded juvenile frogs mostly from sites with shallow water and limited shoreline or emergent vegetation. Additionally, it was important that there be small one-meter breaks in the vegetation or clearings in the dense riparian cover to allow juveniles to sun themselves and forage, but to also have close escape cover from predators. Jennings and Hayes also noted that tadpoles have different habitat needs and that in addition to vegetation cover, tadpoles use mud. It is speculated that CRLF larvae are algae grazers, however, foraging larval ecology remains unknown (Jennings, et al., 1993).

It has been shown that occurrences of CRLF are negatively correlated with presence of non-native bullfrogs (Jennings and Hayes, 1986 and 1988), although both species are able to persist at certain locations, particularly in the coastal zone. It is estimated that CRLF has disappeared from approximately 75% of its former range and has been nearly extirpated from the Sierra Nevada, Central Valley, and much of southern California (USFWS, 1996).

The CNDDB includes 61 occurrences of CRLF within the seven quadrangles evaluated, the nearest of which is located approximately 0.3 miles (0.5 km) from the survey area in Ellicott Pond, a known CRLF breeding resource (**Figure 4**). Ellicott Pond is located within Ellicott Slough National Wildlife Refuge, which is located adjacent to the survey area and is managed for the protection of multiple special-status species, including CRLF (USFWS, 2023b). Two additional occurrences are located within the known dispersal distance (1.0 mile [1.6 km]) of the survey area, located approximately 0.4 miles (0.6 km) and 0.9 miles (1.5 km) from the survey area. No suitable breeding or upland habitat is present within the survey area; however suitable dispersal habitat is present within all undeveloped portions of the survey area. Additionally, approximately half of the survey area is within Critical Habitat Mapping Unit SCZ-2 (**Figure 4**). Therefore, this species has a moderate potential to occur within the survey area.

San Francisco dusky-footed woodrat

The San Francisco dusky-footed woodrat is a CDFW species of special concern. This species is found in chaparral, hardwood, conifer, riparian woodlands, and mixed forests, typically in densely wooded areas with dense undergrowth. This species builds its nest with debris on the ground or in trees; nests tend to be in areas that are shaded, relatively cool, and provide cover. Nests may be used by many generations over several years (Carraway, 1991).

There is one CNDDB occurrence of this species within the quadrangles reviewed, located approximately 12 miles from the survey area. However, approximately one dozen woodrat nests were observed within the

survey area during the March 2023 reconnaissance-level survey. Nests were observed on the ground and in trees/shrubs within Monterey pine forest, oak woodland, and scrub habitats. Therefore, this species is present within the survey area.

Pallid bat

The pallid bat (*Antrozous pallidus*) is a CDFW species of special concern and is a year-round resident in California. This species of bat occurs in a wide variety of habitats including grasslands, shrublands, arid desert areas, oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California and forests ranging from sea level up through mixed conifer forests. Pallid bats are most common in open, dry habitats with rocky areas for roosting. Day roosts of this species include caves, crevices, mines, and occasionally hollow trees and buildings. This species seems to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Pallid bats make use of similar structures for night roosting and will use more open sites such as eaves, awnings, and open areas under bridges for feeding roosts. Pallid bats feed on large insects (20 to 70 mm in length). Foraging takes place over open ground, at heights generally not greater than 7.5 feet, although prey is most often caught on the ground. Jerusalem crickets, scorpions and beetles make up most of the diet of pallid bats in central California. Copulation occurs in the fall, October through December. Females store the sperm and ovulation occurs in the following spring. Parturition timing is determined by local climate and embryonic development usually takes about 9 weeks with birth occurring in May or June. Twins are the norm in northern California but in other areas they are known to have triplets. Maternity colonies range from 20 to 200 individual adult bats. Males roost in much smaller groupings (Hermanson and O'Shea, 1983).

The CNDDB reports two non-specific occurrences of the pallid bat within the quadrangles reviewed, the nearest of which is a historical (1928) occurrence located approximately eight miles from the survey area. The other occurrence, reported in 2003, is located approximately 12 miles from the project site. Suitable foraging habitat is present and trees in the wooded habitats of the survey area provide suitable roosting habitat for this species. Therefore, this species has a moderate potential to occur within the survey area.

Townsend's big-eared bat

The Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) is a CDFW species of special concern. The Townsend's big-eared bat is a year-round resident in California occurring from low desert to mid-elevation montane habitats. It is found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Townsend's big-eared bats typically roost during the day in caves and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. It hibernates in mixed sex aggregations of a few to several hundred individuals. Hibernation is more prolonged in colder areas. This species arouses periodically and moves to alternative roosts and actively forages and drinks throughout the winter. A single young is born per year between May and July. Females form maternity colonies of 35 to 200 individuals, while males roost individually. Townsend's big-eared bats feed primarily on small moths that are gleaned from vegetation.

The CNDDB reports one historical (1945), non-specific occurrence of Townsend's big-eared bat within the quadrangles reviewed, located approximately eight miles from the survey area. Suitable foraging habitat is present and trees in the wooded habitats of the survey area provide suitable roosting habitat for this species. Therefore, this species has a moderate potential to occur within the survey area.

Raptors and Other Protected Avian Species

Raptors and their nests are protected under California Fish and Game Code. While the life histories of these species vary, overlapping nesting and foraging similarities (approximately February through August) allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest vegetation types, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland and habitat edges. Various common raptor species (such as red-tailed hawk [*Buteo jamaicensis*], red-shouldered hawk [*Buteo lineatus*], and turkey vulture [*Cathartes aura*]) have the potential to nest within the trees present within and adjacent to the survey area.

Vegetation Types

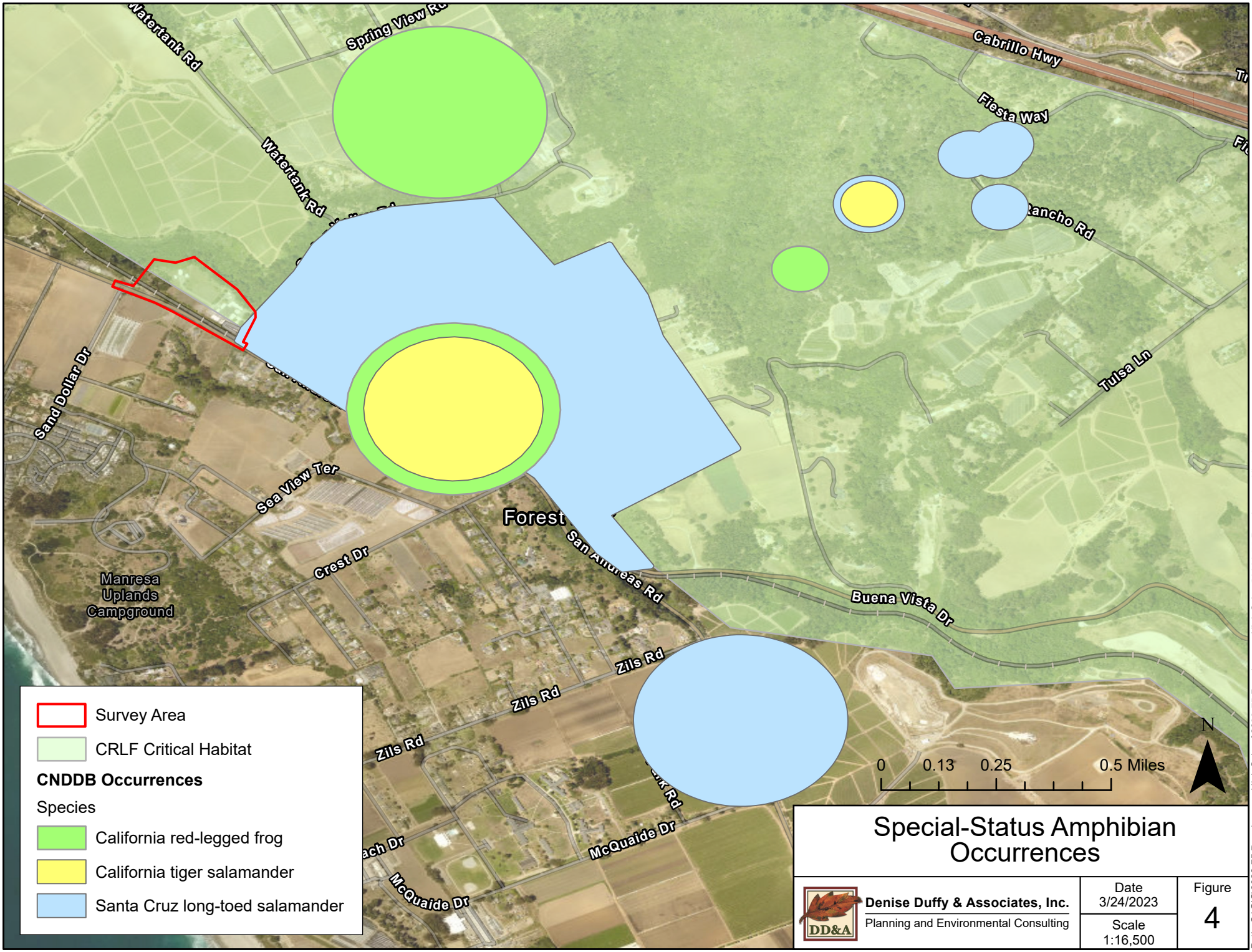
Denise Duffy & Associates, Inc.
Planning and Environmental Consulting

Date
3/24/2023

Scale
1:2,600

Figure
3

Path: C:\GIS\2022-75 Renaissance High School\2022-75 Renaissance High School.aprx



Special-Status Amphibian Occurrences

Denise Duffy & Associates, Inc. Planning and Environmental Consulting	Date 3/24/2023 Scale 1:16,500	Figure 4

Path: C:\GIS\2022-75 Renaissance High School\2022-75 Renaissance High School.aprx

4.0 IMPACTS AND MITIGATION

Construction activities associated with the proposed project, including all ground disturbance (trenching, jack and bore) could result in impacts to sensitive habitats and special-status wildlife species. Mitigation measures have been provided below to reduce these potential impacts to a less-than-significant level in accordance with CEQA.

4.1 Impact Thresholds

The following section describes potential impacts to sensitive biological resources that may result from the project. In accordance with Appendix G of CEQA Guidelines, an impact is considered to be significant and require mitigation if it would result in any of the following:

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 CDFW or USFWS;

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS;

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 nursery sites;

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

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.

Recommendations are included below to avoid or minimize impacts to sensitive biological resources.

4.2 Impacts and Recommendations

Impact BIO-1: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

California tiger salamander, Santa Cruz long-toed salamander, and California red-legged frog have the potential to occur within all undeveloped portions of the survey area; particularly, ruderal areas as well as Monterey pine forest, oak woodland, and scrub habitat within and adjacent to the survey area. Removal of vegetation as well as conventional trenching and jack and bore for pipeline installation could result in direct and indirect impacts to these species. Direct impacts include mortality of individuals, while indirect impacts

include loss of habitat for these species. Implementation of recommendations BIO-1 through BIO-9 would reduce the potential for impacts.

San Francisco dusky-footed woodrat was observed within the survey area and has the potential to occur within the Monterey pine forest, oak woodland, and scrub habitat within and adjacent to the survey area. Removal of vegetation during construction could result in direct and indirect impacts to SFDFW. Direct impacts include mortality of individuals or nests, while indirect impacts include loss of habitat. Implementation of recommendations BIO-1 through BIO-8, and BIO-10, would reduce the potential for impacts.

The survey area provides potential nesting habitat for birds of prey and birds listed by the MBTA. The survey area contains suitable nesting habitat for ground and tree-nesting species, particularly within the Monterey pine, oak woodland, and scrub habitats within the survey area, and trees and shrubs immediately adjacent to the survey area. Nests could become established in the vegetation to be removed before construction begins. Construction-related activities that occur within the general nesting season (February through August) have the potential to result in direct and indirect take of an active nest. Construction activities that could result in direct impacts to nesting birds include vegetation and tree removal. Indirect impacts that could occur during construction include an increase in human activity, construction noise and dust in the immediate vicinity of an active nest that could result in significant harassment and nest abandonment, causing take of the nest. Therefore, there may be a potential for impacts to occur to nesting birds, particularly during the general nesting season of February 1 through August 31. Implementation of recommendations BIO-1 through BIO-8, and BIO-11 would reduce the potential for impacts to nesting birds of prey and birds listed by the MBTA.

The survey area provides suitable habitat for special-status bat species identified above. Suitable foraging and roosting habitat for these species is present within the survey area. Construction activities, including vegetation removal, may result in direct and indirect impacts to these species if these species are using the site for day, night, or maternity roosts. Direct impacts include mortality of individuals or roosts, while indirect impacts include loss of habitat. Implementation of recommendations BIO-1 through BIO-8, and BIO-12 would reduce the potential for impacts to special-status bat species.

BIO-1 Every individual working on the Project must attend biological awareness training prior to working on the job site. The training shall be delivered by a qualified biologist and shall include at minimum information regarding the following:

a. Location and identification of sensitive habitats and all special-status species with potential to occur in the survey area including information specific to identifying the special-status species identified above, the habitat for these species, and the project specific measures being implemented to protect these species.

b. The importance of avoiding impacts to special-status species and their habitat, and the steps necessary if any special-status species is encountered at any time.

c. Identification of the limits of work, and project-specific avoidance measures and permit conditions that must be followed.

BIO-2 Disturbance of Monterey pine forest, oak woodland, and scrub vegetation and removal of native trees within these habitats shall be avoided to the maximum extent possible.

BIO-3 Native vegetation that cannot be avoided shall be cut at ground level rather than removed by the roots when possible.

BIO-4 Prior to commencement of construction, high visibility fencing and/or flagging shall be installed, with the assistance of a qualified biologist, to indicate the limits of work and the boundaries of sensitive habitat areas to be avoided.

a. The limits of work shall be designated to avoid impacts to the surrounding Monterey pine forest, oak woodland, and scrub habitat, to the maximum extent possible and to maximize native tree and shrub retention.

b. No work-related activity including equipment staging, vehicular access, grading and/or vegetation removal shall be allowed outside the designated limits of work.

BIO-5 If any special-status species is identified in the project impact area at any time prior to or during construction, work shall cease immediately in the vicinity of the individual. The animal shall either be allowed to move out of harm's way on its own or a qualified biologist shall move the animal out of harm's way to a safe relocation site pursuant to all species-specific restrictions and regulations.

BIO-6 During initial clearing, grubbing, and grading within the Monterey pine forest, oak woodland, and scrub habitat, a qualified biologist shall be present to conduct daily monitoring activities to ensure compliance with measures are in place for protection of special status species that may be encountered. After initial clearing, grubbing and grading has been completed, an alternate construction monitor may be trained and designated for execution of daily monitoring activities.

BIO-7 Daily monitoring by the project biologist or construction monitor shall occur for the duration of project construction within the Monterey pine forest, oak woodland, and scrub habitat. Daily monitoring activities shall include the following at minimum:

a. Monitoring the work area for the presence of special-status species and verifying that individuals are properly relocated out of harm's way as needed, pursuant to all species-specific restrictions and regulations.

b. Monitoring the exclusionary fencing at the project site to verify good working condition and prevent wildlife entrapment.

c. Checking under all equipment for wildlife before use.

d. Verifying that at the end of each workday, all excavations shall be secured with a cover, or a ramp installed to prevent wildlife entrapment.

e. All trenches, pipes, culverts or similar structures shall be inspected for animals prior to burying, capping, moving, or filling.

BIO-8 During project activities, all trash that may attract predators shall be properly contained, removed from the work site, and disposed of regularly. Following construction, all trash and construction debris will be removed from work areas.

BIO-9 To avoid/minimize impacts to special-status amphibians, including CTS, SCLTS, and CRLF, the following measures shall be adhered to:

a. The project applicant will comply with the CESA and will coordinate with the CDFW to determine whether incidental take authorization for CTS, and SCLTS is required prior to issuance of a grading permit. If it is determined that authorization for the incidental take of these species is required from the CDFW, the project applicant will comply with the CESA to obtain a 2081 incidental take permit from CDFW prior to the issuance of a grading permit. Permit requirements typically involve the preparation and implementation of a mitigation plan and mitigating impacted habitat at a 3:1 ratio through preservation and/or restoration. The project applicant would be required to retain a qualified biologist to prepare a mitigation plan, which will include, but is not limited to, identifying avoidance and minimization measures, and identifying a mitigation strategy that includes a take assessment, avoidance and minimization measures, compensatory mitigation lands, success criteria, and funding assurances. The project applicant would be required to implement the approved plan and any additional permit requirements.

b. The project will comply with the ESA and conduct consultation with the USFWS to determine whether incidental take authorization for CTS, SCLTS, and CRLF is required prior to issuance of a grading permit. If it is determined that authorization for the incidental take of these species is required from the USFWS, the project will comply with the ESA to obtain Section 7 or Section 10 authorization from USFWS at the project-level prior to the issuance of a grading permit. Permit requirements typically involve the preparation and implementation of a mitigation plan and mitigating impacted habitat at a 3:1 ratio through preservation and/or restoration. The project applicant would be required to retain a qualified biologist to prepare a mitigation plan, which will include, but is not limited to, identifying avoidance and minimization measures, and identifying a mitigation strategy that includes a take assessment, avoidance and minimization measures, compensatory mitigation lands, success criteria, and funding assurances. The project applicant would be required to implement the approved plan and any additional permit requirements.

c. A qualified biologist will survey the proposed work area and immediately adjacent areas 48 hours before and the morning of the onset of work activities for the presence of special-status amphibians. If any life stage of CTS, SCLTS, or CRLF is observed, construction activities will not commence until CDFW/USFWS is consulted and appropriate actions are taken to allow project activities to continue.

d. During ground disturbing and vegetation removal activities, a qualified biologist shall survey appropriate areas of the construction site daily before the onset of work activities for the presence of special-status amphibians. The qualified biologist shall remain available to come to the site if a

special-status amphibian is identified until all ground disturbing activities are completed. If any life stage of CTS, SCLTS, or CRLF is found and these individuals are likely to be killed or injured by work activities, the qualified biologist shall be contacted, and work shall stop in that area until the special-status amphibian has moved on its own out of the work area and the USFWS has been contacted. Construction activities will not resume until the USFWS is consulted and appropriate actions are taken to allow project activities to continue.

e. After ground disturbing and vegetation removal activities are complete, or earlier if determined appropriate by the qualified biologist, the qualified biologist will designate a construction monitor to oversee on-site compliance with all avoidance and minimization measures. The qualified biologist shall ensure that this construction monitor receives sufficient training in the identification of special-status amphibians. The construction monitor or the qualified biologist is authorized to stop work if the avoidance and/or minimization measures are not being followed. If work is stopped, the USFWS shall be notified. The qualified biologist and the construction monitor shall complete a daily log summarizing activities and environmental compliance throughout the duration of the proposed project.

f. Only tightly woven fiber netting or similar material may be used for erosion control at the project site. Coconut coir matting is an acceptable erosion control material. No plastic mono-filament matting will be used for erosion control, as this material may ensnare wildlife, including special-status amphibians.

g. Because dusk and dawn are often the times when special-status amphibians are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour after sunrise.

h. To avoid or minimize impacts to special-status amphibians and their habitat, suitable habitat (i.e., ruderal areas, Monterey pine forest, oak woodland, scrub) shall be avoided to the greatest extent feasible. In addition to the high visibility fencing described in BIO -4, amphibian specific wildlife exclusion fencing will be installed around the perimeter of the project work area, where suitable habitat is present, to prevent special-status amphibians from migrating into the project area during the breeding season. A qualified biologist will supervise the installation of exclusion fencing. The status of the fencing will be monitored in accordance with BIO-4 above.

BIO-10 To protect San Francisco dusky-footed woodrat, a qualified biologist shall implement the following protection measures:

a. Within two weeks prior to commencement of development activities (including clearing and grubbing) a qualified biologist shall survey the project disturbance area to identify any woodrat nest locations that may be affected by the proposed development. All woodrat nests within the construction impact area and a 25-foot buffer shall be clearly flagged.

b. If no woodrat nests are found during the survey, no further avoidance and minimization measures for this species are necessary.

c. If woodrat nests are found, the construction contractor shall avoid the nests to the extent feasible by installing a 25-foot buffer with protective fencing or other material that shall prohibit encroachment. A reduction in the size of this buffer, or encroachment into this buffer, may be allowed if the biologist determines that microhabitat conditions such as shade, cover and adjacent food sources can be retained.

d. If avoidance of woodrat nests is not possible, a qualified biologist shall develop and implement a Woodrat Relocation Plan to be implemented prior to the commencement of construction. The plan shall include the following:

    i. Trapping efforts and relocation activities shall not take place during low night temperatures (below 40 degrees Fahrenheit), inclement or extreme weather conditions.

    ii. If no San Francisco dusky-footed woodrats are captured at a given nest, it shall be dismantled by hand to ground level, and the woody debris spread to reduce rebuilding.

    iii. For occupied nests, the existing woodrat nest shall be dismantled and the woody debris, including cached food and nesting material, carried to the nearest suitable relocation site outside the project footprint and used to build an artificial shelter.

    iv. Sites for artificial shelters shall be located as near as possible to the original nest location and no closer than 20 feet from existing woodrat nests and other artificial shelters. Choose the best available microhabitat, ideally in a location with sun and shade and if possible under the same species of tree or shrub as was present at the original nest location. Relocation sites shall contain biologically-suitable habitat features (e.g. stands of poison oak, coast live oaks, and dense native brush).

    v. When releasing woodrats, the occupied live-trap shall be placed against the entrance to the artificial shelter, opened, and the woodrat allowed to enter, ideally on its own accord. After the individual enters, the entrance shall be loosely but completely plugged with dirt and leaf duff to encourage it to stay, at least for the short-term.

    vi. If occupied nests were relocated, monitoring shall be conducted for 30 days after relocation is completed and include infrared and motion activated cameras, or other monitoring methods, and an occupancy assessment. A report on San Francisco dusky-footed woodrat nest monitoring shall be provided to County Environmental Planning within 30 days following the end of the monitoring period and shall include the methods and results of trapping and relocation, occupancy determinations, monitoring methods, and discussion of any remedies that may be needed.

BIO-11 To avoid/minimize impacts to nesting birds the following measures shall be adhered:

a. If removal of trees/vegetation, grading activity, or other use of heavy equipment begins outside of the February 1 to August 31 breeding season, there will be no need to conduct a preconstruction survey for active nests.

b. If removal of trees/vegetation, grading activity, or other use of heavy equipment is to commence between February 1 and August 31, a survey for active bird nests shall be conducted by a qualified biologist within two weeks prior to the start of such activity. The survey area shall include the survey area, and a survey radius around the survey area of 50 feet for MBTA birds and 250 feet for birds of prey.

c. If no active nest of a bird of prey or MBTA bird is found, then no further avoidance and minimization measures are necessary.

d. If active nest(s) of MBTA birds or birds of prey are found in the survey area, the following avoidance buffers shall be adhered to unless otherwise advised by CDFW or USFWS: Avoidance buffer of 50 feet for MBTA birds and 250 feet for birds of prey shall be established around the active nest(s). The biologist shall monitor the nest and advise the applicant when all young have fledged the nest. Removal of vegetation, grading activity, or other use of heavy equipment may begin after fledging is complete.

e. If the biologist determines that a smaller avoidance buffer will provide adequate protection for nesting birds, a proposal for alternative avoidance/protective measures, potentially including a smaller avoidance buffer and construction monitoring, may be submitted to USFWS and CDFW for review and approval prior to removal of vegetation, grading activity, or other use of heavy equipment.

f. If removal of vegetation, grading activity, or other use of heavy equipment stops for more than two weeks during the nesting season (February 1 - August 31) a new survey shall be conducted prior to re-commencement of construction.

BIO-12 To avoid/minimize impacts to special-status bats the following measures shall be adhered to:

a. To the extent practical limbing/tree removal operations should occur between September 15 and November 1 to avoid bat maternity roosts and winter hibernacula. If tree limbing/tree removal operations must occur outside the period of September 15 through November 1 a survey for bats shall be conducted by a qualified biologist.

b. Prior to commencement of construction related activities including tree trimming and removal, a qualified biologist shall conduct a pre-construction survey for bats as follows:

i. The biologist shall determine if bats are utilizing the site for roosting. For any trees/snags/buildings that could provide roosting space for cavity or foliage-roosting bats, potential bat roost features shall be thoroughly evaluated to

determine if bats are present. Visual inspection and/or acoustic surveys shall be utilized as initial techniques.

ii. If roosting bats are found, the biologist shall develop and implement acceptable passive exclusion methods in coordination with or based on CDFW recommendations. If feasible, exclusion shall take place during the appropriate windows (September 15 and November 1) to avoid harming bat maternity roosts and/or winter hibernacula. (Authorization from CDFW is required to evict winter hibernacula for bats).

iii. If established maternity colonies are found, a buffer shall be established around the colony to protect pre-volant young from construction disturbances until the young are no longer reliant upon the roost for survival.

iv. If a tree is determined not to be an active roost site for roosting bats, it may be immediately limbed or removed as follows:

1. If foliage roosting bats are determined to be present, limbs shall be lowered, inspected for bats by a bat biologist, and chipped immediately or moved to a dump site.

2. Alternately, limbs may be lowered and left on the ground until the following day, when they can be chipped or moved to a dump site. No logs or tree sections shall be dropped on downed limbs or limb piles that have not been in place since the previous day.

Impact BIO-2: Have a substantial adverse effect on any sensitive natural community identified in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Construction of the project will result in temporary impacts to CRLF Critical Habitat Mapping Unit SCZ-2, as described above Critical Habitat for any listed species is considered a sensitive natural community. Construction of the project will also result in temporary impacts to coast live oak woodland, as described above coast live oak woodland is considered a sensitive natural community by the County and is considered ESHA under the CCA. As required by SCCC Section 16.32, the project must obtain a biotic approval from the County for development within a sensitive habitat and will comply with all permit requirements.

Potential impacts include any vegetation removal and any ground disturbance including trenching and jack and bore to install the pipeline. Implementation of BIO-1 through BIO-4, BIO-7, and BIO-9, described above, are recommended to reduce, or avoid potential impacts to sensitive habitats. In addition, BIO-13 is included below to restore any sensitive habitats impacted during project construction.

BIO-13 To compensate for disturbance of sensitive habitats, and to comply with the Santa Cruz County General Plan Policy 5.1.12, the area of temporarily disturbed sensitive habitat shall be replaced in-kind at a minimum restoration to impact ratio of 1:1. A site-specific Habitat Restoration Plan shall be developed by a qualified biologist or restoration professional, and shall include the following minimum elements:

a. Identification of areas on site where temporary disturbance and re-establishment of native habitat shall occur. All areas temporarily disturbed as a result of the project shall be restored to pre-project contours to the maximum extent possible and re-vegetated with native plant species appropriate to the habitat disturbed.

b. A tree inventory assessment including the species, size, and locations of all trees intended for removal.

c. All native trees removed shall be replaced in-kind at a minimum 1:1 ratio. Non-native trees removed shall be replaced at a minimum 1:1 ratio by native tree species appropriate to the surrounding habitat.

d. A site-specific planting plan intended to inform the re-vegetation efforts. Local plant stock shall be used whenever possible. The plant pallet should include native species common to the surrounding native habitats that are being restored.

REFERENCES

Baldwin, B. G, et. al. 2012. *The Jepson Manual – Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded*. University of California Press. Berkeley, CA. 1600 pp.

Bulger, J.B., N.J. Scott Jr., and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frog *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation, Vol. 110. Pp. 85-95.

CDFW. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities.

CDFW. 2023a. Special Animals List. Available online at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406

CDFW. 2023b. California Natural Diversity Database (March 2023).

CDFW. 2023c. California Natural Communities List. Available online at https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609

California Invasive Plant Council (Cal-IPC). 2023. The Cal-IPC Inventory. Available online at https://www.cal-ipc.org/

California Native Plant Society (CNPS). 2001. Botanical Survey Guidelines.

CNPS. 2023. Inventory of Rare and Endangered Plants (online inventory, v8-03). California Native Plant Society. Sacramento, CA. Available online at: http://www.rareplants.cnps.org/

Jennings, M.R. and M.P. Hayes. 1986. Decline of ranid frog species in western North America: are bullfrogs (*Rana catesbeiana*) responsible? Journal of Herpetology Vol. 20 (4). Pp. 490-509.

Jennings, M.R. and M.P. Hayes. 1988. Habitat correlates of distribution of the California red-legged frog (*Rana draytonii*) and the foothill yellow-legged frog (*Rana boylii*): implications for management. Proceedings form Management of Amphibians, Reptiles and Small Mammals in North America Symposium 1988.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. Final report to the California Department of Fish and Game, Inland Fisheries Division. 255 pp.

Loredo, I., D. Van Vuren, and M. L. Morrison. 1996. Habitat use and migration behavior of the California tiger salamander. Journal of Herpetology, Vol. 30(2). Pp. 282-285.

Matthews, M.A and M. Mitchell. 2015. T*he Plants of Monterey County; an Illustrated Field Key (Second Edition)*. California Native Plant Society, Sacramento, California. 446 pp.

Rathbun, G.B., M.R. Jennings, T.G. Murphey, and N.R. Siepel. 1993. Status and ecology of sensitive aquatic vertebrates in lower San Simeon and Pico Creeks, San Luis Obispo County, California. Unpublished report, National Ecology Research Center, Piedras Blancas Research Station, San Simeon, California. 103 pp.

Remsen, J.V. Jr. 1978. Bird species of special concern in California. California Dept. of Fish and Game, Nongame Wildlife Investigations, Wildlife Management Branch Administrative Report No. 78-1.

Ruth, S.B. and K. Tollestrup. 1973. Aspects of the life history and current status of the Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) at Valencia Lagoon, Santa Cruz County, California. Unpublished Student Report, Museum of Vertebrate Zoology, University of California, Berkeley. 40 pp.

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. *A manual of California vegetation 2nd Edition*. California Native Plant Society, Sacramento, CA. 1300 pp.

Stebbins, R.C. 1972. *California Amphibians and Reptiles*. University of California Press, Berkeley, CA. 152 pp.

Stebbins, R.C. 1985. *Western reptiles and amphibians*. Houghton Mifflin Company, Boston, MA. 336 pp

Stebbins, R.C. 2003.*Western reptiles and amphibians, 3rd edition*. Houghton Mifflin Company, New York, NY.533 pp.

Thelander, C. (ed.). 1994. *Life on the edge: A guide to California's endangered natural resources: wildlife*. BioSystems Books, Santa Cruz, CA.

U.S. Army Corps of Engineers (ACOE). 2008. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0). Ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-28. Vicksburg, MS: U.S. Army Engineer Research and Development Center. 123 pp.

U.S. Geological Survey (USGS). 2018. The National Map. Available online at: https://www.usgs.gov/core-science-systems/national-geospatial-program/national-map

U.S. Fish and Wildlife Service (USFWS). 1967. Endangered Species. Federal Register, Vol. 32 (48). Pp. 4001.

USFWS. 1996. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the California Red-legged Frog; Final Rule. Federal Register, Vol. 61(101). Pp. 25813-25833.

USFWS. 1999. Santa Cruz long-toed salamander (*Ambystoma macrodactylum croceum*) draft revised recovery plan. USFWS. 82 pp.

USFWS. 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants.

USFWS. 2004. Endangered and threatened wildlife and plants; Determination of threatened status for the California Tiger Salamander; and special rule exemption for existing routine ranching activities; Final rule. Federal Register, Vol. 69(149). Pp. 47211-47248.

USFWS. 2019. 5-Year Review Santa Cruz Long-Toed Salamander (*Ambystoma macrodactylum croceum*). Available online at: http://ecos.fws.gov/

USFWS. 2023a. Information for Planning and Consultation (IPaC) Resource List for the Project. Available online at: https://ecos.fws.gov/ipac/

U.S. Fish and Wildlife Service. 2023b. Ellicott Slough National Wildlife Refuge – About Us. Available online at: https://www.fws.gov/refuge/ellicott-slough/about-us

Wetland Training Institute, Inc. 1995. Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual. Glenwood, NM. WTI 02-1. 143 pp.

Williams, D. 1986. Mammalian species of special concern in California. California Department of Fish and Game Report 86-1. 112 pp.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1988. California's wildlife, Volume I: Amphibians and reptiles. California Department of Fish and Game, Sacramento, CA. 272 pp.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer, and M. White (eds.). 1990. California's Wildlife, Volume II: Birds. California Department of Fish and Game, Sacramento, CA.731 pp.

This page was left intentionally blank

APPENDIX A

SPECIAL-STATUS SPECIES TABLE

Special-Status Species Table

Laurel, Loma Prieta, Mt. Madonna, Soquel, Watsonville West, Watsonville East, Moss Landing, and Prunedale Quadrangles

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
MAMMALS			
Antrozous pallidus **Pallid bat**	-- / CSC / --	Occurs in a wide variety of habitats including grasslands, shrublands, arid desert areas, oak savanna, coastal forested areas, and coniferous forests of the mountain regions of California. Most common in open, dry habitats with rocky areas for roosting. Day roosts include caves, crevices, mines, and occasionally hollow trees and buildings. Seems to prefer rocky outcrops, cliffs, and crevices with access to open habitats for foraging. Similar structures are used for night roosting and will also use more open sites such as eaves, awnings, and open areas under bridges for feeding roosts.	**Moderate** Suitable foraging and roosting habitat is present within the survey area. The nearest CNDDB occurrence is located approximately eight miles northwest of the survey area; however, this is a historical occurrence from 1928.
Corynorhinus townsendii **Townsend's big-eared bat**	-- / CSC / --	Found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Typically roost during the day in limestone caves, lava tubes, and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees.	**Moderate** Suitable foraging and roosting habitat is present within the survey area. The nearest CNDDB occurrence is located approximately eight miles northwest of the survey area; however, this is a historical occurrence from 1945.
Neotoma fuscipes annectens **San Francisco dusky-footed woodrat**	-- / CSC / --	Forest and oak woodland habitats of moderate canopy with moderate to dense understory. Also occurs in chaparral habitats.	**Present** Suitable habitat is present within the wooded habitats in the survey area. Approximately one dozen woodrat nests were observed within the survey area during the March 2023 survey.
Taxidea taxus American badger	-- / CSC / --	Dry, open grasslands, fields, pastures savannas, and mountain meadows near timberline are preferred. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds.	**Low** Poor quality habitat is present within the School field in the survey area. The nearest CNDDB occurrence is located approximately 0.1 mile from the survey area; however, this is a historical non-specific occurrence from 1909.
Sorex ornatus salarius Monterey shrew	-- / CSC / --	Mostly moist or riparian woodland habitats, and within chaparral, grassland, and emergent wetland habitats where there is a thick duff or downed logs.	**Unlikely** No suitable habitat within the survey area. The CNDDB only reports one occurrence within the quadrangles reviewed, located approximately 10 miles from the survey area.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Vulpes macrotis mutica San Joaquin Kit fox	FE / ST / --	Open, level areas with loose-textured soils supporting scattered, shrubby vegetation with little human disturbance. Live in annual grasslands or grassy open stages dominated by scattered brush, shrubs, and scrub.	**Not Present** No suitable habitat is present within the survey area and the survey area is outside the accepted range for the species. There are no CNDDB occurrences of this species within the quadrangles reviewed.
BIRDS			
Agelaius tricolor Tricolored blackbird (nesting colony)	-- / SC&CSC / --	Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grassland or aquatic habitats.	**Unlikely** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately four miles from the survey area.
Asio flammeus Short-eared owl (nesting)	-- / CSC / --	Usually found in open areas with few trees, such as annual and perennial grasslands, prairies, meadows, dunes, irrigated lands, and saline and freshwater emergent marshes. Dense vegetation is required for roosting and nesting cover. This includes tall grasses, brush, ditches, and wetlands. Open, treeless areas containing elevated sites for perching, such as fence posts or small mounds, are also needed. Some individuals breed in northern California.	**Unlikely** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 11 miles from the survey area.
Athene cunicularia Burrowing owl (burrow sites & some wintering sites)	-- / CSC / --	Year-round resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Frequent open grasslands and shrublands with perches and burrows. Use rodent burrows (often California ground squirrel) for roosting and nesting cover. Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available.	**Unlikely** Poor quality nesting and wintering habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 10 miles from the survey area.
Aquila chrysaetos Golden eagle (nesting & wintering)	--/ CFP / --	Use rolling foothills, mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, cliffs, and rocky outcrops. Nest in secluded cliffs with overhanging ledges as well as large trees.	**Unlikely** No suitable habitat within the survey area. The nearest CNDDB occurrence is located approximately 18 miles from the survey area.
Brachyramphus marmoratus Marbled Murrelet	FT / SE / --	Occur year-round in marine subtidal and pelagic habitats from the Oregon border to Point Sal. Partial to coastlines with stands of mature redwood and Douglas-fir. Requires dense mature forests of redwood and/or Douglas-fir for breeding and nesting.	**Not Present** No suitable habitat within the survey area. There are no CNDDB occurrences of this species within the quadrangles reviewed.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Coccyzus americanus occidentalis Western yellow-billed cuckoo	FT / SE / --	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, slow-moving watercourses, backwaters, or seeps. Willow almost always a dominant component of the vegetation.	**Unlikely** No suitable habitat within the survey area. There are no CNDDB occurrences of this species within the quadrangles reviewed.
Charadrius alexandrinus nivosus Western snowy plover (nesting)	FT / CSC / --	Sandy beaches on marine and estuarine shores, also salt pond levees and the shores of large alkali lakes. Requires sandy, gravelly or friable soil substrate for nesting.	**Not Present** No suitable habitat within the survey area. There are no CNDDB occurrences of this species within the quadrangles reviewed.
Coturnicops noveboracensis Yellow rail	-- / CSC / --	Wet meadows and coastal tidal marshes. Occurs year round in California, but in two primary seasonal roles: as a very local breeder in the northeastern interior and as a winter visitor (early Oct to mid-Apr) on the coast and in the Suisun Marsh region	**Not Present** No suitable habitat within the survey area. There is one CNDDB occurrence of this species within the quadrangles reviewed, located approximately nine miles from the survey area.
Elanus leucurus White-tailed kite (nesting)	-- / CFP / --	Open groves, river valleys, marshes, and grasslands. Prefer such area with low roosts (fences etc.). Nest in shrubs and trees adjacent to grasslands.	**Low** Trees and shrubs within the survey area may provide suitable nesting habitat and ruderal areas may provide marginal foraging habitat. The nearest CNDDB occurrence is approximately 12 miles from the survey area.
Empidonax trailii extimus Southwestern willow flycatcher	FE / SE / --	Breeds in riparian habitat in areas ranging in elevation from sea level to over 2,600 meters. Builds nest in trees in densely vegetated areas. This species establishes nesting territories and builds and forages in mosaics of relatively dense and expansive areas of trees and shrubs, near or adjacent to surface water or underlain by saturated soils. Not typically found nesting in areas without willows (*Salix sp*.), tamarisk (*Tamarix ramosissima)*, or both.	**Unlikely** No suitable habitat within the survey area. The CNDDB does not report any occurrences of this species within the quadrangles evaluated.
Falco peregrinus anatum American peregrine falcon (nesting)	-- / CFP / --	Forages for other birds over a variety of habitats. Breeds primarily on rocky cliffs.	**Unlikely** No suitable nesting habitat is present within the survey area. The nearest CNDDB occurrence is located approximately five miles from the survey area; however, this is a non-specific occurrence consisting of the entire Moss Landing quadrangle.
Gymnogyps californianus California condor	FE / SE / --	Roosting sites in isolated rocky cliffs, rugged chaparral, and pine covered mountains 2000-6000 feet above sea level. Foraging area removed from nesting/roosting site (includes rangeland and coastal area - up to 19-mile commute one way). Nest sites in cliffs, crevices, potholes.	**Unlikely** No suitable nesting habitat is present within the survey area. There are no CNDDB occurrences of this species within the quadrangles reviewed.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Rallus obsoletus obsoletus California Ridgeway's rail	FE / SE&CFP /--	Salt and brackish marshes.	**Unlikely** No suitable habitat is present within the survey area. There is one CNDDB occurrence of this species within the quadrangles reviewed, located approximately 10 miles from the survey area.
Riparia riparia Bank swallow (nesting)	-- / ST / --	Nest colonially in sand banks. Found near water; fields, marshes, streams, and lakes.	**Unlikely** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately five miles from the survey area.
Sterna antillarum browni California least tern	FE / SE / --	Prefers undisturbed nest sites on open, sandy/gravelly shores near shallow-water feeding areas in estuaries. Sea beaches, bays, large rivers, bars.	**Not Present** No suitable habitat is present within the survey area. There are no CNDDB occurrences of this species within the quadrangles reviewed.
Vireo bellii pusillus Least Bell's vireo	FE / SE / --	Riparian areas and drainages. Breed in willow riparian forest supporting a dense, shrubby understory. Oak woodland with a willow riparian understory is also used in some areas, and individuals sometimes enter adjacent chaparral, coastal sage scrub, or desert scrub habitats to forage.	**Unlikely** No suitable habitat is present within the survey area. The CNDDB does not report any occurrences of this species within the quadrangles evaluated.
REPTILES AND AMPHIBIANS			
Ambystoma californiense **California tiger salamander**	FT / ST / --	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources.	**Moderate** No suitable breeding habitat is present within the survey area; however, suitable upland habitat is present, and the survey area is within the dispersal range (1.3 miles, 2.2 km) of two known breeding resources. The nearest CNDDB occurrence is located approximately 0.3 miles (0.5 km) from the survey area in Ellicott Pond, a known CTS breeding resource.
Ambystoma macrodactylum croceum **Santa Cruz long-toed salamander**	FE / SE&CFP / --	Preferred habitats include ponderosa pine, montane hardwood-conifer, mixed conifer, montane riparian, red fir and wet meadows. Occurs in a small number of localities in Santa Cruz and Monterey Counties. Adults spend the majority of the time in underground burrows and beneath objects. Larvae prefer shallow water with clumps of vegetation.	**Moderate** No suitable breeding habitat is present within the survey area; however, suitable upland habitat is present in the wooded habitats within and adjacent to the survey area. There is one CNDDB occurrence which overlaps the eastern corner of the survey area, which contains two known SCLTS breeding resources. The survey area is within the dispersal range (1.0 mile, 1.6 km) of two additional CNDDB occurrences of this species, one of which is a documented breeding resource.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Aneides niger Santa Cruz black salamander	-- / CSC / --	Occurs in the fog belt of the outer Coastal Range in mesic forests. This species occurs in moist streamside microhabitats. This species is often found in shallow standing water or seeps. Small geographical range consisting of woodland habitat within the Santa Cruz Mountains in western Santa Clara, northern Santa Cruz, and southernmost San Mateo Counties.	**Low** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately eight miles from the survey area, with development including major roads and highways isolating the survey area from any documented occurrences.
Anniella pulchra Northern California legless lizard	-- / CSC / --	Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover, often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas.	**Low** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. The nearest CNDDB occurrence is located approximately 3.5 miles from the survey area.
Dicamptodon ensatus California giant salamander	-- / CSC / --	Occurs within the Coast Range from just north of the southern border of Mendocino County to southern Santa Cruz County. Found in wet coastal forests in or around clear, cold permanent and semi-permanent streams and seepages. Typically, within elevations ranging from sea level to approximately 3000 feet.	**Unlikely** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately six miles from the survey area, with development including major roads and highways isolating the survey area from any documented occurrences.
Emys marmorata Western pond turtle	-- / CSC / --	Associated with permanent or nearly permanent water in a wide variety of habitats including streams, lakes, ponds, irrigation ditches, etc. Require basking sites such as partially submerged logs, rocks, mats of vegetation, or open banks.	**Unlikely** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately five miles from the survey area.
Phrynosoma blainvillii Coast horned lizard	-- / CSC / --	Associated with open patches of sandy soils in washes, chaparral, scrub, and grasslands.	**Unlikely** No suitable habitat is present within the survey area. There is one CNDDB occurrence of this species within the quadrangles reviewed, located approximately 20 miles from the survey area.
Rana boylii Foothill yellow-legged frog	-- / SC&CSC / --	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats, including hardwood, pine, and riparian forests, scrub, chaparral, and wet meadows. Rarely encountered far from permanent water.	**Unlikely** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 2.1 miles from the survey area; however, this is a non-specific occurrence from 1970.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Rana draytonii **California red-legged frog**	FT / CSC / --	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent riparian vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows.	**Moderate** No suitable breeding habitat is present within the survey area; however, dispersal habitat is present within all undeveloped portions of the survey area. There are three CNDDB occurrences located within the known dispersal distance of this species (1.0 mile, 1.6 km). The nearest CNDDB occurrence is located approximately 0.4 miles (0.6 km) from the survey area in Ellicott Pond, a known CRLF breeding resource.
Thamnophis sirtalis tetrataenia San Francisco garter snake	FE / SE&CFP / --	An extremely scarce subspecies which only occurs in the vicinity of ponds and reservoirs in San Mateo County. Observed most often in the vicinity of standing water (mainly ponds, lakes, marshes, and sloughs); however, temporary ponds and other seasonal water bodies are also used. Emergent and bankside vegetation (such as cattails, bulrush, and spike rushes) are preferred for cover. Use open spaces between stream/pond habitats and grasslands for basking.	**Unlikely** No suitable habitat is present within the survey area. There are no CNDDB occurrences of this species within the quadrangles reviewed.
FISH			
Eucyclogobius newberryi Tidewater goby	FE / CSC / --	Brackish water habitats, found in shallow lagoons and lower stream reaches. Tidewater gobies appear to be naturally absent (now and historically) from three large stretches of coastline where lagoons or estuaries are absent and steep topography or swift currents may prevent tidewater gobies from dispersing between adjacent localities. The southernmost large, natural gap occurs between the Salinas River in Monterey County and Arroyo del Oso in San Luis Obispo County.	**Not Present** No suitable obligate habitat is present within the survey area.
Hesperoleucus venustus subditus Southern coastal roach	-- / CSC / --	Restricted to the drainages of Tomales Bay/northern SF Bay in the north and Monterey Bay in the south.	**Not Present** No suitable obligate habitat is present within the survey area.
Lavinia exilicauda harengus Monterey hitch (Pajaro/Salinas hitch)	-- / CSC / --	Found only within the Pajaro and Salinas River systems. Can occupy a wide variety of habitats, however, they are most abundant in lowland areas with large pools or small reservoirs that mimic such conditions. May be found in brackish water conditions within the Salinas River lagoon during the early summer months when the sandbar forms at the mouth of the river.	**Not Present** No suitable obligate habitat is present within the survey area.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Oncorhynchus kisutch Coho salmon (central California coast ESU)	FE / SE / --	All naturally spawned populations from Punta Gorda south to and including the San Lorenzo River; populations in tributaries to San Francisco Bay, excluding the Sacramento–San Joaquin River system; and four artificial propagation programs.	**Not Present** No suitable obligate habitat is present within the survey area.
Oncorhynchus mykiss irideus Steelhead (central California coast DPS)	FT / -- / --	Coastal perennial and near perennial streams, with suitable spawning and rearing habitat and no major barriers.	**Not Present** No suitable obligate habitat is present within the survey area.
Oncorhynchus mykiss irideus Steelhead (south-central California coast DPS)	FT / -- / --	Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams.	**Not Present** No suitable obligate habitat is present within the survey area.
Spirinchus thaleichthys Longfin smelt	FC / ST / --	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefers salinities of 15-30 PPT, but can be found in completely freshwater to almost pure seawater.	**Not Present** No suitable obligate habitat is present within the survey area.
Thaleichthys pacificus Eulachon	FT / -- / --	Small, anadromous fish from the eastern Pacific Ocean, commonly called smelt, candlefish, or hooligan. Typically spend 3 to 5 years in saltwater before returning to freshwater to spawn from late-winter through mid-spring. Occur in nearshore ocean waters and to 1,000 feet (300 m) in depth, except for the brief spawning runs into their natal (birth) streams. Spawning grounds are typically in the lower reaches of larger snowmelt-fed rivers with water temperatures ranging from 39 to 50°F. Spawning occurs over sand or coarse gravel substrates.	**Not Present** No suitable obligate habitat is present within the survey area.
INVERTEBRATES			
Bombus crotchii Crotch bumble bee	-- / SC / --	Occurs in open grassland and scrub at relatively warm and dry sites. Requires plants that bloom and provide adequate nectar and pollen throughout the colony's life cycle, which is from early February to late October. Generally nests underground, often in abandoned mammal burrows. Within California this species is known to occur in the Mediterranean, Pacific Coast, Western Desert, as well as Great Valley and adjacent foothill regions.	**Low** Suitable habitat is present in the scrub habitat within and adjacent to the survey area; however, the limited understory vegetation may not provide adequate nectar for this species. The nearest CNDDB occurrence is located approximately 3.5 miles from the survey area; however, this is a non-specific occurrence from 1994.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Bombus occidentalis Western bumble bee	-- / SC / --	Occurs in open grassy areas, urban parks, urban gardens, chaparral, and meadows. This species generally nest underground. Western bumble bee populations are currently largely restricted to high elevation sites in the Sierra Nevada.	**Unlikely** Suitable habitat is present within the survey area; however, the survey area is outside of the accepted range for this species.
Cicindela ohlone Ohlone tiger beetle	FE / -- / --	Coastal terraces with remnant stands of open native grassland with clay or sandy soils. Hunt, breed, and dig small vertical burrows along sunny single-track trails and dirt roads (maintained by cattle, hikers, etc.) in coast terrace meadows that still support native grasses. Current range from the City of Scotts Valley to the eastern edge of the City of Santa Cruz.	**Not Present** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 11 miles from the survey area.
Danaus plexippus Monarch butterfly	FC / -- / --	Overwinters in coastal California using colonial roosts generally found in Eucalyptus, pine and acacia trees. Overwintering habitat for this species within the Coastal Zone represents ESHA. Local ordinances often protect this species as well.	**Low** Overwintering habitat may be present in Monterey pine forest habitat within the survey area; however, no overwintering populations have been documented within the survey area.
Euphilotes enoptes smithi Smith's blue butterfly	FE / -- / --	Most commonly associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz Counties. Plant hosts are *Eriogonum latifolium* and *E. parvifolium*.	**Not Present** No suitable habitat is present within the survey area. The host plant species were not identified during the March 2023 survey.
Euphydryas editha bayensis Bay checkerspot butterfly	FT / -- / --	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of the San Francisco Bay. *Plantago erecta* is the primary host plant; *Castilleja densiflorus* and *Castilleja exserta* are secondary host plants.	**Not Present** No suitable habitat is present within the survey area. The host plant species were not identified during the March 2023 survey.
Trimerotropis infantilis Zayante band-winged grasshopper	FE / -- / --	Open sandy areas with sparse, low annual and perennial herbs on high ridges with sparse ponderosa pine. Often occurs with Ben Lomond wallflower. Restricted to sand parkland habitat found on ridges and hills within the Zayante sandhills habitat in Santa Cruz County. Flight season extends from late May through August.	**Not Present** No suitable habitat is present within the survey area. The survey area is outside of the accepted range for this species.
PLANTS			
Amsinckia lunaris Bent-flowered fiddleneck	-- / -- / 1B	Coastal bluff scrub, cismontane woodland, and valley and foothill grassland at elevations of 3-500 meters. Annual herb in the Boraginaceae family; blooms March-June.	**Not Present** Suitable habitat is present within the survey area; however, this species was not identified during the March 2023 survey.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Arctostaphylos andersonii Anderson's manzanita	-- / -- / 1B	Openings and edges of broadleaved upland forest, chaparral, and north coast coniferous forest at elevations of 60-760 meters. Evergreen shrub in the Ericaceae family; blooms November-May.	**Not Present** Suitable habitat is present within the survey area; however, this species was not identified during the March 2023 survey.
Arctostaphylos hookeri ssp. *hookeri* Hooker's manzanita	-- / -- / 1B	Closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub on sandy soils at elevations of 85-536 meters. Evergreen shrub in the Ericaceae family; blooms January-June.	**Not Present** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. This species was not identified during the March 2023 survey.
Arctostaphylos pajaroensis Pajaro manzanita	-- / -- / 1B	Chaparral on sandy soils at elevations of 30-760 meters. Evergreen shrub in the Ericaceae family; blooms December-March.	**Not Present** No suitable habitat is present within the survey area and this species was not identified during the March 2023 survey.
Arctostaphylos silvicola Bonny Doon manzanita	-- / -- / 1B	Chaparral, closed-cone coniferous forest, and lower montane coniferous forest on inland marine sands at elevations of 120-600 meters. Evergreen shrub in the Ericaceae family; blooms February-March.	**Not Present** Suitable habitat is present within the survey area; however, the survey area is outside the elevational range for this species. This species was not identified during the March 2023 survey.
Arenaria paludicola Marsh sandwort	FE / SE / 1B	Known from only two natural occurrences in Black Lake Canyon and at Oso Flaco Lake. Sandy openings of freshwater of brackish marshes and swamps at elevations of 3-170 meters. Stoloniferous perennial herb in the Caryophyllaceae family; blooms May-August.	**Not Present** No suitable habitat is present within the survey area. The project site is outside of the accepted range of this species.
Calyptridium parryi var. hesseae Santa Cruz Mountains pussypaws	-- / -- / 1B	Sandy or gravelly openings of chaparral and cismontane woodlands at elevations of 305-1530 meters. Annual herb in the Montiaceae family; blooms May-August.	**Unlikely** Suitable habitat is present within the survey area; however, the survey area is outside of the elevational range for this species.
Carex comosa Bristly sedge	-- / -- / 2B	Coastal prairie, marshes and swamps on lake margins, and valley and foothill grassland at elevations of 0-625 meters. Perennial rhizomatous herb in the Cyperaceae family; blooms May-September.	**Unlikely** No suitable habitat is present within the survey area.
Ceanothus ferrisiae Coyote ceanothus	FE / -- / 1B	Chaparral, coastal scrub, and valley and foothill grassland on serpentinite soils, at elevations of 120-460 meters. Perennial evergreen shrub in the Rhamnaceae family; blooms January-May.	**Not Present** Suitable habitat is present within the survey area; however, the survey area is outside the elevational range for this species. This species was not identified during the March 2023 survey.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	-- / -- / 1B	Valley and foothill grassland on heavy clay, saline, or alkaline soils at elevations of 0-230 meters. Annual herb in the Asteraceae family; blooms May-November.	**Unlikely** Suitable habitat is present within the survey area; however, suitable soil conditions are not present.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Chorizanthe pungens var. *hartwegiana* Ben Lomond spineflower	FE / -- / 1B	Lower montane coniferous forest (maritime ponderosa pine sandhills) at elevations of 90-610 meters. Annual herb in the Polygonaceae family; blooms April-July.	**Not Present** No suitable habitat within the survey area. The survey area is outside of the accepted range for this species.
Chorizanthe pungens var. *pungens* Monterey spineflower	FT / -- / 1B	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on sandy soils at elevations of 3-450 meters. Annual herb in the Polygonaceae family; blooms April-July.	**Low** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 1.1 mile from the survey area.
Chorizanthe robusta var. *hartwegii* Scott's Valley spineflower	FE / -- / 1B	Meadows and seeps on sandy soils and valley and foothill grassland on mudstone and Purisima outcrops at elevations of 230-245 meters. Annual herb in the Polygonaceae family; blooms April-July.	**Unlikely** No suitable habitat within the survey area. The survey area is outside the elevational range for this species.
Chorizanthe robusta var. *robusta* Robust spineflower	FE / -- / 1B	Openings in cismontane woodland, coastal dunes, maritime chaparral, and coastal scrub on sandy or gravelly soils at elevations of 3-300 meters. Annual herb in the Polygonaceae family; blooms April-September.	**Low** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 0.1 mile from the survey area; however, this occurrence is mapped generally as the Ellicott Slough National Wildlife Refuge.
Cirsium fontinale var. campylon Mount Hamilton fountain thistle	-- / -- / 1B	Chaparral, cismontane woodland, and valley and foothill grassland on serpentinite seeps, at elevations of 100-890 meters. Perennial herb in the Asteraceae family; blooms February-October.	**Not Present** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. This species was not identified during the March 2023 survey.
Cordylanthus rigidus ssp. *littoralis* Seaside bird's-beak	-- / SE / 1B	Closed-cone coniferous forests, maritime chaparral, cismontane woodlands, coastal dunes, and coastal scrub on sandy soils, often on disturbed sites, at elevations of 0-425 meters. Annual hemi-parasitic herb in the Orobanchaceae family; blooms April-October.	**Low** Suitable habitat is present within the survey area; however, only marginal soil conditions are present. The nearest CNDDB occurrence is located approximately eight miles from the survey area.
Dudleya abramsii ssp. setchellii Santa Clara Valley dudleya	-- / -- / 1B	Cismontane woodland and valley and foothill grasslands on rocky serpentinite soils, at elevations of 60-455 meters. Perennial herb in the Crassulaceae family; blooms April-October.	**Unlikely** Suitable habitat is present within the survey area; however, suitable soil conditions are not present.
Ericameria fasciculata Eastwood's goldenbush	-- / -- / 1B	Openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub on sandy soils at elevations of 30-275 meters. Evergreen shrub in the Asteraceae family; blooms July-October.	**Low** Suitable habitat is present within the survey area; however, only marginal soil conditions are present. The nearest CNDDB occurrence is located approximately ten miles from the survey area.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Eriogonum nudum var. decurrens Ben Lomond buckwheat	-- / -- / 1B	Chaparral, cismontane woodland, and lower montane coniferous forest (maritime ponderosa pine sandhills) on sandy soils, at elevations of 50-800 meters. Perennial herb in the Polygonaceae family; blooms June-October.	**Not Present** No suitable habitat within the survey area. The survey area is outside of the accepted range for this species.
Eryngium aristulatum var. hooveri Hoover's button-celery	-- / -- / 1B	Vernal pools at elevations of 3-45 meters. Annual/perennial herb in the Apiaceae family; blooms June-August.	**Unlikely** No suitable habitat within the survey area.
Erysimum ammophilum Sand-loving wallflower	-- / -- / 1B	Openings in maritime chaparral, coastal dunes, and coastal scrub on sandy soils at elevations of 0-60 meters. Perennial herb in the Brassicaceae family; blooms February-June.	**Not Present** No suitable habitat is present within the survey area and this species was not identified during the March 2023 survey.
Erysimum teretifolium Santa Cruz wallflower	FE / SE / 1B	Chaparral and lower montane coniferous forest on inland marine sands, at elevations of 120-610 meters. Perennial herb in the Brassicaceae family; blooms March-July.	**Not Present** No suitable habitat within the survey area and the survey area is outside of the accepted range for this species.
Fissidens pauperculus Minute pocket moss	-- / -- / 1B	North coast coniferous forest on gravely dried stream beds and damp coastal soil at elevations of 10-1024 meters. Moss in the Fissidentaceae family.	**Low** Suitable habitat is present in the Monterey pine forest habitat within the survey area; however, there is only one CNDDB occurrence within the quadrangles evaluated, located approximately ten miles from the survey area.
Fritillaria liliacea Fragrant fritillary	-- / -- / 1B	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often serpentinite, at elevations of 3-410 meters. Bulbiferous perennial herb in the Liliaceae family; blooms February-April.	**Not Present** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. This species was not identified during the March 2023 survey.
Gilia tenuiflora ssp. *arenaria* Monterey gilia	FE / ST / 1B	Openings in maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub on sandy soils at elevations of 0-45 meters. Annual herb in the Polemoniaceae family; blooms April-June.	**Unlikely** Suitable habitat is present within the survey area; however, only marginal soil conditions are present. The nearest CNDDB occurrence is located approximately 12 miles from the survey area.
Hoita strobilina Loma Prieta hoita	-- / -- / 1B	Mesic areas of chaparral, cismontane woodland, and riparian woodland, usually on serpentinite soils, at elevations of 30-860 meters. Perennial herb in the Fabaceae family; blooms May-October.	**Unlikely** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. The nearest CNDDB occurrence is located approximately 13 miles from the survey area.
Holocarpha macradenia Santa Cruz tarplant	FT / SE / 1B	Coastal prairies and valley foothill grasslands, often clay or sandy soils, at elevations of 10-220 meters. Annual herb in the Asteraceae family; blooms June-October.	**Unlikely** No suitable habitat is present within the survey area.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Horkelia cuneata var. *sericea* Kellogg's horkelia	-- / -- / 1B	Openings of closed-cone coniferous forests, maritime chaparral, coastal dunes, and coastal scrub on sandy or gravelly soils at elevations of 10-200 meters. Perennial herb in the Rosaceae family; blooms April-September.	**Low** No suitable habitat is present within the survey area. The nearest CNDDB occurrence is located approximately 1.1 mile from the survey area.
Lasthenia californica ssp. *macrantha* Perennial goldfields	-- / -- / 1B	Coastal bluff scrub, coastal dunes, and coastal scrub at an elevation of 5-520 meters. Perennial herb in the Asteraceae family. Blooms January-November.	**Unlikely** No suitable habitat is present within the survey area and this species was not identified during the March 2023 survey.
Lessingia micradenia var. glabrata Smooth lessingia	-- / -- / 1B	Chaparral and cismontane woodlands on serpentinite soils, often on roadsides, at elevations of 120-420 meters. Annual herb in the Asteraceae family; blooms July-November.	**Unlikely** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. The survey area is outside the elevational range for this species.
Malacothamnus arcuatus Arcuate bush-mallow	-- / -- / 1B	Chaparral and cismontane woodland at elevations of 15-355 meters. Perennial evergreen shrub in the Malvaceae family; blooms April-September.	**Low** Suitable habitat is present in the wooded habitats within the survey area; however, the nearest CNDDB occurrence is located approximately 15 miles from the survey area.
Monardella sinuata ssp. *nigrescens* Northern curly-leaved monardella	-- / -- /1B	Chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest (ponderosa pine sandhills) on sandy soils at elevations of 0-300 meters. Annual herb in the Lamiaceae family; blooms April-September.	**Unlikely** No suitable habitat within the survey area.
Monolopia gracilens Woodland wollythreads	-- / -- / 1B	Openings of broadleaved upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland on serpentinite soils at elevations of 100-1200 meters. Annual herb in the Asteraceae family; blooms February-July.	**Not Present** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. This species was not identified during the March 2023 survey.
Pedicularis dudleyi Dudley's lousewort	-- / SR / 1B	Maritime chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland at elevations of 60-900 meters. Perennial herb in the Orbanchaceae family; blooms April-June.	**Low** Suitable habitat is present within the survey area; however, there is only one CNDDB occurrence within the quadrangles reviewed. This occurrence is a historical occurrence from 1884 listed as possibly extirpated.
Penstemon rattanii var. *kleei* Santa Cruz Mountains beardtongue	-- / -- / 1B	Chaparral and lower montane and North Coast coniferous forests at elevations of 400-1100 meters. Perennial herb in the Plantaginaceae family; blooms May-June.	**Unlikely** No suitable habitat is present within the survey area. The survey area is outside the elevational range for this species.

Species	Status (Service/CDFW/CNPS)	General Habitat	Potential Occurrence within Survey Area
Pentachaeta bellidiflora White-rayed pentachaeta	FE / SE / 1B	Cismontane woodland and valley and foothill grasslands, often on serpentinite soils, at elevations of 35-620 meters. Annual herb in the Asteraceae family; blooms March-May.	**Not Present** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. This species was not identified during the March 2023 survey.
Piperia yadonii Yadon's rein orchid	FE / -- / 1B	Sandy soils in coastal bluff scrub, closed-cone coniferous forest, and maritime chaparral at elevations of 10-510 meters. Annual herb in the Orchidaceae family; blooms February-August.	**Not Present** Suitable habitat is present within the survey area; however, only marginal soil conditions are present. This species was not identified during the March 2023 survey.
Plagiobothrys chorisianus var. *chorisianus* Choris' popcorn-flower	-- / -- / 1B	Mesic areas of chaparral, coastal prairie, and coastal scrub at elevations of 15-160 meters. Annual herb in the Boraginaceae family; blooms March-June.	**Not Present** No suitable habitat is present within the survey area and this species was not identified during the March 2023 survey.
Plagiobothrys diffusus San Francisco popcorn-flower	-- / SE / 1B	Coastal prairie and valley and foothill grassland at elevations of 60-360 meters. Annual herb in the Boraginaceae family; blooms March-June.	**Not Present** No suitable habitat is present within the survey area and this species was not identified during the March 2023 survey.
Polygonum hickmanii Scotts Valley polygonum	FE / SE / 1B	Valley and foothill grassland on mudstone and sandstone at elevations of 210-250 meters. Annual herb in the Polygonaceae family; blooms: May-August.	**Unlikely** No suitable habitat within the survey area. The survey area is outside the elevational range for this species.
Rosa pinetorum Pine rose	-- / -- / 1B	Closed-cone coniferous forest at elevations of 2-300 meters. Perennial shrub in the Rosaceae family; blooms May-July. Possible hybrid of *R. spithamea*, *R. gymnocarpa*, or others; further study needed.	**Low** Suitable habitat is present within the survey area; however, there is only one CNDDB occurrence of this species within the quadrangles reviewed, located approximately 16 miles from the survey area.
Trifolium buckwestiorum Santa Cruz clover	-- / -- / 1B	Gravelly margins of broadleaved upland forest, cismontane woodland, and coastal prairie at elevations of 105-610 meters. Annual herb in the Fabaceae family; blooms April-October.	**Unlikely** Suitable habitat is present within the survey area; however, suitable soil conditions are not present. The survey area is outside the elevational range for this species.
Trifolium hydrophilum Saline clover	-- / -- / 1B	Marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools at elevations of 0-300 meters. Annual herb in the Fabaceae family; blooms April-June.	**Unlikely** No suitable habitat within the survey area.
Trifolium polyodon Pacific Grove clover	-- / SR / 1B	Mesic areas of closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland at elevations of 5-120 meters. Annual herb in the Fabaceae family; blooms April-July.	**Low** Suitable habitat is present within the survey area; however, there is only one CNDDB occurrence of this species within the quadrangles reviewed, located approximately 16 miles from the survey area.

STATUS DEFINITIONS

Federal

FE = listed as Endangered under the federal Endangered Species Act
FT = listed as Threatened under the federal Endangered Species Act
FC = Candidate for listing under the federal Endangered Species Act
UR = Species that have been petitioned for listing under the ESA and for which a 90 day and/or 12 Month finding has not been published in the Federal Register, as well as species being reviewed through the candidate process but the CNOR has not yet been signed
-- = no listing

State

SE = listed as Endangered under the California Endangered Species Act
ST = listed as Threatened under the California Endangered Species Act
SC = Candidate for listing under California Endangered Species Act
SR = listed as Rare under the California Endangered Species Act
CFP = California Fully Protected Species
CSC = CDFW Species of Concern
-- = no listing

California Native Plant Society

1B = California Rare Plant Rank 1B species; plants rare, threatened, or endangered in California and elsewhere
2B = California Rare Plant Rank 2B species; plants rare, threatened, or endangered in California, but more common elsewhere
-- = no listing

POTENTIAL TO OCCUR

Present = known occurrence of species within the site; presence of suitable habitat conditions; or observed during field surveys
High = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of suitable habitat conditions
Moderate = known occurrence of species in the vicinity from the CNDDB or other documentation; presence of marginal habitat conditions within the site
Low = species known to occur in the vicinity from the CNDDB or other documentation; lack of suitable habitat or poor quality
Unlikely = species not known to occur in the vicinity from the CNDDB or other documentation, no suitable habitat is present within the site
Not Present = species was not observed during surveys

This page was left intentionally blank

APPENDIX B

CALIFORNIA NATURAL DIVERSITY DATABASE REPORT

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Laurel (3712118) OR Loma Prieta (3712117) OR Mt. Madonna (3712116) OR Soquel (3612188) OR Watsonville East (3612186) OR Watsonville West (3612187) OR Moss Landing (3612177) OR Prunedale (3612176))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Accipiter cooperii	ABNKC12040	None	None	G5	S4	WL
Cooper's hawk						
Adela oplerella	IILEE0G040	None	None	G2	S2	
Opler's longhorn moth						
Agelaius tricolor	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
tricolored blackbird						
Ambystoma californiense pop. 1	AAAAA01181	Threatened	Threatened	G2G3T3	S3	WL
California tiger salamander - central California DPS						
Ambystoma macrodactylum croceum	AAAAA01082	Endangered	Endangered	G5T1T2	S1S2	FP
Santa Cruz long-toed salamander						
Amsinckia lunaris	PDBOR01070	None	None	G3	S3	1B.2
bent-flowered fiddleneck						
Aneides niger	AAAAD01070	None	None	G3	S3	SSC
Santa Cruz black salamander						
Anniella pulchra	ARACC01020	None	None	G3	S2S3	SSC
Northern California legless lizard						
Antrozous pallidus	AMACC10010	None	None	G4	S3	SSC
pallid bat						
Aquila chrysaetos	ABNKC22010	None	None	G5	S3	FP
golden eagle						
Arctostaphylos andersonii	PDERI04030	None	None	G2	S2	1B.2
Anderson's manzanita						
Arctostaphylos hookeri ssp. hookeri	PDERI040J1	None	None	G3T2	S2	1B.2
Hooker's manzanita						
Arctostaphylos pajaroensis	PDERI04100	None	None	G1	S1	1B.1
Pajaro manzanita						
Arctostaphylos silvicola	PDERI041F0	None	None	G1	S1	1B.2
Bonny Doon manzanita						
Asio flammeus	ABNSB13040	None	None	G5	S3	SSC
short-eared owl						
Athene cunicularia	ABNSB10010	None	None	G4	S3	SSC
burrowing owl						
Bombus caliginosus	IIHYM24380	None	None	G2G3	S1S2	
obscure bumble bee						

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G2	S2	
Bombus occidentalis western bumble bee	IIHYM24252	None	Candidate Endangered	G3	S1	
Calyptridium parryi var. hesseae Santa Cruz Mountains pussypaws	PDPOR09052	None	None	G3G4T2	S2	1B.1
Carex comosa bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
Ceanothus ferrisiae Coyote ceanothus	PDRHA041N0	Endangered	None	G1	S1	1B.1
Centromadia parryi ssp. congdonii Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1
Charadrius nivosus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S3	SSC
Chorizanthe pungens var. hartwegiana Ben Lomond spineflower	PDPGN040M1	Endangered	None	G2T1	S1	1B.1
Chorizanthe pungens var. pungens Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2
Chorizanthe robusta var. hartwegii Scotts Valley spineflower	PDPGN040Q1	Endangered	None	G2T1	S1	1B.1
Chorizanthe robusta var. robusta robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
Cicindela ohlone Ohlone tiger beetle	IICOL026L0	Endangered	None	G1	S1	
Cirsium fontinale var. campylon Mt. Hamilton thistle	PDAST2E163	None	None	G2T2	S2	1B.2
Clarkia concinna ssp. automixa Santa Clara red ribbons	PDONA050A1	None	None	G5?T3	S3	4.3
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Cordylanthus rigidus ssp. littoralis seaside bird's-beak	PDSCR0J0P2	None	Endangered	G5T2	S2	1B.1
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
Coturnicops noveboracensis yellow rail	ABNME01010	None	None	G4	S1S2	SSC
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T1T2Q	S2	
Dicamptodon ensatus California giant salamander	AAAAH01020	None	None	G2G3	S2S3	SSC
Dipodomys venustus venustus Santa Cruz kangaroo rat	AMAFD03042	None	None	G4T1	S1	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Dudleya abramsii ssp. setchellii Santa Clara Valley dudleya	PDCRA040Z0	Endangered	None	G4T2	S2	1B.1
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Ericameria fasciculata Eastwood's goldenbush	PDAST3L080	None	None	G2	S2	1B.1
Eriogonum nudum var. decurrens Ben Lomond buckwheat	PDPGN08492	None	None	G5T1	S1	1B.1
Eryngium aristulatum var. hooveri Hoover's button-celery	PDAPI0Z043	None	None	G5T1	S1	1B.1
Erysimum ammophilum sand-loving wallflower	PDBRA16010	None	None	G2	S2	1B.2
Erysimum teretifolium Santa Cruz wallflower	PDBRA160N0	Endangered	Endangered	G1	S1	1B.1
Eucyclogobius newberryi tidewater goby	AFCQN04010	Endangered	None	G3	S3	
Euphilotes enoptes smithi Smith's blue butterfly	IILEPG2026	Endangered	None	G5T1T2	S2	
Euphydryas editha bayensis Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S3	
Falco peregrinus anatum American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
Fissidens pauperculus minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
Fritillaria liliacea fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
Gilia tenuiflora ssp. arenaria Monterey gilia	PDPLM041P2	Endangered	Threatened	G3G4T2	S2	1B.2
Gonidea angulata western ridged mussel	IMBIV19010	None	None	G3	S2	
Hesperoleucus venustus subditus southern coastal roach	AFCJB19032	None	None	GNRT2	S2	SSC
Hoita strobilina Loma Prieta hoita	PDFAB5Z030	None	None	G2?	S2?	1B.1
Holocarpha macradenia Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
Horkelia cuneata var. sericea Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
Lasthenia californica ssp. macrantha perennial goldfields	PDAST5L0C5	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Lavinia exilicauda harengus Monterey hitch	AFCJB19013	None	None	G4T3	S3	SSC
Lessingia micradenia var. glabrata smooth lessingia	PDAST5S062	None	None	G2T2	S2	1B.2
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Malacothamnus arcuatus arcuate bush-mallow	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
Monardella sinuata ssp. nigrescens northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2
Monolopia gracilens woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	AMAFF08082	None	None	G5T2T3	S2S3	SSC
Oncorhynchus kisutch pop. 4 coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G5T2Q	S2	
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S3	
Oncorhynchus mykiss irideus pop. 9 steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	
Pandion haliaetus osprey	ABNKC01010	None	None	G5	S4	WL
Pedicularis dudleyi Dudley's lousewort	PDSCR1K180	None	Rare	G2	S2	1B.2
Penstemon rattanii var. kleei Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	G4T2	S2	1B.2
Pentachaeta bellidiflora white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3	S4	SSC
Piperia yadonii Yadon's rein orchid	PMORC1X070	Endangered	None	G1	S1	1B.1
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
Plagiobothrys diffusus San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
Polygonum hickmanii Scotts Valley polygonum	PDPGN0L310	Endangered	Endangered	G1	S1	1B.1
Rallus obsoletus obsoletus California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	AAABH01054	Proposed Threatened	Endangered	G3T2	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Rana draytonii California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
Reithrodontomys megalotis distichlis Salinas harvest mouse	AMAFF02032	None	None	G5T1	S2	
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Rosa pinetorum pine rose	PDROS1J0W0	None	None	G2	S2	1B.2
Scaphinotus behrensi Behrens' snail-eating beetle	IICOL4L070	None	None	G2G4	S2S4	
Sorex ornatus salarius Monterey shrew	AMABA01105	None	None	G5T1T2	S1S2	SSC
Spirinchus thaleichthys longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
Streptanthus albidus ssp. peramoenus most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC
Thaleichthys pacificus eulachon	AFCHB04010	Threatened	None	G5	S1	
Trifolium buckwestiorum Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
Trifolium hydrophilum saline clover	PDFAB400R5	None	None	G2	S2	1B.2
Trifolium polyodon Pacific Grove clover	PDFAB402H0	None	Rare	G1	S1	1B.1
Trimerotropis infantilis Zayante band-winged grasshopper	IIORT36030	Endangered	None	G1	S1	
Tryonia imitator mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	

Record Count: 95

Appendix C

CalEEMod Results
Renaissance High School
Water System
Improvements Project
Summary Report

This Page was Intentionally Left Blank

CalEEMod Results
Renaissance High School Water System Improvements Project Summary Report

Renaissance High School Summary Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Renaissance High School
Construction Start Date	5/1/2024
Lead Agency	Pajaro Valley Unified School District
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	1.80
Precipitation (days)	15.8
Location	36.92689447641979, -121.84818716260044
County	Santa Cruz
City	Unincorporated
Air District	Monterey Bay ARD
Air Basin	North Central Coast
TAZ	3128
EDFZ	6
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
User Defined Linear	0.24	Mile	0.06	0.00	—	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.47	0.39	9.64	10.7	0.04	0.44	462	462	0.40	46.1	46.3	—	3,570	3,570	0.30	0.43	4.83	3,711
Mit.	0.47	0.39	9.64	10.7	0.04	0.44	461	461	0.40	46.1	46.3	—	3,570	3,570	0.30	0.43	4.83	3,711
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.04	0.03	0.87	0.94	< 0.005	0.04	6.05	6.09	0.03	0.60	0.64	—	198	198	0.01	0.01	0.03	200
Mit.	0.04	0.03	0.87	0.94	< 0.005	0.04	6.04	6.08	0.03	0.60	0.64	—	198	198	0.01	0.01	0.03	200
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.01	0.01	0.16	0.17	< 0.005	0.01	1.10	1.11	0.01	0.11	0.12	—	32.7	32.7	< 0.005	< 0.005	< 0.005	33.1
Mit.	0.01	0.01	0.16	0.17	< 0.005	0.01	1.10	1.11	0.01	0.11	0.12	—	32.7	32.7	< 0.005	< 0.005	< 0.005	33.1
% Reduced	—	—	—	—	—	—	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	—	—	—	—	—	—

6. Climate Risk Detailed Report

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.

7. Health and Equity Details

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	69.0
Healthy Places Index Score for Project Location (b)	66.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.