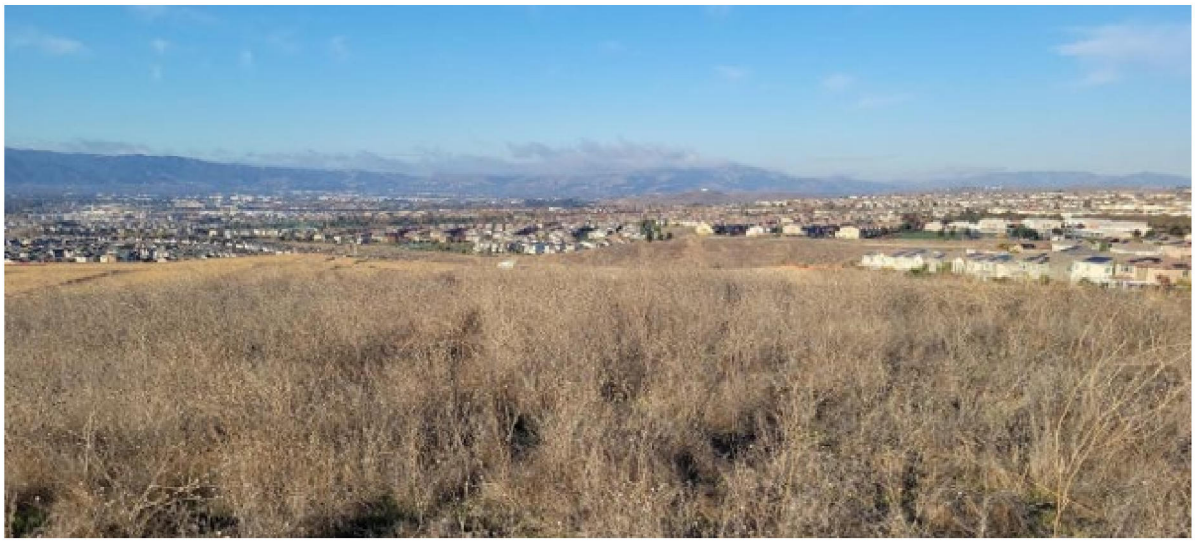


Reservoir 20B Project

Draft Initial Study – Mitigated Negative Declaration

prepared by

Dublin San Ramon Services District
7051 Dublin Boulevard
Dublin, California 94568
Contact: Jason Ching, PE

prepared with the assistance of

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

August 2024

RINCON CONSULTANTS, INC. SINCE 1994

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Initial Study

1. Proposed Project Title

Reservoir 20B Project

2. Lead Agency/Project Sponsor and Contact

Lead Agency/Project Sponsor

Dublin San Ramon Services District
7051 Dublin Boulevard
Dublin, California 94568

Contact Person

Jason Ching, PE, Senior Engineer
925-875-2263
ching@dsrsd.com

3. Scope and Use of this Document

This Initial Study-Mitigated Negative Declaration (IS-MND) provides an assessment of the potential impacts related to environmental resources that would result from constructing and operating the proposed Reservoir 20B Project (herein referred to as "proposed project" or "project"). The discussion and level of analysis are commensurate with the expected magnitude and severity of impacts related to specific environmental resources. This document addresses the environmental impacts related to installation, use, and maintenance of water storage and conveyance infrastructure. The analyses in the following sections are based on technical reports and studies prepared for the proposed project, which are included as appendices, supplemented with other public information sources as provided in the list of references.

This IS-MND evaluates the potential for impacts related to resources areas identified in Appendix G of the 2024 California Environmental Quality Act (CEQA) Guidelines. These resource areas include:

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

4. Project Location and Physical Setting

Regional Location and Setting

The Dublin San Ramon Services District (District) service area includes the City of Dublin (water and wastewater services), south San Ramon (wastewater services only), Dougherty Valley (water services only), and City of Pleasanton (contracted wastewater services only) within Contra Costa and Alameda Counties in the San Francisco Bay Area, and the project site is located in the City of Dublin. The City of Dublin lies within the Tri-Valley area, which also includes the City of Livermore, City of San Ramon, Town of Danville, and unincorporated portions of Alameda and Contra Costa Counties. Regional vehicular access is primarily provided by I-580 and I-680. The regional project location is shown in Figure 1.

Local Setting

The proposed project is located within the proposed East Ranch Development site, which is a planned residential development located on the west and east sides of Croak Road, south of South Terracina Drive. The project site is located within the City of Dublin near Dublin's eastern border and portions of unincorporated Alameda County, California, along the northern boundary of Assessor's Parcel Number (APN) 905-0002-002-00. Specifically, the undeveloped project site covers a total of approximately 12.2 acres of grassland and is located approximately 350 feet south of South Terracina Drive and 0.25 mile east of Croak Road. The project location is shown in Figure 2.

The project site is bordered by other portions of the City of Dublin to the north and west and unincorporated Alameda County to the east and south. Local vehicular access to the project site is primarily provided by Terracina Drive and Croak Road. Public transit in the vicinity of the site includes local school bus routes 2 and 502, which serve Fallon Middle School, Emerald Glen, Wells Middle School, and Dublin High School.

5. Surrounding Land Uses

Single-family residential land uses are located north and west of the project site, and undeveloped open space areas are located to the east and south. The undeveloped area south of the project site would eventually be developed as part of the planned East Ranch Development, which was approved in November 2021 by the City of Dublin Planning Commission.

6. General Plan Designation and Zoning

The project site has a City of Dublin General Plan designation of Parks/Public Recreation. The project site is zoned as City of Dublin Planned Development (PD).

Figure 1 Regional Location

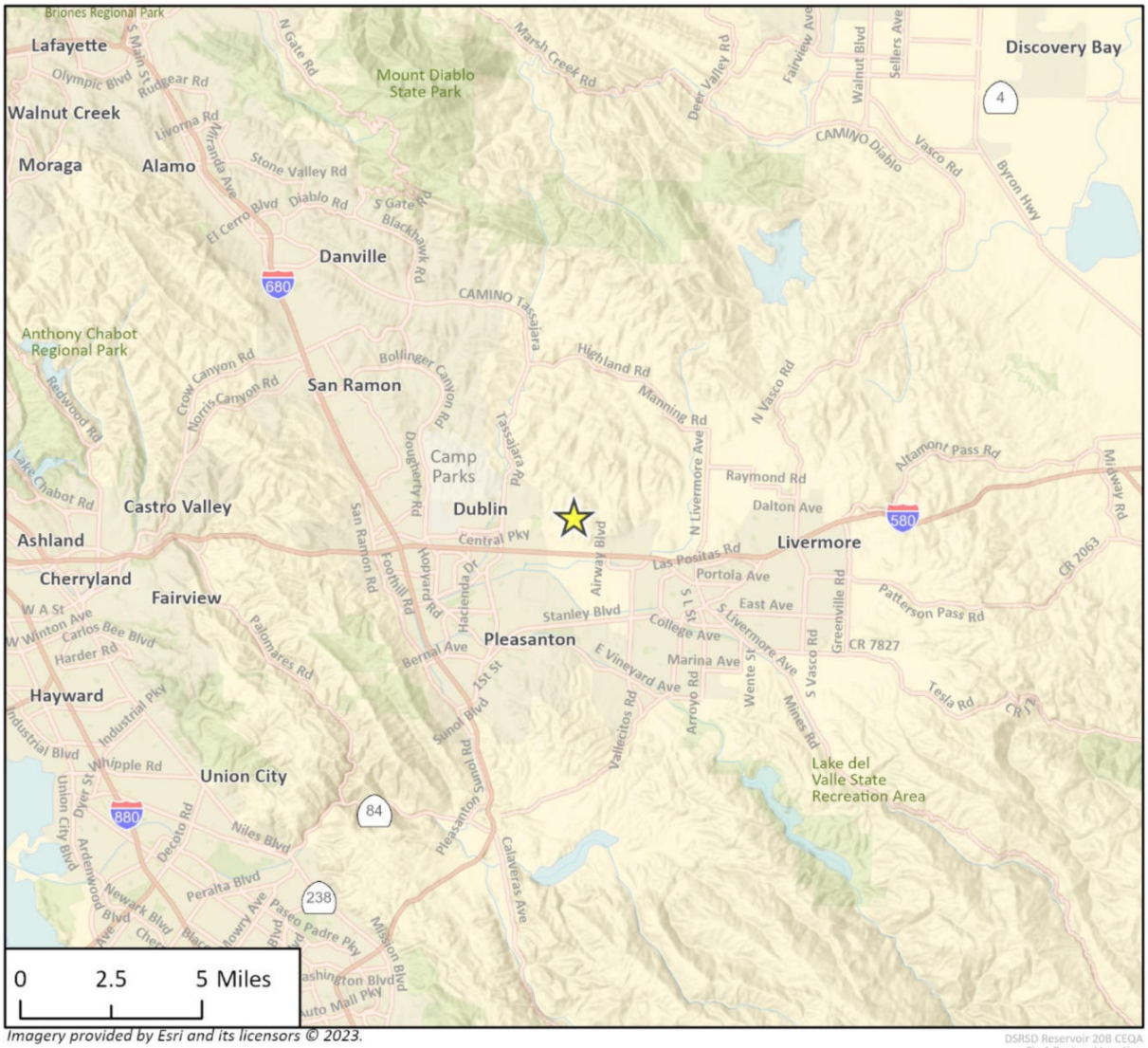
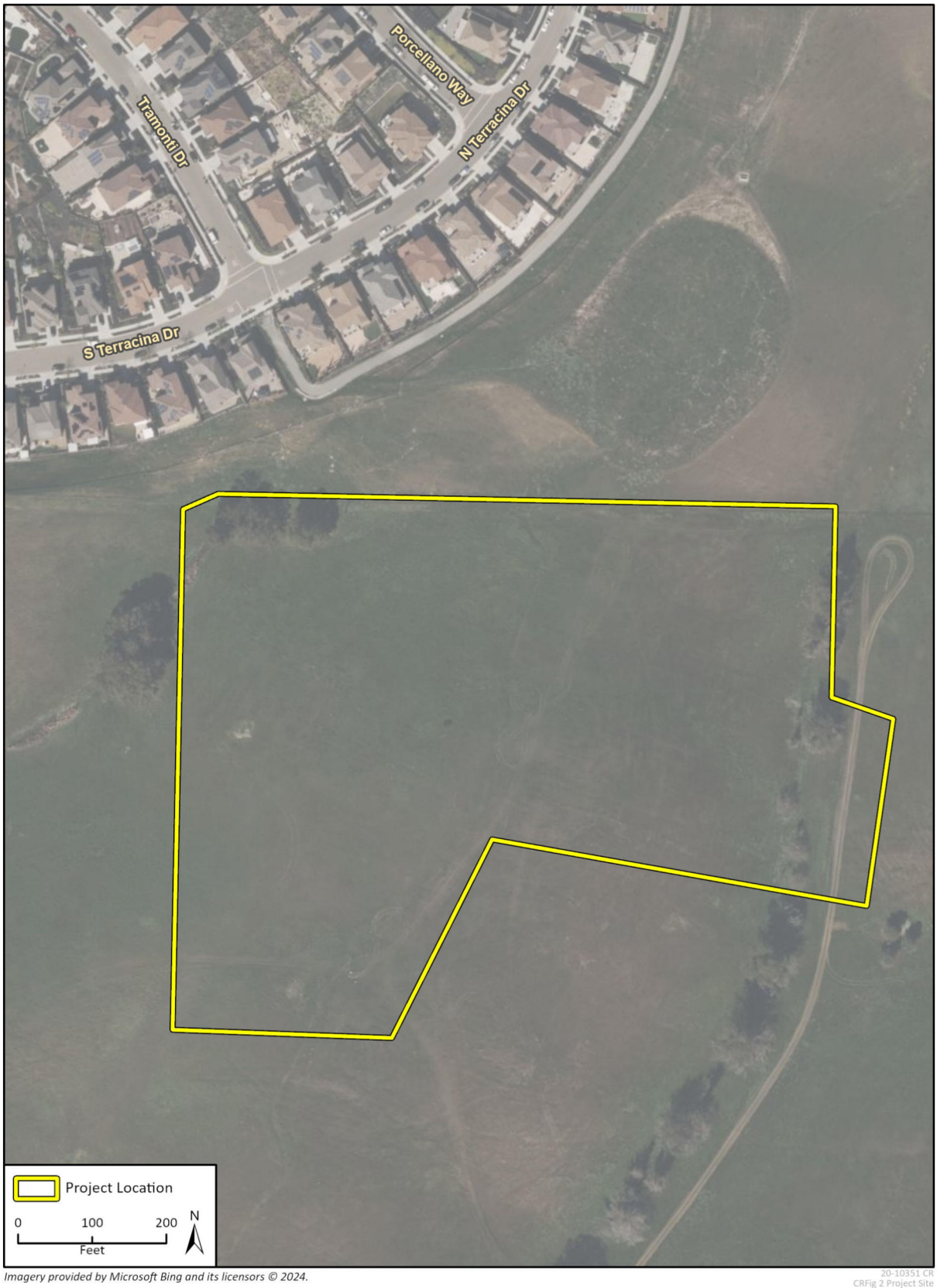


Figure 2 Project Location



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20-10351 CR
CRFig 2 Project Site

7. Project Background

In 2016, the District updated its Water Master Plan and identified the need to add additional potable water storage to the Zone 20 Pressure Zone in eastern Dublin. Currently, this pressure zone is served by one 3.3-million-gallon reservoir. To support Dublin planned development in this area, the District identified that a new reservoir (Reservoir 20B) with a storage volume of 1.3 million gallons would be needed in this pressure zone to support the East Ranch Development, a 573-unit single family residential development project proposed in APN 905-0002-002-00, and other future development in eastern Dublin.

8. Description of Project

The project would involve installation of Reservoir 20B, a pre-stressed concrete reservoir with a storage capacity of approximately 1.3 million gallons.[1] The reservoir would have a diameter of approximately 102 feet and footprint of approximately 17,500 square feet. The reservoir would be located in APN 905-0002-002-00, underground at the top of a hill within the project site. At this location at the top of the hill, the reservoir would have a similar floor (pad) elevation (670 feet above mean sea level) to that of existing Reservoir 20A located approximately 1.4 miles northwest of the project site, so that the hydraulic gradient throughout the District Zone 20 system remain consistent.

The project would involve installation of an access staircase, as shown in Figure 3. It is noted that a paved access road to the project site would not be constructed at this time; however, a potential future access road connecting to a cul-de-sac associated with the East Ranch development project is considered in this IS-MND.

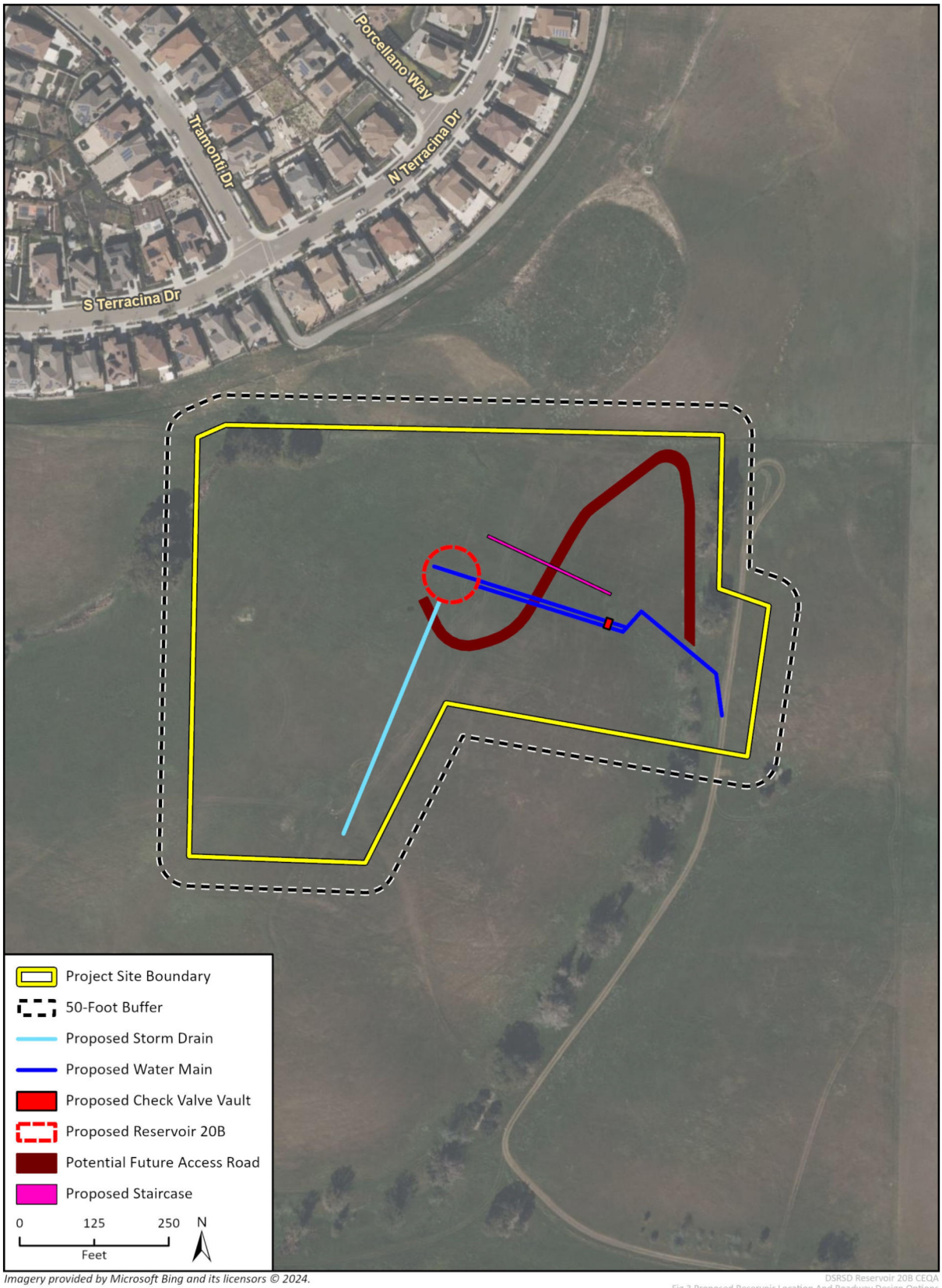
The project also includes an approximately 425-linear foot new storm drain pipeline that would connect to a planned storm drain inlet of the East Ranch Development located south of the proposed storage tank. An approximately 1,000-linear foot new water supply main, including a check valve vault, would also be constructed between the proposed storage tank and proposed water main of the East Ranch Development located southeast of the proposed tank.

Construction

The hilltop where the reservoir would be located would be graded to create a temporary construction pit for installation of the reservoir. The reservoir would require approximately 30,000 cubic yards of cut soil, of which approximately 26,000 cubic yards would be used as fill material, for a total soil export of approximately 12,000 cubic yards. Excavation to a depth of 35 feet would be required for the reservoir installation. In addition, construction of the proposed concrete staircase would result in a net export of approximately 9,000 cubic yards of soil. The potential future access road could result in a net soil export of approximately 4,000 cubic yards.

[1] The District will determine a final optimal reservoir capacity.

Figure 3 Proposed Project Components



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DSRSD Reservoir 20B CEQA
Fig 3 Proposed Reservoir Location And Roadway Design Options

Construction is anticipated to last up to approximately 15 months, with 1 month for grading, 2 to 3 weeks for site preparation, 1 month for pipeline and staircase installation, 10 months for reservoir installation, and 2 weeks for final ground restoration. Pipelines would be constructed via open trenching. The construction contract would be required by DSRSD to implement best management practices, such as watering exposed soils daily, preservation of existing vegetation, sediment control, and tracking control.

Once construction of the reservoir is complete, soil would be backfilled over the reservoir to restore the existing hilltop topography, and the reservoir would be located underground.

Operation

During operation, the reservoir would require approximately 104 vehicle trips per year (reflecting two one-way trips per month) for maintenance purposes.

9. Cumulative Projects Scenario

For purposes of CEQA cumulative impacts analysis, the cumulative projects scenario would include the construction and operation of the proposed project in addition to construction and operation of the following projects proposed within the project vicinity (approximately one mile):

- Francis Ranch (East Ranch)
- Dublin Fallon 580
- Righetti Property
- Branaugh Property

Projects included in the cumulative projects scenario and cumulative impacts are provided in Table 1 and shown in Figure 4.

Table 1 Cumulative Development Projects

No.	Project Name	Project Location	Project Components	Status
1	Francis Ranch (East Ranch)	4038 Croak Road, immediately surrounding project site	Site development of 165.5 acres with 573 residential units within six neighborhoods	Under construction
2	Righetti Property	Collier Canyon Road, 0.7 mile south of the project site	Subdivision of the 49.6-acre site into four parcels to accommodate residential, industrial, commercial, and office development	Application under review
3	Branaugh Property	1881 Collier Canyon Road, 0.8 mile south of the project site	Construction of 78 to 97 medium-density residential units and an industrial development on a 40-acre site	Project approved by the City in February 2023
4	Dublin Fallon 580	East of Fallon Road, 0.9 mile southwest of the project site	Subdivision of 192 acres into nine parcels to accommodate commercial, campus office, multi-family residential, and park uses.	Application under review

Source: City of Dublin 2024a; Office of Planning and Research 2024

Figure 4 Cumulative Projects



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DSRSD Reservoir 20B CEQA
Fig X Cumulative Project Locations

10. Assembly Bill 52 Consultation

On January 24, 2023, the District sent letters to representatives of tribes who have requested Assembly Bill 52 (AB 52) consultation, including the Amah Mutsun Tribal Band of Mission San Juan Bautista, Costanoan Rumsen Carmel Tribe, Indian Canyon Mutsun Band of Costanoan, Muwekma Ohlone Indian Tribe of the SF Bay Area, North Valley Yokuts Tribe, the Confederated Villages of Lisjan, the Ohlone Indian Tribe, Wilton Rancheria Tribe, and Wuksache Indian Tribe/Eshom Valley Band. Additional detail regarding responses and recommendations of tribal representatives is included in Environmental Checklist Section 18, *Tribal Cultural Resources.*

11. Required Approvals

District

As the lead agency for the proposed project, the District-required approvals include:

- Adoption of this IS-MND; and
- Approval of the project and project grading plan.

Other Public Agencies

The District has sole approval authority regarding the proposed project and this related IS-MND.

An Incidental Take Permit from the California Department of Fish and Wildlife may be required for project construction purposes pursuant to California Fish and Game Code Section 2081. Refer to Environmental Checklist Section 4, *Biological Resources* for further discussion details.

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Environmental Factors Potentially Affected

This project would potentially affect the environmental factors checked below, involving at least one impact that is "Potentially Significant" or "Less than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

Determination

Based on this initial evaluation:

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

■ I find 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 to the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

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

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

Signature	Date
Jan R. Lee	General Manager
Printed Name	Title

Environmental Checklist

1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	■	☐
b. Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	■
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a 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 that would adversely affect daytime or nighttime views in the area?	☐	☐	■	☐

a. Would the project have a substantial adverse effect on a scenic vista?

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the public benefit. Although the Dublin General Plan does not define or identify scenic vistas, the Dublin General Plan Circulation/Scenic Highways and Land Use Elements establish policies to minimize impacts of development to County-designated scenic routes (City of Dublin 2022). Alameda County-designated scenic routes include Interstate (I-) 580, I-680, San Ramon Road, Dougherty Road, and Tassajara Road. Additionally, the Dublin General Plan Scenic Highways Element notes that the City intends to designate Fallon Road as a scenic route once it is extended north to connect with Tassajara Road (City of Dublin 2022). The nearest designated scenic routes to the project site are I-580, located approximately one mile south, and Fallon Road, located approximately 0.8 mile west. The project site is not visible from either route due to intervening features such as topography, vegetation, and development.

The project site is undeveloped and adjacent to existing and planned residential developments. Nearby roadways, sidewalks, and pathways provide public views of the project site and long-range

views of surrounding hillsides to the northeast and west. The project would involve construction and operation of a buried water reservoir and associated infrastructure, including underground water pipelines and a staircase. During construction, equipment and worker vehicles would be visible from surrounding public roadways, associated sidewalks, and pathways. However, construction and equipment staging would be temporary, and views of open space and hillsides would return to their existing conditions once construction is completed. The project would also not involve permanent aboveground reservoir features, and the proposed staircase would not have a substantial adverse effect on publicly accessible views of open space and hillsides. Therefore, the project would result in a less-than-significant impact related to effects on a scenic vista.

LESS THAN SIGNIFICANT IMPACT

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

Scenic resources are trees, rock outcroppings, ridgelines, water bodies, and historic buildings. The nearest officially designated State scenic highway is Interstate 680 (I-680), which is located approximately 5 miles west of the project site (California Department of Transportation [Caltrans] 2019). The project site is not visible from I-680 due to distance and intervening development and topography. Furthermore, there are no scenic resources on the project site. As such, the project could not substantially damage scenic resources. Therefore, the project would result in no impact related to scenic resources within a State scenic highway.

NO IMPACT

c. Would the project, 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 a 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?

The project site is within the City of Dublin, which is an urbanized area. There are policies in the Dublin General Plan and standards within Dublin Municipal Code that pertain to scenic quality. Specifically, General Plan Policy 2.8.13.C requires development to blend harmoniously with surrounding natural and open space qualities and requires project design to reduce the visibility of development as much as practicable. Additionally, Municipal Code Chapter 8.32 outlines standards for Planned Development zones in Dublin that intend to encourage the efficient use of land while also maintaining consistency with the Dublin General Plan. Municipal Code Section 9.32.020 also requires utility distribution facilities to be located underground.

The project would consist of an underground water reservoir and associated pipelines. Once construction and installation of the reservoir is complete, soil would be backfilled, and the project site would be restored to be visually similar to existing conditions. Only a new staircase would remain as a permanent new feature above ground on the project site. As such, the project would blend with the surrounding natural and open spaces adjacent to the project site and have minimal development visibility and, thus, would be consistent with General Plan Policy 2.8.13.C.

The proposed reservoir would provide water service to existing and planned development in the project area. The project would facilitate efficient use of surrounding land, which is planned for residential development, and, thus, would be consistent with Municipal Code Chapter 8.32 and residential development anticipated by the General Plan. The proposed reservoir would be located

underground, consistent with Municipal Code Section 9.32.020. Therefore, the project would result in a less-than-significant impact related to conflict with applicable zoning and other regulations governing scenic quality.

LESS THAN SIGNIFICANT IMPACT

d. Would the project create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area?

The primary sources of nighttime light in the vicinity of the project site are residential structure illumination, street lighting, decorative landscape lighting, and motor vehicle headlights, as well as glare associated with windows and vehicles.

Policy 2.8.13.D requires exterior lighting to confine direct rays to the parcel or roadway where lighting is located to protect the darkness of the night sky, and Municipal Code Section 3.4.3 requires exterior lighting to be designed and located so that only the intended area is illuminated and off-site glare is prevented. however, the project would not include permanent lighting features or operations on site, and project construction would only occur during daytime hours. As such, the project would not introduce new sources of nighttime light at the project site that could adversely affect nighttime views in the area.

The project reservoir would be underground and, thus, not include potential sources of daytime glare. During construction, sources of daytime glare such as construction equipment or construction worker vehicles would be temporarily located on the project site. These sources of glare would be limited only to the construction period and would not adversely affect permanent daytime views of the area.

Therefore, the project would result in a less-than-significant impact related to creation of new sources of light or glare affecting nighttime and daytime views in the area.

LESS THAN SIGNIFICANT IMPACT

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2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on 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?	☐	☐	☐	■

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

b. Would the project conflict with existing zoning for agricultural use or a Williamson Act contract?

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

The project site is undeveloped and is not designated as, is not adjacent to, and is not proximate to lands classified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance

(California Department of Conservation ([DOC] 2016). The project site is zoned as City of Dublin Planned Development (PD) (City of Dublin 2024b). The project site and surrounding areas are also not subject to Williamson Act contracts (DOC 2017). The project site does not currently contain agricultural resources and is not used as agricultural land. As such, the project would not result in the conversion of farmland to non-agricultural use or the cancellation of a Williamson Act contract. Therefore, the project would result in no impact related to conversion of designated farmland to non-agricultural use or conflict with agricultural land use zoning.

NO IMPACT

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

d. Would the project result in the loss of forest land or conversion of forest land to non-forest use?

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

While some trees are present on the undeveloped project site, the site itself is not considered forest or timberland, (California Department of Fish and Wildlife 2021). The project site is zoned for Planned Development (PD), not for forest or timberland uses (City of Dublin 2024b). The project site does not currently contain forest or timber resources and is not used as timberland. As such, the project would not convert forest or timberland uses or result in the conversion of off-site forest, timber, or agricultural lands to non-forest, non-timberland, or non-forest uses. Therefore, the project would result in no impact related to conversion of designated forest land to non-forest use or conflict with forest land use zoning.

NO IMPACT

3 Air Quality

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

a. Would the project conflict with or obstruct implementation of the applicable air quality plan?

The California Clean Air Act requires that air districts create a Clean Air Plan that describes how the jurisdiction will meet air quality standards. The most recently adopted air quality plan is the BAAQMD 2017 Plan.

A project that would not support the BAAQMD 2017 Plan goals would not be considered consistent with the 2017 Plan. The 2017 Plan goal related to air quality is to protect air quality and health at the regional and local scale by attaining all national and State air quality standards and eliminating disparities among Bay Area communities in cancer health risk from toxic air contaminants (TACs). On an individual project basis, consistency with BAAQMD quantitative thresholds is interpreted as demonstrating support for the 2017 Plan goals. As discussed under criterion (b) below, the project would not result in exceedances of BAAQMD thresholds for criteria air pollutants and, thus, would not conflict with the 2017 Plan's goal to attain air quality standards.

The 2017 Plan control strategy also includes feasible measures to reduce emissions of ozone precursors and reduce transport of ozone and its precursors to neighboring air basins. The 2017 Plan builds upon and enhances BAAQMD efforts to reduce emissions of these and other various TACs. The 2017 Plan does not include TAC control measures that apply directly to individual development projects. Instead, the control strategy includes control measures related to stationary sources, transportation, energy, buildings, agriculture, natural and working lands, waste management, water, and super-GHG pollutants. As discussed under criterion (b) below, the project would not result in exceedances of BAAQMD thresholds for TACs and, thus, would not conflict with the 2017 Plan's goal to attain air quality standards.

To be consistent with the 2017 Plan, the proposed project must include applicable control measures from the 2017 Plan. Therefore, the project would be required to implement Mitigation Measure AQ-1. With implementation of Mitigation Measure AQ-1, the project would be required to comply with *BAAQMD Basic Construction Mitigation Measures* and would not result in exceedances of BAAQMD thresholds for criteria air pollutants. Therefore, the project would result in a less-than-significant-with-mitigation-incorporated impact related to conflict with the 2017 Clean Air Plan and implementation of an applicable air quality plan.

Mitigation Measure

AQ-1 Implement BAAQMD Basic Construction Mitigation Measures

The following best management practices shall be required of the construction contractor:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered or maintain at least two feet of freeboard.
3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 mph.
5. Enclose, cover, water daily or apply non-toxic soil binders to exposed stockpiles (dirt, sand, etc.)
6. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
7. Install sandbags or other erosion control measures to prevent silt runoff to public roadways.
8. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points.
9. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
10. Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

Criteria pollutants include some pollutants that are emitted directly from a source (e.g., vehicle tailpipe, an exhaust stack of a factory, etc.) into the atmosphere, including carbon monoxide, volatile organic compounds (VOC)/reactive organic gases (ROG), nitrogen oxides (NO_X), particulate matter with diameters of ten microns or less (PM_{10}) and 2.5 microns or less ($PM_{2.5}$), sulfur dioxide, and lead. Other air pollutants are created indirectly through chemical reactions in the atmosphere,

such as ozone, which is created by atmospheric chemical and photochemical reactions primarily between ROG and NO_X. Secondary pollutants include oxidants, ozone, and sulfate and nitrate particulates (i.e., smog).

The San Francisco Bay Area Air Basin (SFBAAB) is designated as nonattainment for the National Ambient Air Quality Standards (NAAQS) for ozone and $PM_{2.5}$ and the California Ambient Air Quality Standards (CAAQS) for ozone, $PM_{2.5}$, and PM_{10}. Project construction would generate temporary air pollutant emissions associated with fugitive dust (PM_{10} and $PM_{2.5}$) and exhaust emissions from heavy construction equipment and construction vehicles. Air pollutant emissions generated by project construction and operation were estimated using the California Emissions Estimator Model (CalEEMod), version 2022.1.1.21. Table 2 summarizes the estimated average daily emissions of pollutants during project construction. As shown therein, construction-related emissions would not exceed Bay Area Air Quality Management District (BAAQMD) regional thresholds for criteria pollutants. As such, project construction would not 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.

Table 2 Project Average Daily Construction Emissions (lbs/day)

Construction Year	ROG	NO_x	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
2025	2	15	1	1
2026	1	2	<1	<1
Average Daily Emissions (lbs/day)	**3**	**17**	**1**	**1**
BAAQMD Thresholds	54	54	82	54
Threshold Exceeded?	**No**	**No**	**No**	**No**

lbs/day = pounds per day; ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

Notes: All emissions modeling was completed made using CalEEMod. See Appendix A for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations and project design features. Emissions presented are the average daily modeled emissions.

Operation of the project would generate criteria air pollutant emissions associated with mobile sources (i.e., vehicle trips to and from the project site). Because the project would not require natural gas or electricity connections, the project would not result in energy or area source emissions during operation. Table 3 summarizes the project's annual and average daily operational emissions. As shown therein, operational emissions would not exceed BAAQMD regional thresholds for criteria pollutants. As such, project operation would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment, and project impacts related to criteria pollutant emissions from mobile and stationary sources would be less than significant.

Table 3 Project Maximum Daily and Annual Operational Period Emissions

Emissions Source	ROG	NO_X	PM_{10}	$PM_{2.5}$
Maximum Annual Emissions (tons per year)	<1	<1	<1	<1
BAAQMD Threshold (tons/year)	10	10	15	10
Threshold Exceeded?	**No**	**No**	**No**	**No**
Maximum Average Daily Emissions (pounds per day)[1]	<1	<1	<1	<1
BAAQMD Thresholds (lbs/day)	54	54	82	54
Threshold Exceeded?	**No**	**No**	**No**	**No**

ROG = reactive organic gases, NO_X = nitrogen oxides, PM_{10} = particulate matter 10 microns in diameter or less, $PM_{2.5}$ = particulate matter 2.5 microns or less in diameter

[1] Emissions presented are the highest of the winter and summer modeled emissions.

Notes: All emissions modeling was completed made using CalEEMod. See Appendix A for modeling results. Some numbers may not add up due to rounding. Emission data is pulled from "mitigated" results, which account for compliance with regulations and project design features.

LESS THAN SIGNIFICANT IMPACT

c. Would the project expose sensitive receptors to substantial pollutant concentrations?

TACs are a broad class of compounds known to have health effects. They include but are not limited to criteria pollutants. TACs are found in ambient air, especially in urban areas, and are caused by industry, agriculture, diesel fuel combustion, and commercial operations (e.g., dry cleaners). TACs are typically found in low concentrations, even near their source (e.g., diesel particulate matter [DPM] near a freeway). Certain population groups, such as children, the elderly, and people with health problems, are particularly sensitive to air pollution, specifically TACs. Therefore, the majority of sensitive receptor locations are schools, hospitals, and residences. The closest sensitive receptors to the project site are single-family residences located approximately 500 feet north of the proposed reservoir. Localized air quality impacts to sensitive receptors typically result from CO hotspots and TACs.

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 ppm or the federal and state eight-hour standard of 9.0 ppm (CARB 2016). Based on estimations determined with CalEEMod, construction of the reservoir would require a maximum of approximately 108 trips during the grading phase (Appendix A). Operation of the project would result in approximately 104 trips per year. The City of Dublin regularly measures average daily traffic volumes of major roadways in Dublin. The two nearest roadways the City has published average daily traffic volumes for are Central Parkway, a two- to three-lane roadway providing access to residential areas surrounding the project site, and Positano Parkway, a one-lane roadway providing access to the residential area immediately north of the project site. Central Parkway is located approximately 0.4 mile southwest of the project site and has an average of 5,682 daily trips; Positano Parkway is located approximately 0.25 mile northwest of the project site and has an average of 11,943 daily trips (City of Dublin 2019). As such, the 108 grading phase construction trips and 104 annual operation trips

associated with the project would not exceed the BAAQMD screening thresholds of increasing roadway vehicle volume at affected intersections by 44,000 vehicles per hour.

The project would not include any stationary sources of air pollution once operational. The project would include 104 maintenance trips per year, which would not significantly increase traffic on area roadways and would not generate substantial TAC emissions. Construction-related activities would result in temporary project-generated emissions of diesel particulate matter (DPM) exhaust emissions from off-road, heavy-duty diesel equipment for site preparation, excavation, reservoir installation, and other construction activities. DPM was identified as a TAC by CARB in 1998 (CARB 2022). Generation of DPM from construction projects typically occurs in a single area for a short period of time. Construction of the proposed project would occur in phases over approximately 15 months. The dose to which the receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the extent of exposure that person has to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a Maximally Exposed Individual are higher if a fixed exposure occurs over a longer period of time. However, young children are more sensitive to exposure to some carcinogens than adults. Therefore, the Office of Environmental Health Hazard Assessment has implemented age sensitivity factors that take into account the increased sensitivity of children during early development stages (i.e., 3rd trimester exposure to 16 years). Given the age sensitivity factors, exposure at a young age to even short-term projects have the potential to result in substantial risk exposure. The maximum daily PM_{10} emissions would range from 0.73 to 2.54 lbs/day of exhaust (DPM), with the maximum emissions occurring during grading activities (Appendix A).

The proposed project would be consistent with the 2017 Plan requirements and control strategies intended to reduce emissions from construction equipment and activities. The proposed project would also comply with the CARB Air Toxics Control Measure that limits diesel powered equipment and vehicle idling to no more than five minutes at a location, and the CARB In-Use Off-Road Diesel Vehicle Regulation. Compliance with these requirements would minimize emissions of TACs during construction. However, given the construction area's proximity to nearby sensitive receptors, including single-family residences located approximately 500 feet north of the proposed reservoir, impacts from TACs could be potentially significant. However, implementation of Mitigation Measure AQ-2 would require the use of off-road diesel-powered construction equipment that meets or exceeds the most stringent and environmentally protective CARB and USEPA Tier 4 off-road emissions standards. The Tier 4 standards reduce DPM emissions by approximately 81 to 96 percent as compared to equipment that meet the Tier 2 off-road emissions standards, depending on the specific horsepower rating of each piece of equipment. Thus, with implementation of Mitigation Measure AQ-2, construction activities would not expose sensitive receptors to substantial TAC concentrations that would potentially exceed cancer risk greater than ten per one million population.

Therefore, project impacts related to TAC emissions from mobile and stationary sources would be less than significant.

Mitigation Measure

AQ-2 Reduce Construction Criteria Pollutant and Toxic Air Contaminant Emissions

The following measure shall be noted on construction plans and implemented during construction:

- All mobile off-road equipment (wheeled or tracked) greater than 50 horsepower used during construction activities shall meet the USEPA Tier 4 interim standards. Tier 4 certification can be for the original equipment or equipment that is retrofitted to meet the Tier 4 interim standards.

This requirement shall be incorporated into the contract agreement with the construction contractor. A copy of the equipment's certification or model year specifications shall be available upon request for all equipment on-site.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

During construction activities, heavy equipment and vehicles would emit odors associated with vehicle and engine exhaust and during idling. However, these odors would be intermittent and temporary and would cease upon completion, and odors would disperse with distance. Overall, project construction would not generate other emissions, such as those leading to odors, affecting a substantial number of people. Construction-related impacts would be less than significant.

Table 3-3 in the BAAQMD 2017 *CEQA Air Quality Guidelines* provides screening distances for land uses that have the potential to generate substantial odor complaints. The uses in the table include wastewater treatment plants, landfills or transfer stations, refineries, composting facilities, confined animal facilities, food manufacturing, smelting plants, and chemical plants (BAAQMD 2017b). Water facilities are not included in this list, and operation of the project would not generate other emissions, such as those leading to odors, that would affect a substantial number of people. No operational impacts would occur.

LESS THAN SIGNIFICANT IMPACT

4 Biological Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and 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, or 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?	☐	☐	■	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	■
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	■

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

Special-Status Plants

As assessed in detail within Appendix B (Biological Resources Assessment), forty-three (43) special-status plant species were identified to have occurrence records within the nine United States Geological Survey (USGS) quadrangles containing and surrounding the project site (California Department of Fish and Wildlife [CDFW] 2023a; California Native Plant Society 2023). All the reported species have specific habitat requirements (e.g., soil type, elevation, hydrologic condition, etc.). The project site existing conditions (land cover disturbed by mowing and grading) and the lack of suitable ecological conditions excluded most of the reported species; however, six species have low potential to occur within the project site: brittlescale (*Atriplex depressa,* California Rare Plant Rank [CRPR] 1B.2), Congdon's tarplant (*Centromadia parryi ssp. congdoni,* CRPR 1B.1), diamond-petaled California poppy (*Eschscholzia rhombipetala,* CRPR 1B.1), San Joaquin spearscale (*Extriplex joaquinana,* CRPR 1B.2), prostrate vernal pool navarretia (*Navarretia prostrata,* CRPR 1B.2), and saline clover (*Trifolium hydrophilum,* CRPR 1B.2). Suitable grassland habitat is present for these species within the project site; however, these species have low potential to occur at the project site due to the limited extent of habitat present and recent construction disturbance at the adjacent East Ranch Development Project site. Because these species only have a low potential to occur and were not observed on the project site, project construction would not substantially affect such plant species. Therefore, impacts related to special status plant species would be less than significant.

Special-Status Wildlife

As assessed in detail within Appendix B (Biological Resources Assessment), forty-nine (49) special-status wildlife species were identified with known occurrence records within the nine USGS quadrangles containing and surrounding the project site (CDFW 2023a, 2023c; United States Fish and Wildlife Service (USFWS) 2023a). This list was reviewed and refined according to the potential for species to occur on the project site based on the presence and quality of habitats within the project site. Of these, three species have a moderate potential to occur within the project site: California red-legged frog (*Rana draytonii*), California tiger salamander (*Ambystoma californiense*), and loggerhead shrike (*Lanius ludovicianus*). Three species have a low potential to occur within the project site: San Joaquin kit fox (*Vulpes macrotis mutica*), burrowing owl (*Athene cunicularia*), and American badger (*Taxidea taxus*); unlike the special-status plants discussed above with low potential for occurrence, these special-status wildlife species are further evaluated below based on their regional significance and listing status.

The California red-legged frog (CRLF) is a federally threatened species and has a moderate potential to occur within the project site. CRLF occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Typical upland habitat consists of densely vegetated areas, downed woody vegetation, leaf litter, small mammal burrows, and human-made structures. The entirety of the project site falls within critical habitat for the species and 40 occurrences have been recorded within a 5-mile radius of the project site in the California Natural Diversity Database (CNDDB; USFWS 2023b; CDFW 2023a). Suitable upland habitat for CRLF is present throughout the project site in the form of small mammal burrows and suitable breeding habitat can be found 0.33 mile west and 0.56 mile east of the project site. The species is unlikely to

be directly impacted by project construction activities unless individuals are dispersing through the project site during or after a rainfall event. Impacts to dispersing individuals would be significant if CRLF were present in the work area during construction, and individuals were injured or killed during construction activities (e.g., grading, excavation), or stuck by equipment or vehicles. Injury, mortality, or harassment of even a single individual would be considered "take" under the federal Endangered Species Act and, thus, a potentially significant impact. However, Mitigation Measures BIO-1 and BIO-2 would reduce potential impacts related to the CRLF to less-than-significant levels by requiring an environmental training for all workers, postponing work during rain events, conducting pre-construction surveys for the species, and avoiding impacts to the species, if detected.

The California tiger salamander (CTS) is a federally and State-identified threatened species and has moderate potential to occur within the project site. CTS are found primarily in grasslands, low foothills, and oak woodland habitats located within approximately 0.42 mile (671 meters) of breeding pools (Trenham and Shaffer 2005). During the non-breeding season, adults occur in upland habitats and occupy small mammal burrows and other subterranean cover, such as root hollows. Suitable upland habitat is present throughout the project site and potential suitable breeding habitat can be found 0.33 mile west and 0.56 mile east of the project site. There are 54 recorded occurrences of CTS within a 5-mile radius of the project site, with the most recent in 2019 (CDFW 2023a). This species is unlikely to be directly impacted by project construction activities unless individuals are dispersing through the project site during or after a rainfall event. Should the species be present on site during project construction, direct impacts could include injury or mortality of individuals through construction activities (e.g., grading, excavation) or strikes by equipment or vehicles. Injury, mortality, or harassment of even a single individual would be considered "take" under the federal Endangered Species Act and California Endangered Species Act and, thus, would be a potentially significant impact. However, Mitigation Measures BIO-1 and BIO-2 are required to reduce potential impacts related to CTS to less-than-significant levels by requiring an environmental training for all workers, postponing work during rain events, conducting pre-construction surveys for the species, and avoiding impacts to the species, if detected.

The San Joaquin kit fox (SJKF) is a federally endangered and state threatened species with a low potential to occur within the project site. SJKF is endemic to California west of the Sierra Nevada Mountains. This species occurs in the Central Valley generally from the Sacramento area south to the southern end of the San Joaquin Valley, in the Carrizo Plain, the Panoche Valley, and from northern San Luis Obispo County north through the Salinas Valley. SJKF are most commonly found in gently sloping to relatively flat terrain vegetated with grasslands or grassy open stages with scattered shrubby vegetation. Although burrows of sufficient size to accommodate SJKF were detected during the site survey, the species is unlikely to be present on the project site due to adjacent development and the ongoing active construction associated with the East Ranch Development Project to the south and west of the project site. However, the project site does provide suitable foraging habitat with numerous small mammal burrows (potential prey base) that are present throughout the area. The species may occur within the project site irregularly during dispersal or foraging. One known occurrence of SJKF has been documented within 5 miles of the project site in CNDDB, though this occurrence is from 1975 and occurs approximately 2 miles to the east and separated by substantial development and Tassajara Road (CDFW 2023a). Strikes of foraging SJKF are unlikely given SJKF would avoid the area during construction and construction vehicles/equipment would be moving low speeds. Nevertheless, impacts related to SJKF, if present during construction, could include injury or mortality to foraging individuals if stuck by construction vehicles or equipment and, thus, would be a potentially significant impact. However, Mitigation Measure BIO-1 is required to reduce impacts related to SJKF to less-than-significant levels by

requiring an environmental training for all workers, including regarding the identification and biology of SJKF.

Burrowing owl is a CDFW Species of Special Concern (SSC) and has a low potential of occurring within the project site. Burrowing owls occupy open, treeless areas within grassland, low density scrub, and desert biomes. This species generally inhabits gently sloping areas, characterized by low, sparse vegetation, and is often associated with high densities of burrowing mammals (Poulin et al. 2011). Burrowing owls often use relatively disturbed areas such as agricultural fields, golf courses, cemeteries, and vacant urban lots in addition to natural breeding habitats. Nests are most often in fossorial animal burrows, such as California ground squirrel or American badger, but atypical nests such as culverts or rubble piles may also be used. Nest sites are typically selected in an area with a high density of burrows. The species is unlikely to inhabit burrows observed on the project site due to the ongoing construction associated with the East Ranch Development Project to the south and west of the project site. The project site does provide foraging habitat and a prey base (small mammals). There are 29 recorded occurrences of burrowing owl within a 5-mile radius of the project site in CNDDB, with the most recent in 2020 (CDFW 2023a). Project activities causing injury or mortality of burrowing owl or burrow destruction or abandonment would be a violation of the California Fish and Game Code (CFGC) and the Migratory Bird Treaty Act (MBTA) and, thus, be a potentially significant impact. However, Mitigation Measures BIO-1 and BIO-3 are required to reduce impacts related to burrowing owl to less-than-significant levels by requiring an environmental training for all workers, conducting pre-construction surveys for the species[2], and avoiding impacts to the species, if detected.

Loggerhead shrike is a CDFW SSC with a moderate potential to occur within the project site. Loggerhead shrike inhabits open habitat with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. This species can be found in agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, and prairies, and is frequently seen along mowed roadsides with access to fence lines and utility poles (Cornell Lab of Ornithology 2023). Although there are no recorded occurrences of the species within 5 miles of the project site in CNDDB (CDFW 2023a), there have been multiple recorded sightings in community science databases within 5-miles of the project site (iNaturalist 2023; Cornell Lab of Ornithology 2023a). The open grassland habitat and the presence of suitable perching resources, such as barbed wire fencing, provide suitable foraging habitat. The species is unlikely to nest on the project site due to ongoing construction associated with the East Ranch Development Project to the south and west of the project site. Project activities causing injury or mortality to loggerhead shrike foraging on the project site or nesting near the project site, including from nest abandonment, would violate CFGC and the MBTA and, thus, be a potentially significant impact. However, Mitigation Measures BIO-1 and BIO-3 are required to reduce impacts related to loggerhead shrike to less-than-significant levels by requiring an environmental training for all workers, conducting pre-construction nesting surveys for the shrikes, and avoiding impacts to nesting shrikes, if detected.

American badger is a CDFW SSC and has a low potential of occurring within the project site. American badger inhabit dry, open habitats including grassland and open woodland (Quinn 2008). Suitable burrowing habitat requires dry, sandy soil. The species is most abundant in drier open stages of most shrub, forest, and herbaceous habitats with suitable soils to support burrows (Zeiner et al. 1990). The species is unlikely to inhabit burrows observed in project site due to the ongoing construction associated with the East Ranch Development Project to the south and west of the

[2] Protocols recommended by the 2012 State of California Department of Fish and Game *Staff Report on Burrowing Owl Mitigation* are not recommended due to the low potential for burrowing owl to occur in the project site.

project site. There are five recorded occurrences of the species within a 5-mile radius in CNDDB, with the most recent in 2004 (CDFW 2023a). Impacts to American badgers, if present during construction, could include harassment or mortality of individuals by construction vehicles or equipment. Project activities causing injury or mortality of American badger would violate CFGC and, thus, be a potentially significant impact. However, Mitigation Measure BIO-1 is required to reduce direct impacts related to American badger to less-than-significant levels by requiring an environmental training for all workers to ensure the species is avoided in the unlikely scenario it is present.

Nesting special-status bird species and/or nesting birds protected under the MBTA and CFGC have potential to occur throughout the project site during the nesting season (February 1 to September 15). Should nesting birds be present within or near the project site during construction, direct impacts could include the destruction of nests through construction activities or the disturbance of nesting behavior through construction noise and activities. Indirect impacts to nesting birds could include the destruction or disturbance of nesting habitat. Nest destruction or abandonment would be a violation of CFGC code and the MBTA and, thus, be potentially significant. However, Mitigation Measures BIO-1, BIO-2, and BIO-3 are required to reduce impacts related to nesting birds to less-than-significant levels by providing protection for special status wildlife species that may occur on site during construction activities through worker training, pre-construction surveys, and impact avoidance.

Therefore, overall impacts related to special-status wildlife species would be less than significant with mitigation incorporated.

Mitigation Measures

BIO-1 Prepare and Implement Worker Environmental Awareness Program (WEAP)

Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend a WEAP training, conducted and prepared by a qualified biologist, to aid workers in recognizing special-status species, native or nesting birds and other biological resources that may occur in the construction area. The specifics of this program will include identification and habitats of special-status species with potential to occur at the project site, a description of the regulatory status and general ecological characteristics of sensitive resources, a review of the limits of construction, and an explanation of the mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared by the qualified biologist for distribution to all contractors, their employers, and other personnel involved with construction. All personnel shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them.

BIO-2 Conduct CRLF and CTS Pre-construction Survey and Impact Avoidance

A qualified biologist shall conduct a pre-construction survey within 7 days prior to initiation of construction activities. The USFWS and CDFW will be notified, as appropriate, should CRLF or CTS be observed within the project site.

To avoid impacts to CRLF and CTS, the construction crew shall check beneath staged equipment each morning prior to commencement of daily construction activities. Should CRLF or CTS occur within the staging areas, construction activities should be halted until the CRLF or CTS vacates the project site on its own or until a biologist with a USFWS Recovery Permit for CRLF or CTS relocates

the CRLF or CTS. A qualified biologist shall be present during initial grading and ground disturbing activities. Should CRLF or CTS be observed within the project site, the USFWS and CDFW, as appropriate, should be notified, and construction will be halted until either the CRLF or CTS exits the site on its own or until a qualified biologist approved by USFWS relocates the CRLF or CTS.

No work shall occur during a rain event (over 0.25 inch within a 24-hour period) unless a biologist is present on site to observe and monitor work activities. If work is suspended during a rain event, a qualified biologist shall inspect the site again prior to resuming work.

BIO-3 Conduct Burrowing Owls, Raptors, and Other Nesting Birds Pre-construction Survey and Impact Avoidance

To prevent the loss of active special-status and non-special-status bird nests, juveniles or adults, project activities including vegetation clearing shall be conducted outside of the breeding season (February 1 through August 31) to the extent feasible.

If project activities will occur between February 1 and August 31, a pre-construction nesting bird survey shall be conducted by a qualified biologist no more than 7 working days prior to the activity to survey for special-status and non-special-status bird and raptor nests. The survey area shall include the project footprint and a 100-foot buffer for passerine species, a 150-foot buffer for burrowing owls, and a 300-foot buffer for raptor species. Following the survey, the following shall be implemented:

- A nesting bird survey report shall be submitted to the District prior to the initiation of project activities. The report shall detail the results of the survey including identification of the location of any active nests, and make a determination if ongoing monitoring should be conducted and/or no-disturbance buffers should be established.
- If active nests are identified during the survey and/or work is scheduled to take place within 100 feet of active passerine nests, 150 feet of active burrowing owl burrows, or 300 feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.
- A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests, 150 feet of active burrowing owl burrows, or 300-feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.
- If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the District detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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

As detailed in Appendix B (Biological Resource Assessment), creeping wild rye turfs are considered a sensitive natural community. This community is located within 100 feet of the project site but not on the project site; as such, impacts specific to creeping wild rye turfs would not occur. In addition,

no riparian habitat or other sensitive natural communities are located on or proximate to the project site that could be impacted. Therefore, impacts related to sensitive natural communities would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

No water areas, including jurisdictional waters or wetlands, exist within the project site; as such, no direct impacts would occur related to potential effect on State or federally protected wetlands. Indirect impacts from project construction activities could occur if sediment or pollutants were allowed to enter nearby waterways identified as jurisdictional waters or wetlands. Potential jurisdictional drainages within the vicinity of the project site include freshwater emergent wetlands areas that occur approximately 330 feet south of and 0.3 miles west of the project site, and Cottonwood Creek approximately 0.56 miles east of the project site. However, because construction would disturb more than one acre of land, the project would require the development of a stormwater pollution prevention plan (SWPPP). A SWPPP must describe the project site, the proposed facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Inspection of construction sites before and after storms is also required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary.

With the preparation and implementation of the project-specific SWPPP, the project would not result in a substantial adverse effect on State or federally protected wetlands. Therefore, impacts related to protected wetlands would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

Local potential for use of the project site as part of a wildlife corridor is possible due to its connections to open habitat and placement between aquatic resources. However, much of the land surrounding the project site has been recently disturbed due to the ongoing construction associated with the East Ranch Development Project. The project site also borders an existing housing track to the north. Additionally, the relatively small footprint of the project site, and the temporary construction associated with the project, would not substantially interfere with wildlife movement through the region, given that larger and more suitable open areas for wildlife movement are present to the south and east of the project site. Therefore, impacts related to wildlife corridors would be less-than-significant.

LESS THAN SIGNIFICANT IMPACT

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No biological resources, including trees, that are protected by local policies and ordinances are present within the project site. Therefore, there would be no impact related to consistency with local biological resources protection policies.

NO IMPACT

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The project site does not fall within the boundaries of any Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plan. Therefore, there would be no impact related to consistency with approved habitat conservation plans.

NO IMPACT

5 Cultural Resources

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

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?

Between November 2022 and December 2023, Rincon conducted a cultural resources assessment in support of the project, which included: a cultural resources records search of the California Historical Resources Information System (CHRIS) through the Northwest Information Center (NWIC) located at Sonoma State University; a Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search; a pedestrian field survey; and historical map and aerial imagery review. The background research and pedestrian field survey of the project site did not identify any built-environment historic resources within the project site. As such, the project has no potential to alter the significance of a historic resource. Therefore, the proposed project would result in no impact related to historical resources.

NO IMPACT

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

No archaeological resources were identified within the project site during the background research or pedestrian field survey. Given the negative results of this review and previous study, the project site is considered to have a low potential for encountering subsurface archaeological deposits. This is based on the Cultural Resources Technical Report included as Appendix C. However, the absence of archaeological resources does not preclude their existence and it is possible that unanticipated archaeological deposits could be encountered and damaged during the ground-disturbing activities associated with construction (such as grading and excavation), especially if those activities occur in less-disturbed buried sediments. Consequently, the following mitigation measure is required to reduce potential impacts related to archaeological resources. Therefore, the proposed project would result in a less-than-significant-with-mitigation-incorporated impact related to archeological resources.

Mitigation Measure

CUL-1 Halt Work and Evaluate Upon Unanticipated Discovery of a Cultural Resource

In the event that archaeological resources are unexpectedly encountered during ground-disturbing activities, work within 50 feet of the find shall halt and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology (National Park Service 1983) shall be contacted immediately to evaluate the resource. If the resource is determined by the qualified archaeologist to be prehistoric, then a Native American representative shall also be contacted to participate in the evaluation of the resource. If the qualified archaeologist and/or Native American representative determines it to be appropriate, archaeological testing for CRHR eligibility shall be completed. If the resource proves to be eligible for the CRHR and significant impacts to the resource cannot be avoided via project redesign, a qualified archaeologist shall prepare a data recovery plan tailored to the physical nature and characteristics of the resource, per the requirements of the California Code of Regulations (CCR) Guidelines Section 15126.4(b)(3)(C). The data recovery plan shall identify data recovery excavation methods, measurable objectives, and data thresholds to reduce any significant impacts to cultural resources related to the resource. Pursuant to the data recovery plan, the qualified archaeologist and Native American representative, as appropriate, shall recover and document the scientifically consequential information that justifies the resource's significance. The District shall review and approve the treatment plan and archaeological testing as appropriate, and the resulting documentation shall be submitted to the regional repository of the California Historical Resources Information System, per CCR Guidelines Section 15126.4(b)(3)(C).

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

c. Would the project disturb any human remains, including those interred outside of formal cemeteries?

No formal cemeteries are within the project site, and the cultural resources records search did not identify cemeteries or archaeological resources containing human remains within the project site. However, the discovery of human remains is always a possibility during ground disturbances, as would be required for future development within the site. Human burials outside of formal cemeteries often occur in prehistoric archaeological contexts. In addition to being potential archaeological resources, human burials have specific provisions for treatment in Section 5097 of the California Public Resources Code. Additionally, the California Health and Safety Code (Sections 7050.5, 7051, and 7054) has specific provisions for the protection of human burial remains. Existing regulations address the illegality of interfering with human burial remains, and protects them from disturbance, vandalism, or destruction. Public Resources Code Section 5097.98 also addresses the disposition of Native American burials, protects such remains, and establishes the NAHC as the entity to resolve any related disputes.

If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. In the event of an unanticipated discovery of human remains, the County coroner must be notified immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification and may recommend scientific

removal and nondestructive analysis of human remains and items associated with Native American burials. Compliance with Public Resources Code Section 5097.98 and State of California Health and Safety Code Section 7050.5 would ensure impacts to human remains are less than significant.

LESS THAN SIGNIFICANT IMPACT

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6 Energy

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

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

California, as a state, is one of the lowest per-capita-energy users in the United States, ranked 48th in the nation due to its energy efficiency programs and mild climate (United States Energy Information Administration 2022). The project would only require the usage of energy in the form of petroleum fuels (i.e., gasoline and diesel) for construction activities and maintenance trips. As such, project-related gasoline and diesel consumption are the focus of this analysis. Petroleum fuels are primarily consumed by on- and off-road equipment and diesel is primarily used by heavy duty-trucks, delivery vehicles, buses, trains, ships, boats and barges, farm equipment, and heavy-duty construction vehicles. Adopted in 2018, California Senate Bill 100 accelerates the State's Renewable Portfolio Standards Program, codified in the Public Utilities Act, by requiring electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045. In addition, the California Green Building Standards Code (CALGreen) requires efficiency measures to reduce energy use and provide energy reduction benefits.

Construction

Project construction activities would include site preparation, including hauling material off site; excavation and construction of the reservoir and access staircase; and site backfill and restoration. During these construction activities, energy would be consumed in the form of petroleum-based fuels used to power off-road construction vehicles and equipment on the project site, construction worker travel to and from the project site, and vehicles used to transport materials to and from the site. As shown in Table 4, project construction would result in consumption of approximately 784 gallons of gasoline and approximately 100,528 gallons of diesel fuel. These construction energy consumption estimates are conservative, because they assume that all the construction equipment used in each construction phase are used every working day of that phase.

Table 4 Estimated Fuel Consumption during Construction

Source	Fuel Consumption (gallons)	
	Gasoline	Diesel
Construction Equipment & Water Truck/Hauling Trips	–	100,528
Construction Worker Vehicle Trips	784	–

See Appendix D (Construction and Operational Energy Calculations) for energy calculation sheets.

Energy use during construction would be temporary in nature, and construction equipment used would be typical of similar-sized construction projects in the region. In addition, construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes and would minimize unnecessary fuel consumption. Construction equipment would be also subject to the USEPA Construction Equipment Fuel Efficiency Standard, so would be required to minimize inefficient, wasteful, or unnecessary fuel consumption. These practices would result in efficient use of energy necessary to construct the project. In the interest of project cost efficiency, construction contractors also would not utilize fuel in a manner that is wasteful or unnecessary. As such, the project would not involve the inefficient, wasteful, and unnecessary consumption of energy during construction.

Operation

The reservoir would require occasional operational maintenance vehicle trips, which would be approximately 104 trips per year. Energy consumption associated with maintenance trips would be relatively minimal and would only occur as needed. The project would also not introduce new electricity demands and would be consistent with similar water storage facilities and equipment energy used throughout California. Furthermore, the project would not introduce new permanent staffing needs. As such, the project would not involve the wasteful, inefficient, or unnecessary consumption of energy resources during operation.

Therefore, overall impacts related to energy consumption efficiency would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

The District has not adopted a plan for renewable energy or energy efficiency with which the project could comply. The City of Dublin General Plan nor the Association of Bay Area Governments 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy contain policies related to renewable energy use or energy efficiency during construction. However, the Dublin CAP, and California Green Building Standards Code (CALGreen) provide local and State requirements related to renewable energy and energy efficiency. The project would comply with the Dublin CAP, which includes strategies to promote building efficiency and electrification, and Measure MM-2 (Reduce the Embodied GHG Emissions Associated with Building Materials) that requires new construction projects to utilize low carbon concrete to reduce lifecycle GHG emissions and the embodied carbon associated with construction projects (City of Dublin 2020). The project would also be compliant with CALGreen, which includes mandatory, specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of the project to minimize wasteful, inefficient, and unnecessary energy consumption.

With the project's consumption of gasoline and diesel nonrenewable fuels only during construction and in compliance with California Code of Regulations Title 13 Sections 2449 and 2485, USEPA Construction Equipment Fuel Efficiency Standard, the Dublin CAP, and CALGreen, the project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Therefore, there would be a less-than-significant impact related to consistency with local and State renewable energy and energy efficiency plans.

LESS THAN SIGNIFICANT IMPACT

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7 Geology and Soils

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
1. 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?	☐	☐	☐	■
2. Strong seismic ground shaking?	☐	☐	■	☐
3. Seismic-related ground failure, including liquefaction?	☐	☐	☐	■
4. Landslides?	☐	☐	■	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	■	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	■	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	■	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	■	☐	☐

a.1. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The project site is located in a seismically active area of California; however, the project site is not located within an Alquist-Priolo Fault Zone (DOC 2019). Several known faults, such as the Pleasanton Fault (approximately 3.7 miles west of the project site), Calaveras Fault (approximately five miles west of the project site), and the Greenville Fault (approximately 7.3 miles east of the project site), and other faults exist in the vicinity of the project site (DOC 2019). However, these faults do not cross the project site. Therefore, the proposed project would not directly or indirectly cause potential adverse effects related to rupture of a known earthquake fault. Therefore, the project would result in no impact related to fault rupture hazards.

NO IMPACT

a.2. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

As described under criterion *a.1*, the project site is proximate to several active faults. Since January 2021, Alameda County has experienced 25 earthquakes with a magnitude greater than 2.5. However, none had a magnitude greater than 4.0, and earthquake damage generally does not occur until a magnitude reaches above 4.0 or 5.0 (United States Geological Survey 2022, 2024).

The project site could be subject to seismic ground shaking during an earthquake occurring along active faults in the region. A large seismic event, such as a seismic shaking or ground failure, could result in breakage of the proposed water reservoir and/or leakage from the reservoir. Construction of the reservoir would be subject to standards of the California Building Code (CBC), which provides building codes and standards for the design and construction of structures in California. Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures. Design and construction of the proposed project would consider the seismic environment and would comply with CBC design standards. The project would be located within a seismically active area and install new infrastructure built to the latest seismic code standards in an area that could be affected by seismic activity. A large seismic event that results in seismic ground shaking could result in breakage of reservoir, and potentially result in temporary water flow or flooding to downhill structures. In the event an earthquake compromises the reservoir during operation, DSRSD would temporarily cease operations and conduct emergency repairs as soon as practicable. The project would not include habitable development that could result in exposure of people to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking. Therefore, the project would result in a less-than-significant impact related to seismic ground shaking hazards.

LESS THAN SIGNIFICANT IMPACT

a.3. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

As shown in Figure 8-1 of the Dublin General Plan Seismic Safety and Safety Element and the DOC Geologic Hazards Data Viewer, although the proposed project would be located in a seismically active area, the project site is not located within a mapped liquefaction zone (City of Dublin 2022, DOC 2019). The project would not involve any activities (such as fracking or mining) that could

trigger an earthquake that would in turn lead to damage from liquefaction. The project would not include habitable development that could result in exposure of people to loss, injury, or death involving seismic-related ground failure, including liquefaction. Therefore, the project would result in no impact related to seismic-related ground failure, including liquefaction.

NO IMPACT

a.4. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

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

As shown in Figure 8-1 of the Dublin General Plan Seismic Safety and Safety Element and the DOC Geologic Hazards Data Viewer, the project site would overlap with mapped landslide zones (City of Dublin 2022, DOC 2019), and the project would disturb soils within these mapped landslide zones. While the reservoir would be constructed outside of mapped landslide zones, the potential access road would traverse these mapped landslide zones and would involve disturbing soils in these areas.

The project would comply with the City of Dublin Municipal Code Chapter 7.16 Grading Regulations, including preparation of site-specific geotechnical investigation and reports, to ensure that project grading activities do not result in unstable soils. Additionally, construction of the reservoir and the access staircase would be subject to standards of the CBC, which provides building codes and standards for the design and construction of structures in California. Chapter 16 of the CBC contains definitions of seismic sources and the procedure used to calculate seismic forces on structures. The CBC requires addressing soil-related hazards, such as treating hazardous soil conditions involving removal, proper fill selection, and compaction. The project would be required to comply with the CBC, and soils would be properly compacted beneath the reservoir's access staircase to minimize the project's potential to exacerbate existing landslide risk within the project site. As such, with project compliance with applicable grading and building standards, the proposed project would not substantially affect soil stability or increase the potential for on- or off-site landslides.

Although the proposed project would be located in a seismically active area, the project is not located in an earthquake-induced landslide hazard zone or liquefaction zone (DOC 2019). The proposed project would incorporate all applicable building standards and requirements in compliance with the California Building Standards Code and AWWA Standards for reservoir construction. As such, given project compliance with applicable building standards, the proposed project would not substantially affect soil stability or increase the potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

Overall, project impacts related to landslide and other soil stability hazards would be less than significant.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in substantial soil erosion or the loss of topsoil?

Soil erosion or the loss of topsoil may occur when soils are disturbed but not secured or restored, such that wind or rain events may mobilize disturbed soils, resulting in their transport off the project site. Grading would result in a maximum net soil export of approximately 47,700 cubic yards (12,000 cubic yards for the reservoir, 9,000 cubic yards for the staircase, and 26,700 cubic yards for the

potential future access road). Because construction would disturb more than one acre of land, the project would be subject to the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the State Water Resources Control Board (SWRCB). Compliance with the NPDES permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Project permit conditions require the development of a SWPPP, which must describe the project site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-stormwater management controls. Inspection of construction sites before and after storms is also required to identify stormwater discharge from the construction activity and to identify and implement erosion controls, where necessary. Project compliance with the surface and drainage requirements outlined in the Dublin Municipal Code Chapter 7.16 Grading Regulations would further reduce the potential for runoff and erosion impacts. With implementation of the project-specific NPDES permit and compliance with the local grading requirements, the project would not result in substantial soil erosion or loss of topsoil. Therefore, project impacts related to soil erosion and loss of topsoil would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

Expansive soils are those soils which can undergo substantial changes in volume (i.e., shrink-or-swell potential), due to variations in moisture content. The project site is underlain by siltstones and claystones, which are highly expansive (Berlogar Stevens & Associates 2019). The Uniform Building Code was superseded by the California Building Code in 1998. The project would be required to comply with the CBC, which requires treatment of soil conditions involving removal, proper fill selection, and compaction, and Dublin General Plan Seismic Safety and Safety Element Policy 8.2.1.B, which requires shrink-swell potential to be included with all soil reports and design recommendations. The CBC includes requirements to address soil-related hazards, including testing to identify expansive soils and design specifications where structures are to be constructed on expansive soils. Typical measures to treat expansive soil conditions involve removal, proper fill selection, and compaction. In cases where soil remediation is not feasible, the CBC requires structural reinforcement of foundations to resist the forces of expansive soils. Compliance with the requirements of the CBC, as well as the aforementioned General Plan policies, would reduce risks related to expansive soils. Grading would result in a maximum net soil export of approximately 47,700 cubic yards (12,000 cubic yards for the reservoir, 9,000 cubic yards for the staircase, and 26,700 cubic yards for the potential future access road). Imported soil would be required to comply with CBC fill selection requirements. Furthermore, the project would not introduce habitable structures to the project site and would not create risks to life within the project site due to expansive soils. With implementation of the CBC, the project would not result in substantial direct or indirect risk to life or property due to location on expansive soils. Therefore, project impacts related to expansive soils would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

The project would not involve the development of habitable structures and, thus, no use of septic tanks or alternative wastewater disposal systems would be necessary. Therefore, no impact would occur related to soil capability support of alternative wastewater disposal systems.

NO IMPACT

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010).

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project site based on the results of a paleontological locality search and a review of existing information in the scientific literature regarding known fossils within geologic units mapped at the project site. Following the literature review, a paleontological sensitivity classification (high, low, undetermined, or no potential) was assigned to each geologic unit mapped within the project site. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present.

The geology of the region surrounding the project site was mapped by Dibblee and Minch (2006) who identified a single geologic unit, Livermore Gravel, underlying the project site. The Livermore Gravel primarily consists of gray, poorly consolidated clay but also includes gray, poorly consolidated pebbles, gravel, and sand (Dibblee and Minch 2006). The Livermore Gravel is Pliocene to early Pleistocene in age and has produced several significant fossil localities in Alameda County, producing taxa such as mammoths (*Mammuthus*), horse (*Equus*, *Pliohippus*), ground sloths, and turtles (Jefferson 2010; Paleobiology Database 2022; University of California Museum of Paleontology 2022). Given this fossil-producing history, the Livermore Gravel geologic unit has high paleontological sensitivity.

Rincon requested a fossil locality search from the University of California Museum of Paleontology. This locality search recovered no known fossil localities within the project site (Holroyd 2022). The nearest fossil locality comes from the campus of Las Positas College approximately 2 miles east of the project site and consists of a mammoth (*Mammuthus*) found in the Livermore Gravel. Other fossil localities are known throughout the Livermore Valley from Livermore Gravel and undifferentiated Pleistocene-aged alluvium. These localities primarily produce large mammal fossils and, more rarely, small mammals, reptiles, and birds, and these fossils generally occur within 16 feet of the surface.

Project ground-disturbing activities within previously undisturbed sediments with high paleontological sensitivity could result in significant impacts related to paleontological resources. Impacts would be significant if construction activities result in the destruction, damage, or loss of

scientifically important paleontological resources and associated stratigraphic and paleontological data. The project would include grading and excavations for the reservoir, water lines, and access staircase reaching more than 25 feet below the current grade. Previously undisturbed portions of the highly sensitive Livermore Gravel geologic unit would be impacted and, thus, a potentially significant impact would occur. However, Implementation of Mitigation Measure GEO-1 would reduce potential impacts related to paleontological resources to a less-than-significant level by requiring the recovery, identification, and curation of previously unrecovered fossils encountered during project construction.

Therefore, the project would result in a less-than-significant-with-mitigation-incorporated impact related to paleontological resources or unique geologic features.

Mitigation Measure

GEO-1 Monitor and Mitigate for Paleontological Resources

QUALIFIED PROFESSIONAL PALEONTOLOGIST

Prior to excavation, the District shall retain a Qualified Professional Paleontologist, as defined by the Society of Vertebrate Paleontology (SVP) (2010), who shall direct all mitigation measures related to paleontological resources.

PALEONTOLOGICAL WORKER ENVIRONMENTAL AWARENESS PROGRAM

Prior to the start of construction, the Qualified Professional Paleontologist or their designee shall conduct a paleontological Worker Environmental Awareness Program (WEAP) training for construction personnel regarding the appearance of fossils and the procedures for notifying paleontological staff should fossils be discovered by construction personnel.

PALEONTOLOGICAL MONITORING

Full-time paleontological monitoring shall be conducted during ground-disturbing construction activities within previously undisturbed sediments. Paleontological monitoring shall be conducted by a paleontological monitor with experience with collection and salvage of paleontological resources and who meets the minimum standards of the SVP (2010) for a Paleontological Resources Monitor.

The Qualified Professional Paleontologist may recommend that monitoring be reduced in frequency or ceased entirely based on geologic observations. Such decisions shall be subject to review and approval by the District. In the event of a fossil discovery by the paleontological monitor or construction personnel, all work in the immediate vicinity of the find shall cease. The Qualified Professional Paleontologist shall evaluate the find before restarting construction activity in the area. If it is determined that the fossil(s) is (are) scientifically significant, the Qualified Professional Paleontologist shall complete the following conditions to mitigate impacts to significant fossil resources:

a. **Fossil Salvage.** The paleontological monitor shall halt construction equipment within 50 feet of the find. Typically, fossils can be safely salvaged quickly by a single paleontological monitor and not disrupt construction activity. In some cases, larger fossils (such as complete skeletons or large mammal fossils) require more extensive excavation and longer salvage periods. Bulk

matrix sampling may be necessary to recover small invertebrates or microvertebrates from within paleontologically sensitive deposits.

b. **Fossil Preparation and Curation.** Significant fossils shall be identified to the lowest possible taxonomic level, prepared to a curation-ready condition, and curated in a scientific institution with a permanent paleontological collection along with all pertinent field notes, photos, data, and maps. Fossils of undetermined significance at the time of collection may also warrant curation at the discretion of the Qualified Professional Paleontologist.

FINAL PALEONTOLOGICAL MITIGATION REPORT

Upon completion of ground-disturbing activity (and curation of fossils if necessary), the Qualified Professional Paleontologist shall prepare a final report describing the results of the paleontological monitoring efforts associated with the project. The report shall include a summary of the field and laboratory methods, an overview of the project geology and paleontology, a list of taxa recovered (if any), an analysis of fossils recovered (if any) and their scientific significance, and recommendations. The report shall be submitted to the District and, if monitoring efforts produced fossils, to the designated museum repository.

LESS THAN SIGNIFICANT WITH MITIGATION INCORPORATED

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8 Greenhouse Gas Emissions

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

a. Would the project generate GHG 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?

The Dublin Climate Action Plan (CAP) 2030 and Beyond is a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b). The Dublin CAP includes strategies to promote building efficiency and electrification, and Measure MM-2 (Reduce the Embodied GHG Emissions Associated with Building Materials) requires new construction projects to utilize low carbon concrete to reduce lifecycle GHG emissions and the embodied carbon associated with construction projects (City of Dublin 2020). The project would comply with the requirements of the Dublin CAP, and thereby would not conflict with a local GHG reduction strategy and would not conflict with BAAQMD CEQA GHG Thresholds Option 1 (BAAQMD 2022)

In addition, as a public utility infrastructure project without residential, commercial, or office land uses, the project would not involve use of natural gas appliances or plumbing, would result in minimal operational vehicle miles traveled (VMT) with a maximum of 104 maintenance trips per year, and would not be required to provide electric vehicle parking or charging infrastructure.

As such, the project would not conflict with BAAQMD CEQA GHG Thresholds Option 2 (BAAQMD 2022). Therefore, project impacts related to generation of GHG emissions that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	■	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	■	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?	☐	☐	☐	■
d. Be located on a site that is included on a list of hazardous material 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 in an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	■
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	■
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☐	■	☐

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

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

Project operation would involve water storage and not require routine transport or on-site storage of chemicals or potentially hazardous materials, and risk of spill would cease after construction would be completed. Project construction would temporarily increase the transport and use of hazardous materials in the project site through the operation of vehicles and equipment. Such substances include diesel fuel, oil, solvents, and other similar materials that could be brought onto the construction site for use and storage during the construction period and could introduce the potential for an accidental spill or release to occur. These materials would be contained within vessels specifically engineered for safe storage and would not be transported, stored, or used in quantities that would pose a significant hazard to the public or construction workers themselves. Project construction would require the excavation and transport of materials and soils that could possibly be contaminated by vehicle-related pollution (e.g., oil, gasoline, diesel, and other automotive chemicals). All such materials and soils removed during construction would be transported and disposed of in accordance with applicable codes and regulations to minimize potential hazards to construction workers and the surrounding community. Any use of potentially hazardous materials during project construction would comply with all local, State, and federal regulations regarding the handling of potentially hazardous materials, including Title 49 of the Code of Federal Regulations and Title 22, Division 4.5 of the CCR. In addition, hazardous materials used during project construction would be disposed of off-site in accordance with all applicable laws and regulations, including but not limited to the California Building and Fire Codes, as well as regulations of the federal and State Occupational Safety and Health Administrations.

Therefore, the project would result in a less-than-significant impact related to risks associated with the routine transport, use, or disposal of or reasonably foreseeable upset and accident conditions involving hazardous materials.

LESS THAN SIGNIFICANT IMPACT

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

As discussed above under criteria *a* and *b*, project construction may involve the temporary transport, storage, use, and disposal of hazardous materials, but the management of hazardous materials is governed by and would be in compliance with identified federal, State, and local regulations. The nearest school to the project site is Jose Maria Amador Elementary School, located approximately 0.5 mile northwest of the project site. As such, the project would not be able to potentially emit hazardous emissions or handle hazardous materials within 0.25 mile of an existing school. Therefore, the project would result in no impact related to risks associated with handling of hazardous materials within 0.25 mile of schools.

NO IMPACT

d. Would the project be located on a site that is included on a list of hazardous material 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?

The following databases compiled pursuant to Government Code Section 65962.5 were reviewed with regard to the project site for known hazardous materials contamination:

- EnviroStor Database, California Department of Toxic Substances Control (DTSC)
- GeoTracker Database, State Water Resources Control Board (SWRCB)
- California Environmental Protection Agency (CalEPA) Cortese List

According to these database searches, there are no known hazardous material sites within the project site or within 0.25 mile of the project site (DTSC 2024; SWRCB 2024; CalEPA 2024). The nearest hazardous material site listed in these databases is the Jordan Ranch E-5 Site, located approximately 0.5 mile southwest of the site (DTSC 2024; SWRCB 2024). This hazardous material site's status is listed as "completed – case closed," which indicates that required remediation occurred and the project is no longer a hazards or hazardous materials concern. As such, the project would not be located on a hazardous materials site on a list compiled pursuant to Government Code Section 65962.5 and would not create a significant hazard to the public or the environment. Therefore, the project would result in no impact related to risks associated with location on a listed hazardous materials site.

NO IMPACT

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

The nearest airport to the project site is the Livermore Municipal Airport, located approximately 1.5 miles southeast of the site. However, the project site is not located within that airport's influence area or within its mapped noise contours (Alameda County Community Development Agency 2012). Therefore, the project would not result in a safety hazard or excessive noise to workers in the project area. Therefore, the project would result in no impact related to risks associated with location proximate to an airport.

NO IMPACT

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The project would not involve habitable development nor facilitate new facilities that would interfere with adopted emergency plans. In addition, the project would not obstruct, temporarily close, or alter existing roadways or require the construction of new public roadways that could be used as emergency evacuation routes. As such, the proposed project would not block emergency response or evacuation routes or interfere with adopted emergency response and emergency evacuation plans. Therefore, the project would result in no impact related to impairment or interference with implementation of an emergency response or evacuation plan.

NO IMPACT

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

According to maps prepared by CAL FIRE, the project site is designated as a Moderate Fire Hazard Severity Zone (FHSZ) and is within a Local Responsibility Area (CAL FIRE 2007). The project does not propose habitable development that could be subject to wildland fire nor would it result in other physical changes to the environment that could increase the risk of a wildland fire. As described further under Environmental Checklist Section 20, *Wildfire,* the proposed project would not expose people or structures to a substantial risk of loss, injury, or death involving wildland fires. Therefore, project impacts related to risks associated with exposure to wildland fires would be less than significant.

LESS THAN SIGNIFICANT IMPACT

10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	■	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the Basin?	☐	☐	■	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
(i) Result in substantial erosion or siltation on- or off-site;	☐	☐	■	☐
(ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	■	☐
(iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; 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?	☐	☐	■	☐

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

The project site is located in the San Francisco Bay hydrologic region. The nearest surface water bodies to the project site are Cottonwood Creek, a creek that runs parallel to Doolan Road approximately 0.6-mile west of the project site; Arroyo Mocho, a stream approximately 1.6 miles southwest of the project site; several unnamed reservoirs approximately 1.7 miles south of the project site; and Shadow Cliffs Lake, approximately 3.5 miles south of the project site. The project site is also bisected by existing natural drainages, which flow in a north-south direction due to existing topography (United States Geological Survey 2023).

Project operation would involve an enclosed, undergrounded project reservoir and, thus, could not degrade surface or groundwater quality. Project construction has the potential to impact water quality through erosion and through debris carried in runoff. Construction would involve heavy equipment that could result in an increase in fuel, oil, and lubricants in stormwater runoff due to leaks or accidental releases. Erosion that would occur during project construction would be limited due to the relatively small project footprint. Project construction would include dust control via use of a water truck that would water the construction area as needed to prevent dust in areas of grading. Construction would disturb more than one acre and the project would comply with the requirements of the National Pollutant Discharge Elimination System Construction General Permit. As described in Environmental Checklist Section 9, *Hazards and Hazardous Materials,* accidental leaks or spills of hazardous materials that may occur during project construction would be cleaned up and disposed of in accordance with applicable regulations. In addition, compliance with State requirements would reduce impacts related to surface and ground water quality. As such, the project would not violate water quality standards or waste discharge requirements and would not substantially degrade surface or groundwater quality. Therefore, project impacts related to surface and groundwater quality would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The project site is subject to the 2017 Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), established by the San Francisco Bay Regional Water Quality Control Board. The Basin Plan establishes narrative and numerical water quality objectives and includes total daily maximum loads, which are a calculation of the maximum amount of a pollutant a water body can have and still meet water quality objectives established by the region (San Francisco Bay Regional Water Quality Control Board 2017). As discussed in Environmental Checklist Section 9, *Hazards and Hazardous Materials*, the proposed project would not generate substantial erosion, and all accidental leaks or spills of hazardous materials that may occur during construction would be remediated in accordance with applicable regulations. As such, the project would not conflict with or obstruct implementation of the Basin Plan.

The District purchases potable water from the Zone 7 Water Agency (Zone 7). This water supply consists of a blend of surface water imported from the State Water Project, local runoff from the Del Valle watershed, and local groundwater previously recharged and extracted from the Livermore Valley Groundwater Basin. Prior to blending, imported water supplies are treated at one of Zone 7's

two water treatment facilities – Del Valle Water Treatment Plant and Patterson Pass Water Treatment Plant. The composition of the potable water supply (i.e. treated surface water to local runoff to groundwater ratio) varies year-to-year based on hydrologic conditions. In general, however, DSRSD receives a higher proportion of groundwater during periods of drought.

Zone 7 Water Agency is also the Groundwater Sustainability Agency for the Livermore Valley Groundwater Basin, and manages this basin via implementation of the Alternative Groundwater Sustainability Plan for the Livermore Valley Groundwater Basin, which was adopted in 2021. Zone 7 Water Agency only pumps groundwater that has been stored in the basin as part of its artificial recharge, and implements monitoring programs and management actions to ensure groundwater sustainability (Zone 7 Water Agency 2020). The project has been planned by DSRSD to serve planned growth and incorporated in its water supply planning, including the 2016 Water Master Plan update and the 2020 Urban Water Management Plan, that informed the Alternative Groundwater Sustainability Plan for the Livermore Valley Groundwater Basin. As such, the project would not introduce unplanned demand for groundwater and would not conflict with sustainable management of the Livermore Valley Groundwater Basin. Therefore, project impacts related to groundwater supplies, groundwater recharge, and consistency with water quality and sustainable groundwater management plans would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

(i) Result in substantial erosion or siltation on- or off-site?

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

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

(iv) Impede or redirect flood flows?

The project would involve installation of a new water reservoir. The project would not include components that would result in alterations to the course of a stream or river. The reservoir would be located belowground, and surface conditions would be restored to existing topography after reservoir construction. Accordingly, existing drainage patterns would not be altered in the footprint of the reservoir. As discussed under criterion *b* in Environmental Checklist Section 7, *Geology and Soils,* the project would not result in substantial erosion or siltation on- or off-site. The proposed access staircase would be limited in area and would result in minimal changes to the existing topography of the project site. Runoff currently travels via sheet flow to nearby drainages, and the access staircase would not inhibit the existing drainage pattern. Although the access staircase would introduce new impervious surfaces to the project site, it would not result in a substantial increase in surface runoff. As such, the project would not substantially alter the existing drainage pattern in the project site compared to existing conditions. Therefore, impacts related to erosion, surface runoff, and flood flows would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

According to flood hazard maps prepared by the Federal Emergency Management Agency (FEMA), the project site is located within flood zone X and is not within a flood hazard area (FEMA 2009). The project site is not proximate to the Pacific Ocean and is not within a tsunami hazard zone (DOC 2021). The closest surface water bodies that would be subject to seiche are several unnamed reservoirs approximately 1.7 miles south of the project site; due to distance and topography, the project site would not be impacted should a seiche occur. Additionally, the project would not require storage of potential pollutants within the project site. As such, the project would not risk release of pollutants due to project inundation. Therefore, no impacts would occur related to flood, tsunami, or seiche hazards.

NO IMPACT

11 Land Use and Planning

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

a. Would the project physically divide an established community?

The project would involve construction of a new water reservoir in an undeveloped area of Dublin. The project would not impede access between existing surrounding residential areas and would not conflict with planned residential development. As such, the project would not physically divide an established community. Therefore, no project impact related to division of an established community would occur.

NO IMPACT

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

While DSRSD is not subject to the Dublin General Plan and municipal code, the following discussion is provided for informational purposes. The Dublin General Plan and municipal code contain several land use policies and standards with the purpose of avoiding or mitigating an environmental effect. Table 5 shows applicable General Plan policies that aim to avoid or mitigate environmental effects and the project's consistency with those policies.

Table 5 Project Consistency with City of Dublin General Plan and Municipal Code

Policy/Standard	Project Consistency
City of Dublin General Plan	
7.3.1 A(1). Maintain natural hydrologic systems.	**Consistent.** As discussed under Environmental Checklist Section 10, *Hydrology and Water Quality,* the project would not substantially alter the existing drainage pattern of the project site. The project would consist of an underground water reservoir, and, because soil would be backfilled on top of the reservoir similar to existing conditions, the footprint of the reservoir would not substantially alter existing hydrologic systems. The access staircase and associated pipelines would follow existing grades and would require minimal excavation and not substantially alter natural hydrologic systems. Therefore, the project would be consistent with this policy.
7.4.1 A(1). Protect oak woodlands. **B(1).** Require preservation of oak woodlands. Where woodlands occupy slopes that otherwise could be graded and developed, permit allowable density to be transferred to another part of the site. Removal of an individual oak tree may be considered through the project review process. **B(2).** Enact and enforce the Heritage Tree Ordinance.	**Consistent.** The project site does not contain oak woodlands and would not require tree removal. Therefore, the project would be consistent with these policies.
7.5.1 (A)2. Require an air quality analysis for new development projects that could generate significant air emissions on a project and cumulative level. Air quality analyses shall include specific feasible measures to reduce anticipated air quality emissions to a less-than-significant California Environmental Quality Act (CEQA) level.	**Consistent.** As discussed under Environmental Checklist Section 3, *Air Quality*, project-generated air emissions were modeled with CalEEMod (version 2020.4.0). CalEEMod modeling determined that the project is not anticipated to generate air emissions that would exceed applicable BAAQMD thresholds for air pollutants with implementation of Mitigation Measures AQ-1 and AQ-2. Therefore, the project would be consistent with this policy.
7.6.1 A(1). Prevent premature urbanization of agricultural lands.	**Consistent.** As discussed under Environmental Checklist Section 2, *Agriculture and Forestry Resources,* the project site does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and is not currently used for agriculture. The project would not urbanize agricultural lands. Therefore, the project would be consistent with this policy.
7.7.1 A(1). Preserve Dublin's historic resources. Seven sites in the Primary Planning Area are listed in the California Archaeological Inventory, Northwest Information Center, at Sonoma State University including the church and school on the grounds of the Dublin Heritage Park and Museums. As many as a dozen potentially significant historic and prehistoric sites have been identified in the Eastern Extended Planning Area.	**Consistent.** As discussed under Environmental Checklist Section 5, *Cultural Resources,* the project area does not include any known cultural resources and the project would not result in significant impacts related to cultural resources with implementation of Mitigation Measures CUL-1. Therefore, the project would be consistent with this policy.
7.8.1 B(1). Require revegetation of cut and fill slopes. **(4).** Access roads (including emergency access roads), arterial streets and collector streets that must pass through open space areas shall be designed to minimize grading to the maximum extent possible, so as not to damage the ecological and/or aesthetic value and characteristics of the open space area.	**Consistent.** The construction of the reservoir would require grading of the existing hilltop and grading associated with the proposed staircase. Once construction is complete, soils would be revegetated, and soil would be backfilled over the reservoir to restore the hilltop's topography and vegetation. The reservoir, associated pipelines, and staircase would not substantially alter the ecological or aesthetic characteristics of the project site. Therefore, the project would be consistent with this policy.

Policy/Standard	Project Consistency
City of Dublin Municipal Code	
Chapter 7.16. Grading Regulations. This chapter contains regulations to avoid pollution of water courses with sediments caused by surface runoff and to ensure that the use of a graded site is consistent with the City's general plan. **Chapter 7.74.** Stormwater Management and Discharge Control. This chapter contains regulations to eliminate non-stormwater discharges into the municipal storm sewer and to reduce erosion and siltation.	**Consistent.** As discussed under Environmental Checklist Section 7, *Geology and Soils,* and Environmental Checklist Section 8, *Hydrology and Water Quality,* the project would be required to prepare a SWPP and comply with local grading regulations and would not result in substantial erosion or runoff. Therefore, through compliance with local grading and stormwater control regulations, the project would be consistent with this City policy.
Chapter 5.28. Noise. This chapter defines and prohibits unreasonable levels of noise.	**Consistent.** As described under Environmental Checklist Section 13, *Noise,* the project would not exceed acceptable noise levels during construction and would not generate noise during operation. Therefore, the project would be consistent with this policy.

Source: City Dublin 2022; Dublin Municipal Code

As demonstrated in Table 5, the project would not conflict with or be inconsistent with a land use policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Additionally, the project site is not within another land use plan area other than that of the Dublin General Plan and is not within an airport land use plan area. Therefore, no project impact related to consistency with current land use plans or policies would occur.

NO IMPACT

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12 Mineral Resources

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

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

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

According to Mineral Land Classification Maps prepared by the California Geological Survey, the project site is in an area where available geologic information indicates there is low potential for the presence of significant construction aggregate resources (California Geological Survey 2021). The City of Dublin General Plan states that mineral extraction areas are not present within Dublin (City of Dublin 2022). Regardless, the proposed project would not involve mineral extraction or changes in land use that could affect the availability of mineral resources, and the project site is not currently used for mineral resource extraction. Therefore, no impact related to availability of mineral resources would occur.

NO IMPACT

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13 Noise

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

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

Construction

Noise-sensitive receivers nearest to the project site include single-family residences, located approximately 500 feet north of the proposed reservoir. Project construction activities would generate temporary noise in the project site vicinity, exposing sensitive receivers located north of the project site to increased noise levels. Construction noise would be generated by heavy-duty diesel construction equipment used for site preparation, excavation, reservoir and roadway construction, and site restoration. Each phase of construction would include a specific equipment mix and associated noise characteristics, depending on the equipment used during that phase. Construction equipment would be located as close as 45 feet to these properties but would typically operate at an average distance of 90 feet. Construction noise would be short-term and temporary at the individual locations of project construction activities, given that construction at each location would only occur for a fraction of the overall up to 15-month construction period. Construction noise at sensitive receptors near the project site was estimated using the FHWA Roadway Construction Noise Model (RCNM; FTA 2018). At a distance of 90 feet, one excavator, one grader, and one scraper would generate a noise level of approximately 79.1 dBA L_{eq} (RCNM Calculations are included in Appendix E). The grading phase was the only phase modeled in RCNM, because it would

be the loudest construction phase. Because the Dublin Municipal Code does not establish a quantitative noise threshold, this analysis conservatively uses the FTA's threshold of 80 dBA (8-hour L_{eq}) for residential uses. Table 6 presents estimated construction noise levels at a distance of 90 feet for various pieces of heavy equipment anticipated to be utilized for project construction activities. As shown therein, noise from construction equipment would not exceed FTA's threshold of 80 dBA.

Table 6 Estimated Construction Equipment Noise Levels[1]

Equipment	Construction Noise Levels at 90 feet (dBA L_{eq})[1]
Excavator	71.6
Grader	75.9
Scraper	74.5
Threshold	**80.0**
Threshold Exceeded?	No

dBA = A-weighted decibels; L_{eq} = equivalent noise level

Source: FTA 2018; Federal Highway Administration Roadway Construction Noise Model 2006

Operation

Upon completion of construction, the reservoir and associated pipelines would be located underground and not generate noise. Routine maintenance trips would be occasional (104 trips per year). The addition of these maintenance trips to area roadways, which currently experience thousands of daily trips (as discussed further in Environmental Checklist Section 17, *Transportation*), would not result in a perceptible increase in roadway noise. As such, project operation would not generate a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of applicable standards.

Therefore, the project would result in a less-than-significant impact related to ambient noise levels.

LESS THAN SIGNIFICANT IMPACT

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

The greatest anticipated source of vibration during general project construction activities would be from a roller, which may be used within 45 feet of the nearest residences when accounting for setbacks. A roller would create approximately 0.21 in/sec peak particle velocity (PPV) at a distance of 25 feet (Caltrans 2020). This would equal a vibration level of 0.11 in/sec PPV at a distance of 45 feet.[3] This would be lower than what is considered a distinctly perceptible impact for humans of 0.24 in/sec PPV, and the structural damage impact of 0.20 in/sec PPV. Therefore, although the equipment may be perceptible to nearby human receivers, temporary impacts associated with the use of construction equipment would be less than related Caltrans thresholds.

Since the proposed project would not include components with the potential to generate significant vibration during operation, such as manufacturing or heavy equipment, no operational vibration would occur.

[3] $PPV_{Equipment} = PPV_{Ref} (25/D)^n$ (in/sec) = 0.210 $(25/45)^{1.1}$ (in/sec); PPV_{Ref} = reference PPV at 25 feet, D = distance, and n = 1.1

Therefore, the project would result in a less-than-significant impact related to generation of groundborne vibration.

LESS THAN SIGNIFIC IMPACT

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

The nearest airport to the project site is the Livermore Municipal Airport, located approximately 1.5 miles southeast of the site. However, the project site is not located within the airport's influence area or within its mapped noise contours (Alameda County Community Development Agency 2012). As such, the project would not expose workers to excessive noise in the project area. Therefore, the project would result in a less-than-significant impact related to airport noise exposure.

LESS THAN SIGNIFICANT IMPACT

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14 Population and Housing

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

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

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project would involve construction and operation of a water reservoir to serve existing and planned development. The project would not include housing or other infrastructure that would lead directly to population growth. The project would facilitate additional water service to be provided by DSRSD in order to meet existing and planned water supply demand. The proposed project would not involve development of land that previously could not be developed due to water service constraints. As a result, the project would not indirectly induce substantial unplanned population growth. In addition, the project would not include components that displace existing people or result in the removal of housing. Therefore, no impacts related to population and housing would occur.

NO IMPACT

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15 Public Services

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:				
	1 Fire protection?	☐	☐	☐	■
	2 Police protection?	☐	☐	☐	■
	3 Schools?	☐	☐	☐	■
	4 Parks?	☐	☐	☐	■
	5 Other public facilities?	☐	☐	☐	■

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:

1 Fire protection?

2 Police protection?

3 Schools?

4 Parks?

5 Other public facilities?

The project would involve installation of a water reservoir and associated infrastructure and would not introduce new habitable infrastructure requiring additional fire or police protection services or schools or parks. As described in Environmental Checklist Section 14, *Population and Housing*, the project does not include development of structures or infrastructure that would directly or indirectly increase the population in Dublin. As such, the project would not result in the provision of new or physically altered public facilities or the need for other new or physically altered public

facilities. Therefore, no project impacts would occur related to provision or alteration of public service facilities.

NO IMPACT

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?	☐	☐	☐	■

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?

As described in Environmental Checklist Section 14, *Population and Housing*, the project does not include development of structures or infrastructure that would directly or indirectly increase the population in Dublin. As such, the project would not increase the population served by local recreation facilities or otherwise result in increased demand for or degradation of those facilities. In addition, the project also would not include recreational facilities or require the construction or expansion of recreational facilities. Therefore, no project impacts related to recreation facilities would occur.

NO IMPACT

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17 Transportation

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

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

DSRSD has not adopted a program, plan, ordinance, or policy addressing the circulation system. While DSRSD is not subject to Dublin programs, plans, ordinances, or policies, the following discussion is provided for informational purposes. The Dublin General Plan Circulation Element includes goals to promote transportation options and independent mobility, increase community safety, and minimize impacts related to vehicle emissions.

Construction-related vehicle trips would include construction workers traveling to and from the project site, haul trucks (for moving and importing soil), and other trucks associated with equipment and material deliveries. Based on estimations determined with CalEEMod, construction of the reservoir would require a maximum of approximately 108 trips during the grading phase (Appendix A). Operation of the project would result in approximately 104 trips per year. Such trips would occur on area roadways, such as Central Parkway and Positano Parkway. Construction trips would access the project site via South Terracina Drive or through roads in future East Ranch development in the adjacent Croak Property. Closures of area roadways would not be required during project construction, and construction equipment and worker vehicles would be staged on site or adjacent to the project site on the Croak Property. Given that construction would be a short-term and temporary activity, trips would account for a relatively small portion of existing traffic on area roadways, construction-related traffic impacts would not be substantial. As such, project construction would not conflict with a program, plan, ordinance, or policy addressing the circulation system impacts.

The proposed project would involve installation of a water reservoir and would not conflict with adopted policies, plans, or programs addressing the circulation system, including public transit,

bicycle, or pedestrian facilities. Operation of the project would include routine inspections and maintenance trips that would not substantially increase roadway vehicles along area roadways. As such, project operation would not conflict with a program, plan, ordinance, or policy addressing the circulation system.

Therefore, project impacts related to roadway vehicle, bicycle, and pedestrian circulation would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

CEQA Guidelines Section 15064.3(b) identifies criteria for evaluating transportation impacts. Specifically, the guidelines state VMT exceeding an applicable threshold of significance may indicate a significant impact. DSRSD has not adopted VMT thresholds; therefore, the City of Dublin's thresholds are used in this analysis. The City of Dublin established VMT thresholds of significance in its Transportation Impact Analysis Guidelines (Guidelines), adopted in July 2021. According to the City's Guidelines, a project would require a detailed VMT analysis unless it meets at least one of the City's five screening criteria. One screening criterion is Public Services projects, including but not limited to police and fire stations, public utilities, neighborhood parks, and public schools. The City's Guidelines states that these projects generally do not increase VMT and can be presumed to have less-than-significant VMT impacts, unless the project is sited in a location that would require employees or visitors to travel substantial distances (City of Dublin 2021).

The project would involve construction and operation of a DSRSD water reservoir and is a public services project. The project site would be accessible via existing area roadways and would not require DSRSD employees to travel substantial distances, as the project site is within the existing DSRSD service area. Therefore, the project would not require a detailed VMT analysis and can be presumed to have a less-than-significant impact related to VMT.

LESS THAN SIGNIFICANT IMPACT

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

The project would involve the construction of a new access staircase that would only be used by maintenance personnel during operation. The access staircase would not introduce a hazard due to a geometric design feature or incompatible use. Construction equipment would be staged outside of roadways, and operation of the project would not require the use of incompatible land use or equipment. Project operation would involve operational maintenance trips similar to existing vehicle trips required for adjacent development and utilities. As such, the project would not substantially increase hazards due to a geometric design feature or incompatible use. Therefore, no project impact would occur related to potential roadway hazards.

NO IMPACT

d. Would the project result in inadequate emergency access?

The project would not require road closures and would not interfere with access to area roadways. During project construction, construction equipment and vehicles would be staged on site and/or on the Croak Property, and during project operation the project would not generate a substantial amount of vehicle trips. The access staircase would be constructed consistent with required widths to provide adequate access to the site. As such, the project would not result in inadequate emergency access. Therefore, no project impact would occur related to emergency access adequacy.

NO IMPACT

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18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in a 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:				
a. 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)?	☐	■	☐	☐
b. 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 I of Public Resources Code Section 5024.1? In applying the criteria set forth 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.	☐	■	☐	☐

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 that is 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)?

b. Would the project cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set in subdivision (c) of Public Resources Code Section 5024.1?

On January 24, 2023, the 8 following Native American Heritage Commission (NAHC)-identified local Native American tribal groups were formally notified that the Service initiated environmental review of the proposed project and were invited to provide consultation:

- Amah Mutsun Tribal Band of Mission San Juan Bautista,
- Costanoan Rumsen Carmel Tribe,
- Indian Canyon Mutsun Band of Costanoan,
- Muwekma Ohlone Indian Tribe of the SF Bay Area,
- North Valley Yokuts Tribe, the
- Ohlone Indian Tribe, the
- Confederated Villages of Lisjan, Wilton Rancheria Tribe, and the
- Wuksache Indian Tribe/Eshom Valley Band.

Under AB 52, Native American tribes have 30 days to respond and request further project information and formal consultation. On March 9, 2023, Ms. Kanyon Sayers-Roods, of the Indian Canyon Mutsun Band of Costanoan, responded to the District, via email, requesting consultation for the project under AB 52. Ms. Sayers-Roods identified that the project site is near the boundary of a potentially eligible cultural site, and requested a formal consultation meeting. The consultation meeting was held via Zoom on March 30, 2023, during which Ms. Sayers-Roods requested a cultural sensitivity training be provided to construction crews prior to the start of ground disturbance. No other tribes have requested consultation as of December 2023.

The District formally consulted with the Indian Canyon Mutsun Band of Costanoan under AB 52. The tribe identified a nearby cultural site and requested cultural sensitivity training be provided to construction crews prior to the start of ground disturbance. A Worker's Environmental Awareness Program training is included as Mitigation Measure TCR-1 below.

Although the project site does not contain any known tribal cultural resources listed on or eligible for listing on the CRHR or a local register, there is potential to uncover unknown buried archaeological and tribal cultural resources during project-related ground-disturbing construction activities. Such finds could potentially be considered tribal cultural resources eligible for listing in the CRHR or a local register or be considered a tribal cultural resource. Should project construction activities encounter and damage or destroy a tribal cultural resource or resources, impacts would be considered potentially significant. However, implementation of Mitigation Measure TCR-1 detailed below and Mitigation Measure CUL-1 detailed in Environmental Checklist Section 5, *Cultural Resources* would preserve tribal cultural resources in the event they are uncovered during project construction.

Since there would be no ground-disturbing activities during project operation, there would be no operational impact related to potential disturbance of tribal cultural resources.

Therefore, the proposed project would result in a less-than-significant-with-mitigation-incorporated impact related to tribal cultural resources.

Mitigation Measure

TCR-1 Implement a Worker's Environmental Awareness Program

A qualified archaeologist shall be retained to conduct a Worker's Environmental Awareness Program (WEAP) training on archaeological sensitivity for all construction personnel prior to the commencement of any ground-disturbing activities. The training shall be conducted by an archaeologist who meets or exceeds the Secretary of the Interior's Professional Qualification Standards for archaeology (National Park Service 1983). Archaeological sensitivity training shall

include a description of the types of cultural material that may be encountered, cultural sensitivity issues, the regulatory environment, and the proper protocol for treatment of the materials in the event of a find.

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19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, 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?	☐	☐		☐

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The project would involve construction and operation of a water reservoir and water pipeline, the potential environmental effects of which are analyzed throughout this IS-MND. As discussed throughout this IS-MND, the project would not result in significant environmental effects and would include implementation of mitigation measures when necessary to reduce potentially significant environmental effects. As such, the project would not result in significant environmental effects

related to the construction of new water supply facilities. Therefore, impacts related to provision of new or expanded water supply facilities would be less than significant.

The project would not involve construction and operation of wastewater facilities or result in the need for new or expanded wastewater facilities. Therefore, no impact would result related to provision or new or expanded wastewater facilities.

As discussed under Environmental Checklist Section 10, *Hydrology and Water Quality*, the project would not have a substantial effect on the amount of impervious surfaces as compared to existing conditions, because the reservoir and pipelines would be located underground. The proposed access staircase would minimally increase the amount of impervious surfaces within the project site but would not substantially alter the drainage patterns of the project site. Therefore, the proposed project would not increase stormwater flow such that new or expanded stormwater drainage systems would be necessary. Therefore, no impact would result related to provision or new or expanded stormwater facilities.

As discussed under Environmental Checklist Section 6, *Energy*, the project would not require electricity during operation. The project would also not require natural gas or telecommunication connections or use. As such, the project would not require or result in the relocation or construction of new or expanded electricity, natural gas, or telecommunication facilities. Therefore, no impact would result related to provision or new or expanded electricity, natural gas, or telecommunication facilities.

Overall, the project would not require or result in the relocation or construction of new or expanded water, wastewater, stormwater, electric power, natural gas, or telecommunications facilities in a manner that could cause significant environmental effects. Therefore, project impacts related to provision of utility facilities would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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

The project would consist of a 1.3-million-gallon water reservoir that would increase DSRSD water supply capacity for existing and planned development within Dublin. The proposed reservoir was planned by DSRSD in its Water Master Plan Update (DSRSD 2016) and the 2020 Urban Water Management Plan (DSRSD 2021) that concluded that DSRSD is anticipated to have sufficient water supplies available for existing and planned development within Dublin during normal, dry, and multiple dry years. Nevertheless, the project would have no habitable uses and, thus, no water demand itself. Therefore, no project impact would result related to sufficiency of water supplies would be less than significant.

NO IMPACT

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

The project would consist of an improvement to the DSRSD potable water supply system and would serve existing and planned development within Dublin. The project would not generate wastewater or discharge any water into the wastewater collection system. Therefore, there would be no project impacts related to wastewater treatment infrastructure.

NO IMPACT

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Construction activities may temporarily generate solid waste, including soils and construction waste, which would be disposed of in accordance with all applicable federal, State, and local statutes and regulations. Grading would result in a maximum net soil export of approximately 47,700 cubic yards (12,000 cubic yards for the reservoir, 9,000 cubic yards for the staircase, and 26,700 cubic yards for the potential future access road). Soil not used as fill in different construction sites and other construction debris would be transported to the Altamont Landfill, approximately 10 miles northeast of the project site. Altamont Landfill has a remaining capacity of 65.4 million cubic yards, and soils excavated during project construction would represent less than 1 percent of the landfill's remaining capacity (California Department of Recycling and Resource Recovery 2019). As such, the project would not generate solid waste in excess of the capacity of local infrastructure.

The project would be required to comply with all applicable laws and regulations related to solid waste generation, collection, and disposal. The project would result in a short-term and temporary increase in solid waste generation during construction but would not substantially affect standard solid waste operations of any landfill accepting waste. Recycling and reuse activities during construction would comply with the California Integrated Waste Management Act of 1989 (AB 939). Once operational, the project would include unmanned facilities that would not generate solid waste. Therefore, project impacts related to solid waste generation and consistency with solid waste reduction regulations would be less than significant.

LESS THAN SIGNIFICANT IMPACT

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20 Wildfire

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

a. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

According to maps prepared by CAL FIRE, the project site is designated as a Moderate FHSZ and is within a Local Responsibility Area (LRA) (CAL FIRE 2007). The project site would be served by the Alameda County Fire Department. The nearest State Responsibility Areas (SRAs) are located north and east of the project site immediately outside Dublin city limits. The project site is surrounded by Moderate FHSZ in all directions. The nearest High FHSZ is located approximately 0.9 mile northeast of the project site along Doolan Road, and the nearest Very High FHSZ is located approximately 5.5 miles southwest of the project site along Foothill Road in the City of Pleasanton (CAL FIRE 2007).

Construction of the project would not require closure of area roadways, and operation of the project would not substantially increase roadway vehicle volumes on area roadways. The project would not introduce habitable structures to the project site. As such, the project would not interfere

with access to area emergency evacuation routes or interfere with the City's ability to implement emergency response plans or evacuation plans. Therefore, no project impact would occur with regard to impairment of an emergency response or evacuation plan.

NO IMPACT

b. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, 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?

According to guidance provided by CAL FIRE, sloping land increases susceptibility to wildfire, because fire typically burns faster up steep slopes (CAL FIRE 2000). The proposed reservoir would be located on top of a hill, which then slopes downward toward the proximate residential development. In the event of a wildfire, fire would generally burn faster upslope toward the project site and existing development. However, being a reservoir project, the project does not include any habitable development, and thus, the project would not introduce occupants to the project area. The predominant prevailing wind direction in Dublin is from west to east (WeatherSpark 2022). Wind would direct wildfires to the east away from the project site and existing development; however, this assumption cannot be relied upon as localized shifts in wind direction can occur at any time, and nearby sensitive receptors may be exposed to wildfire pollutants.

During construction of the project, construction equipment may produce sparks that could ignite vegetation. However, the project would be required to comply with regulations related to construction equipment and fire suppressants, including but not limited to California Public Resources Code Section 4442, which requires spark arrestors on potentially-spark inducing equipment. During operation, the project would not involve activities that could increase the risk of wildfire ignition, and the project would not introduce new occupants to the project area.

As such, the project would not exacerbate existing wildfire risk and would not substantially increase the risk of exposing project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, and no occupants would inhabit the project site. Therefore, no project impact related to occupant pollutant exposure would occur.

NO IMPACT

c. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project 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?

The project would involve the construction of a new water reservoir and an access staircase within a LRA designated as a Moderate FHSZ. No additional infrastructure would be implemented, and no extensions beyond the project site into an SRA would occur. The project would not require the installation of fuel breaks, emergency water sources, powerlines, or aboveground utilities. The project would be located adjacent to a developed area already served by the Alameda County Fire Department. As such, project operation would not exacerbate fire risk compared to existing conditions. Therefore, no project operational impact would result related to exacerbation of fire risk would be less than significant.

NO IMPACT

d. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Vegetation on hillslopes helps to stabilize soil, slow water flow, and support percolation into the soil. Severe wildfires damage trees, the shrub canopy, vegetation, and soil. Once vegetation burns, a greater surface area of soil is exposed to the elements, and the lack of roots decreases the structural integrity of the soil. Thus, wildfire burn areas typically endure an increased runoff after intense rainfall, which can put residences and structures downslope of a burned area at risk of localized floods and landslides.

As discussed in Environmental Checklist Section 10, *Hydrology and Water Quality*, the project would conform to design requirements associated with proper site preparation and grading practices and would implement surface drainage improvements and erosion control measures as well as construction best management practices (BMPs). Construction BMPs would be implemented during grading operations, as specified in the SWPPP, to stabilize graded slopes and prevent excessive runoff and erosion.

The project would not substantially alter the topography of the project site compared to existing conditions because the reservoir would be located underground, and construction of the access staircase would not substantially alter the existing topography of the site. As discussed under Environmental Checklist Section 7, *Geology and Soils,* the reservoir would be constructed outside of mapped landslide zones; however, the potential access road alignment would traverse mapped landslide zones. Construction of the reservoir, associated infrastructure would be subject to standards of the CBC, and soils would be properly compacted beneath the reservoir's access staircase to minimize the project's potential to exacerbate existing landslide risk within the project site. As such, with project compliance with applicable building standards, the project would not substantially affect soil stability or increase the potential for on- or off-site landslides.

Additionally, as discussed under Environmental Checklist Section 10, *Hydrology and Water Quality*, the project is not located within a flood hazard zone and would not substantially alter runoff amounts or drainage patterns in the vicinity of the project site due to involvement of an enclosed, undergrounded water reservoir that would essentially maintain the existing topography of the project site. As such, the project would not substantially affect flooding, runoff potential, or drainage on site or off site.

Nevertheless, the project would not result in any additional people or habitable structures on site or off site. Therefore, no project impact would occur related to exposure of people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes, and impacts would be less than significant.

NO IMPACT

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21 Mandatory Findings of Significance

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

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

Potential impacts to biological resources are addressed in Environmental Checklist Section 4, *Biological Resources*. As described therein, there is moderate potential for certain special-status species to occur on the project site, including California red-legged frog, California tiger salamander, and loggerhead shrike. However, the project site is limited in size, as compared to the total size of habitats supporting fish and wildlife species, and the project would only result in temporary impacts to special-status species during construction, as the proposed reservoir would be located underground and would not affect any species during operation. Due to the local scale of the

proposed project, the proposed project would not 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. This impact would be less than significant with the implementation of Mitigation Measures BIO-1 through BIO-3.

As discussed in Environmental Checklist Section 5, *Cultural Resources*, the proposed project would not modify or disturb any known historical resources, and therefore the proposed project would not cause a substantial change in the significance of a historical resource. Project implementation would not impact known subsurface archaeological deposits, and DSRSD and the construction contractor for the proposed project would implement the standard procedures for evaluation, consultation, avoidance, and data recovery of unanticipated archaeological resources, if discovered during construction. Because the proposed project would not eliminate known important examples of the major periods of California history or prehistory, this impact would be less than significant with the implementation of Mitigation Measure CUL-1.

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

As described in Environmental Checklist Sections 1 through 20, the project would result in less-than-significant impacts (sometimes with mitigation incorporated) or no impacts related to the environment with respect to all environmental issues. This is largely because project construction activities would be temporary, low-intensity, and would not significantly alter the environmental baseline condition. In addition, upon the completion of construction, there would be minimal operational and maintenance needs of the proposed reservoir. As such, cumulative impact discussions below are primarily focused on construction-related cumulative impacts.

Cumulative impacts could occur if the construction of other cumulative projects identified in Table 1 occurs at the same time as project construction and in the same geographic scope, such that the effects of similar impacts of multiple projects could combine to create greater levels of impact than would occur at the project level. For example, if the construction of other projects in the area occurs at the same time as project activities, combined (i.e., cumulative) air quality and noise impacts may be greater than at the project level.

At least four planned development projects are located within one mile of the project site, which are summarized in the Project Description in Table 1. The exact construction timing of these projects is not known at this time; therefore, it is conservatively assumed that construction of these planned projects could overlap in time with construction of the project.

Project impacts are primarily temporary, localized effects that would occur during construction activities. As determined in this IS-MND document, no impacts would occur with regard to the following topics and, as such, do not need to be discussed in terms of cumulative impacts since cannot combine with other cumulative projects to result in cumulative impacts: agriculture/forestry resources, land use, mineral resources, population/housing, public services, recreation, and wildfire. Thus, the potential for the project to contribute to cumulative impacts would be limited to the infrequent periods of project activities and the following issue areas:

- **Aesthetics**. Cumulative projects could result in changes to scenic vistas, visual character, and light and glare. Cumulative projects would alter views north of I-580, which is a County-designated scenic route, and would increase light and glare from individual development sites. Therefore, cumulative aesthetic impacts would be potentially significant. The project site would not install permanent above-ground features or permanent lighting; therefore, the project would not have a considerable contribution to this cumulative impact.
- **Air Quality.** The BAAQMD is designated nonattainment for ozone CAAQS and NAAQS, PM_{10} CAAQS, and $PM_{2.5}$ NAAQS. Therefore, cumulative air quality exceedances currently exist for these pollutants, and, given that all the cumulative projects' construction would result in criteria pollutant and TAC emissions, there could be a significant cumulative air quality impact. As discussed in Environmental Checklist Section 3, *Air Quality*, project construction activities would not generate emissions of this air pollutant exceeding BAAQMD significance thresholds, which are intended to assess whether a project's contribution to existing cumulative air quality impacts is considerable. Therefore, the project's contribution to cumulative air quality impacts would not be cumulatively considerable.
- **Biological Resources.** Most cumulative impacts related to biological resources occur when a disproportionate number of cumulative projects occur at once and regionally impact a local population of a special-status species, riparian habitat, sensitive natural communities, wetlands, or other locally protected biological resources. In this case, the identified cumulative projects (please refer to Table 1) would occur in undeveloped areas. Thes projects would include elements that have the potential to result in significant cumulative impacts related to special-status plant and wildlife species or sensitive natural communities. Due to the nature of these projects and the discretionary approvals required for each one, several of these development projects would be required to undergo CEQA review, which would identify the extent of biological resource impacts and require appropriate mitigation of those impacts. Projects exempt from CEQA would be required to undergo City review, and would be subject to existing Dublin Municipal Code requirements and standard conditions of approval. Given the uncertainty in the extent of impacts associated with these projects, this analysis conservatively assumes a significant cumulative impact to biological resources would occur. The project would be required to implement Mitigation Measures BIO-1 through BIO-3 to reduce potential impacts to biological resources to a less-than-significant level such that project-level impacts would not result in a cumulatively considerable contribution to this cumulative impact.
- **Cultural, Paleontological, and Tribal Cultural Resources.** Cumulative development in the region would continue to disturb areas with the potential to contain cultural, paleontological and tribal cultural resources. Cultural, paleontological, and tribal cultural resources could be damaged or destroyed from the construction of cumulative projects could be significant. As mentioned above, the cumulative development projects have undergone or would be required to undergo CEQA review, which would determine the extent of potential cultural, paleontological, and tribal cultural resources impacts and mitigate those impacts appropriately. Projects exempt from CEQA would be required to undergo City review, and would be subject to existing Dublin Municipal Code requirements and standard conditions of approval. If these cumulative projects would result in impacts to known or unknown cultural, paleontological, or tribal cultural resources, impacts to such resources would be addressed on a case-by-case basis. Given the uncertainty in the extent of impacts associated with these projects, this analysis conservatively assumes a significant cumulative impact to cultural, paleontological, and tribal cultural resources would occur. The proposed project would be required to implement Mitigation Measures CUL-1, GEO-1, and TCR-1 to reduce potential impacts to cultural, paleontological, and

tribal cultural resources to a less-than-significant level such that project-level impacts would not result in a cumulatively considerable contribution to this cumulative impact.

- **Energy.** Cumulative projects would be required to comply with applicable state and local regulations and standards that require efficient energy use. Therefore, cumulative energy impacts are less than significant, and the project would not result in a considerable contribution to this impact.
- **Greenhouse Gas Emissions.** Contribution of GHG emissions to the global atmosphere and resultant climate change are, by definition, cumulative impacts. As discussed in Environmental Checklist Section 8, *Greenhouse Gas Emissions*, the adverse environmental impacts of cumulative GHG emissions, including sea level rise, increased average temperatures, more drought years, and more large forest fires, are already occurring. Construction of cumulative projects would result in GHG emissions being added to the atmosphere. As a result, cumulative construction impacts related to GHG emissions are significant. As discussed in Environmental Checklist Section 8, *Greenhouse Gas Emissions*, the project would not conflict with an applicable plan, policy, or regulation related to reducing GHG emissions and would therefore not result in a cumulatively considerable contribution to this cumulative impact.
- **Geology and Soils**. Impacts to geology and soils tend to be localized, due to the nature of such impacts. For example, landslides, erosion, and liquefaction are highly localized, and impacts from one project would at most affect adjacent properties in most cases. Cumulative projects would be required to comply with applicable state and local regulations and standards that would address geology and soils impacts. Therefore, cumulative geology and soils impacts are less than significant, and the project would not result in a considerable contribution to this impact.
- **Hazards and Hazardous Materials**. Cumulative projects would be required to comply with applicable state and local regulations and standards that would address hazards and hazardous materials impacts, including risks related to the transport, storage, or disposal of hazardous materials; and reasonably foreseeable upset of hazardous materials. Therefore, cumulative hazards and hazardous materials impacts are less than significant, and the project would not result in a considerable contribution to this impact.
- **Hydrology and Water Quality**. Cumulative projects would be required to comply with applicable state and local regulations and standards that would address hydrology and water quality impacts, including water quality standards, sustainable groundwater management, erosion and siltation, and contributions to flooding. Therefore, cumulative hydrology and water quality impacts are less than significant, and the project would not result in a considerable contribution to this impact.
- **Noise.** Overlapping construction activities associated with other cumulative projects in conjunction with project activities could result in cumulative noise impacts related to a temporary increase in ambient noise levels at the same noise-sensitive receivers located throughout the area, especially during construction activities. However, cumulative projects, including the project would be subject to compliance with the noise level limits established in Dublin Municipal Code Chapter 5.28. Therefore, cumulative construction noise impacts would be less than significant, and the project would not result in a considerable contribution to this impact.
- **Transportation.** Overlapping construction schedules associated with other cumulative projects in conjunction with project activities could result in cumulative transportation impacts, such as impacts related to VMT and emergency access during construction. Cumulative projects would

be required to be evaluated with the City's VMT thresholds, and would either be screened out from a VMT analysis or be required to complete a VMT analysis to determine the project's potential impacts. Projects would also be subject to State requirements to achieve a reduction in project-generated VMT. Therefore, cumulative construction transportation impacts would be less than significant, and the project would not result in a considerable contribution to this impact.

- **Utilities and Service Systems**. Cumulative projects would increase the demand for utilities and service systems, including water, wastewater, stormwater, electric power, natural gas, and telecommunications facilities. The construction of new facilities could result in significant cumulative impacts. Because the proposed project would not require the construction or relocation of such facilities, it would not have a considerable contribution to this cumulative impact. Cumulative projects would be required to comply with applicable state and local regulations and standards that require solid waste reduction. Therefore, cumulative solid waste impacts are less than significant, and the project would not result in a considerable contribution to this impact.

Therefore, the project, with implementation of identified mitigation, would not result in impacts that are cumulatively considerable.

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

In general, impacts to human beings are associated with air quality, hazards and hazardous materials, noise, and transportation impacts. As discussed in Environmental Checklist Section 3, *Air Quality*, the proposed project would not result in significant air quality impacts during construction or operation with implementation of Mitigation Measure AQ-1. As discussed in Environmental Checklist Section 9, *Hazards and Hazardous Materials*, compliance with federal, State, and local laws regulating the transportation of hazardous materials would minimize the potential for an accidental release of hazardous materials during construction, and the project would not involve the use of hazardous materials during operation. As discussed in Environmental Checklist Section 13, *Noise*, the project would not generate substantial temporary or permanent increases in ambient noise levels in the vicinity of the project site. As discussed in Environmental Checklist Section 17, *Transportation*, the project would not result in substantial new vehicle trips in the vicinity of the project site. Therefore, the project would not adversely affect human beings, directly or indirectly, and impacts would be less than significant with mitigation incorporated.

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References

Bibliography

Alameda County Community Development Agency. 2012. Livermore Executive Airport Land Use Compatibility Plan. https://www.acgov.org/cda/planning/generalplans/documents/LVK_ALUCP_082012_FULL.pdf (accessed December 2022).

Bay Area Air Quality Management District (BAAQMD). 2017. Spare the Air: Cool the Climate. Final 2017 Clean Air Plan. https://www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf (accessed December 2022).

_____. 2022. California Environmental Quality Act Air Quality Guidelines. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines (accessed January 2024).

_____. 2022. CEQA Thresholds and Guidelines Update. https://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines (accessed December 2022).

Berlogar Stevens & Associates. 2019. Due Diligence Level Geotechnical Investigation – Croak Property, Dublin, California.

California, State of. 2018. Climate Change Impacts in California. https://oag.ca.gov/environment/impact (accessed December 2022).

California Air Resources Board (CARB). 2016. Carbon Monoxide & Health. https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health (accessed December 2022).

_____. 2017. California's 2017 Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf (accessed December 2022).

_____. 2022. Overview: Diesel Exhaust and Health. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health (accessed December 2022).

California Department of Conservation (DOC). 2016. California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/ (accessed December 2022).

_____. 2017. State of California Williamson Act Contract Land. https://planning.lacity.org/eir/HollywoodCenter/Deir/ELDP/(E)%20Initial%20Study/Initial%20Study/Attachment%20B%20References/California%20Department%20of%20Conservation%20Williamson%20Map%202016.pdf (accessed December 2022).

_____. 2019. Earthquake Zones of Required Investigation. https://maps.conservation.ca.gov/cgs/EQZApp/ (accessed December 2022).

_____. 2021. California Tsunami Maps and Data. https://www.conservation.ca.gov/cgs/tsunami/maps (accessed December 2022).

California Department of Fish and Wildlife (CDFW). 2021. Timberland Conservation and Fire Resiliency Program. https://wildlife.ca.gov/Conservation/Timber (accessed December 2022).

_____. 2023a. California Natural Diversity Database, Rarefind V. Accessed December 2023.

_____. 2023b. Special Animals List. Biogeographic Data Branch, California Natural Diversity Database. Accessed December 2023.

_____. 2023c. Biogeographic Information and Observation System (BIOS). December 2023 from www.wildlife.ca.gov/data/BIOS.

_____. 2023d. Special Vascular Plants, Bryophytes, and Lichens List. Biogeographic Data Branch, California Natural Diversity Database. Accessed November 2023.

California Department of Forestry and Fire Protection (CAL FIRE). 2000. Fire Protection Training Procedures Handbook 4320.5: Wildland Fire Behavior- Topography.

_____. 2007. Fire Hazard Severity Zone Viewer. https://egis.fire.ca.gov/FHSZ/ (accessed December 2022).

California Department of Recycling and Resource Recovery. 2019. SWIS Facility/Site Activity Details – Altamont Landfill & Resource Recovery. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/7?siteID=7 (accessed December 2022).

California Department of Toxic Substances Control. 2024. EnviroStor database. https://www.envirostor.dtsc.ca.gov/public/map/?global_id=60002757 (accessed January 2024).

California Department of Transportation (Caltrans). 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol. (CT-HWANP-RT-13-069.25.2) September. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf (accessed December 2022).

_____. 2019. California State Scenic Highway System Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed December 2022).

_____. 2020. Transportation and Construction Vibration Guidance Manual (CT-HWANP-RT-20-365.01.01). April. https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tcvgm-apr2020-a11y.pdf (accessed December 2022).

California Energy Commission (CEC). 2022a. 2021 Total System Electric Generation. https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2020-total-system-electric-generation (accessed December 2022).

_____. 2022b. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting (accessed December 2022).

California Environmental Protection Agency. 2024. Cortese List Data Resources. https://calepa.ca.gov/sitecleanup/corteselist/ (accessed January 2024).

California Geological Survey. 2022. Aggregate Resource Sectors, South San Francisco Bay P-C Region. https://filerequest.conservation.ca.gov/RequestFiles?files=59419 (accessed December 2022).

California Native Plant Society. 2023. Inventory of Rare and Endangered Plants. Online edition, v9.5. https://www.rareplants.cnps.org. Accessed December 2023.

Cornell Lab of Ornithology. 2023. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. http://www.ebird.org. Accessed December 2023.

Dublin, City of. 2019. City of Dublin GIS Portal - Average Daily Traffic Volumes. https://gis.dublin.ca.gov/Html5Viewer/?viewer=default&layerTheme=3# (accessed December 2022).

_____. 2020. City of Dublin Climate Action Plan 2030 and Beyond. https://dublin.ca.gov/DocumentCenter/View/24447/Climate-Action-Plan-2030-And-Beyond (accessed March 2024).

_____. 2021. Transportation Impact Analysis Guidelines. https://dublin.ca.gov/DocumentCenter/View/28516/Transportation-Impact-Analysis-Guidelines-2021?bidId= (accessed December 2022).

_____. 2022. City of Dublin General Plan. https://www.dublin.ca.gov/DocumentCenter/View/30287/General-Plan-Update-04192022-WEB (accessed December 2022).

_____. 2024a. Dublin California Development Projects. https://dublin-development.icitywork.com/ (accessed January 2024).

_____. 2024b. Dublin Zoning Ordinance Chapter 8.32 Planned Development Zoning District. https://www.codepublishing.com/CA/Dublin/html/Dublin08/Dublin0832.html#8.32 (accessed March 2024).

Dublin San Ramon Services District (DSRSD). 2016. Water Master Plan Update. https://www.dsrsd.com/home/showpublisheddocument/2816/636710718602000000 (accessed December 2023).

_____. 2021. 2020 Urban Water Management Plan. https://www.dsrsd.com/home/showpublisheddocument/7749/637607511715070000 (accessed December 2022).

_____. 2021. Urban Water Management Plan. https://www.dsrsd.com/home/showpublisheddocument/7749/637607511715070000 (accessed July 2022).

Federal Emergency Management Agency. 2009. FEMA's National Flood Hazard Layer Viewer. https://hazards-fema.maps.arcgis.com/apps/webappviewer/index.html?id=8b0adb51996444d4879338b5529aa9cd&extent=-121.94529102661183,36.5159779735144,-121.90374897338809,36.53322138877889 (accessed December 2022).

Federal Transit Administration. 2018. Transit and Noise Vibration Impact Assessment Manual. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed December 2022).

iNaturalist community (iNaturalist). 2023. Observations of Wildlife Species from South San Francisco Bay, California. Available at: https://www.inaturalist.org. Accessed December 2023.

Intergovernmental Panel on Climate Change (IPCC). 2021. Climate Change 2022: Impacts, Adaptation, and Vulnerability. https://www.ipcc.ch/report/ar6/wg2/ (accessed December 2022).

Office of Planning and Research. 2024. Search Results for Dublin, City of. https://ceqanet.opr.ca.gov/Search?LeadAgency=Dublin%2c+City+of (accessed March 2024).

Poulin Ray, L. Danielle Todd, E. A. Haug, B. A. Millsap, and M. S. Martell. 2011.Burrowing Owl (*Athene cunicularia*). The Birds of North America Online (A. Poole Ed.). Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/061.

Quinn, J. 2008. The ecology of the American badger (*Taxidea taxus*) in California: assessing conservation status on multiple scales. Ph.D. Dissertation. The University of California Davis, Davis, California.

San Francisco Bay Regional Water Quality Control Board. 2017. Basin Planning. https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html (accessed December 2022).

State Water Resources Control Board. 2024. GeoTracker database. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Sacramento# (accessed January 2024).

Trenham, P.C., and H.B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. *Ecological Applications* 15: 1158–1168.

United States Department of Agricultural, Natural Resources Conservation Service. 2023a. Web Soil Survey. Soil Survey Area: Alameda County, California. Soil Survey Data: Version 17, September 11, 2023. Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed December 2023.

United States Energy Information Administration. 2022. California State Profile and Energy Estimates. https://www.eia.gov/state/?sid=CA (accessed December 2022).

United States Environmental Protection Agency. 2021. Criteria Air Pollutants. https://www.epa.gov/criteria-air-pollutants (accessed December 2022).

_____. 2022. Atmospheric Concentrations of Greenhouse Gases. https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases#:~:text=Carbon%20dioxide%20concentrations%20have%20increased,is%20due%20to%20human%20activities. (accessed December 2022).

United States Fish and Wildlife Service (USFWS). 1973. The Endangered Species Act of 1973, as amended (16 U.S.C 1531 et seq.).

_____. 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. January 2000.

_____. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). Region 1, U.S. Fish and Wildlife Service. Portland, Oregon.

_____. 2010. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the California Red-Legged Frog.

_____. 2023a. Critical Habitat Portal. https://ecos.fws.gov/ecp/report/table/critical-habitat.html

_____. 2023b. Information for Planning and Consultation online project planning tool. https://ecos.fws.gov/ipac/.

_____. 2023c. National Wetlands Inventory (NWI) mapper. Available at: https://www.fws.gov/wetlands/data/mapper.html. Accessed November 2023.

United States Geological Survey. 2024. Frequently Asked Questions. https://www.usgs.gov/faqs/what-magnitude-does-damage-begin-occur-earthquake#:~:text=There%20is%20not%20one%20magnitude,somewhere%20above%204%20or%205. (accessed March 2024).

_____. 2023. National Map. https://apps.nationalmap.gov/viewer/ (accessed December 2023).

_____. 2022. Search Earthquake Catalog – Alameda County. https://earthquake.usgs.gov/earthquakes/search/ (accessed December 2022).

WeatherSpark. 2022. Wind Direction in Dublin, CA. https://weatherspark.com/y/1074/Average-Weather-in-Dublin-California-United-States-Year-Round#:~:text=The%20predominant%20average%20hourly%20wind,of%2092%25%20on%20August%2010. (accessed December 2022).

Zeiner, D., W.F. Laudenslayer, Jr., and K.E. Mayer (May 1988). California's Wildlife. California Statewide Wildlife Habitat Relationship System, Volumes I, II, & III. California Department of Fish and Wildlife.

Zone 7 Water Agency. 2020. Groundwater Management. https://www.zone7water.com/groundwater-management (accessed December 2022).

_____. 2022. Where does our water come from? https://www.zone7water.com/post/where-does-our-water-come (accessed December 2022).

List of Preparers

Rincon Consultants, Inc. prepared this IS-MND under contract to the Dublin San Ramon Services District. Persons involved in data gathering analysis, project management, and quality control are listed below.

Rincon Consultants, Inc.

Kelsey Bennett, MPA, LEED-AP, Principal-in-Charge
Aileen Mahoney, Senior Environmental Planner/Project Manager
Kayleigh Limbach, Environmental Planner
Nichole Yee, Environmental Planner
Megan Knight, Environmental Planner
Courtney Montgomery, Archaeologist
Anastasia Ennis, Senior Biologist

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Appendix A

CalEEMod Output Files

DSRSD Reservoir Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	DSRSD Reservoir
Construction Start Date	1/1/2025
Operational Year	2026
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	14.8
Location	N Terracina Dr, Dublin, CA 94568, USA
County	Alameda
City	Dublin
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	1677
EDFZ	1
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

Other Non-Asphalt Surfaces	17.5	1000sqft	12.0	0.00	0.00	0.00	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-10-A	Water Exposed Surfaces

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.78	2.33	18.3	20.0	0.05	0.80	0.00	0.80	0.74	0.00	0.74	—	5,228	5,228	0.21	0.04	0.00	5,246
Mit.	2.78	2.33	18.3	20.0	0.05	0.80	0.00	0.80	0.74	0.00	0.74	—	5,228	5,228	0.21	0.04	0.00	5,246
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	8.65	15.0	63.7	61.3	0.17	2.54	17.9	20.4	2.34	7.49	9.83	—	19,545	19,545	0.84	0.84	0.29	19,817
Mit.	8.65	15.0	63.7	61.3	0.17	2.54	7.90	10.4	2.34	3.17	5.51	—	19,545	19,545	0.84	0.84	0.29	19,817
% Reduced	—	—	—	—	—	—	56%	49%	—	58%	44%	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.17	1.81	14.7	15.5	0.04	0.62	1.28	1.90	0.57	0.50	1.08	—	4,360	4,360	0.18	0.08	0.34	4,388

Mit.	2.17	1.81	14.7	15.5	0.04	0.62	0.56	1.19	0.57	0.21	0.79	—	4,360	4,360	0.18	0.08	0.34	4,388
% Reduced	—	—	—	—	—	—	56%	38%	—	58%	27%	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.40	0.33	2.69	2.84	0.01	0.11	0.23	0.35	0.10	0.09	0.20	—	722	722	0.03	0.01	0.06	727
Mit.	0.40	0.33	2.69	2.84	0.01	0.11	0.10	0.22	0.10	0.04	0.14	—	722	722	0.03	0.01	0.06	727
% Reduced	—	—	—	—	—	—	56%	38%	—	58%	27%	—	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.78	2.33	18.3	20.0	0.05	0.80	0.00	0.80	0.74	0.00	0.74	—	5,228	5,228	0.21	0.04	0.00	5,246
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.65	7.11	63.7	61.3	0.17	2.54	17.9	20.4	2.34	7.49	9.83	—	19,545	19,545	0.84	0.84	0.29	19,817
2026	2.70	15.0	17.3	20.4	0.05	0.73	0.21	0.90	0.68	0.05	0.69	—	5,231	5,231	0.21	0.04	0.02	5,249
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.17	1.81	14.7	15.5	0.04	0.62	1.28	1.90	0.57	0.50	1.08	—	4,360	4,360	0.18	0.08	0.34	4,388
2026	0.37	0.71	2.40	2.88	0.01	0.10	0.01	0.11	0.10	< 0.005	0.10	—	714	714	0.03	0.01	0.01	717
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.40	0.33	2.69	2.84	0.01	0.11	0.23	0.35	0.10	0.09	0.20	—	722	722	0.03	0.01	0.06	727
2026	0.07	0.13	0.44	0.53	< 0.005	0.02	< 0.005	0.02	0.02	< 0.005	0.02	—	118	118	< 0.005	< 0.005	< 0.005	119

2.3. Construction Emissions by Year, Mitigated

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

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.78	2.33	18.3	20.0	0.05	0.80	0.00	0.80	0.74	0.00	0.74	—	5,228	5,228	0.21	0.04	0.00	5,246
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	8.65	7.11	63.7	61.3	0.17	2.54	7.90	10.4	2.34	3.17	5.51	—	19,545	19,545	0.84	0.84	0.29	19,817
2026	2.70	15.0	17.3	20.4	0.05	0.73	0.21	0.90	0.68	0.05	0.69	—	5,231	5,231	0.21	0.04	0.02	5,249
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.17	1.81	14.7	15.5	0.04	0.62	0.56	1.19	0.57	0.21	0.79	—	4,360	4,360	0.18	0.08	0.34	4,388
2026	0.37	0.71	2.40	2.88	0.01	0.10	0.01	0.11	0.10	< 0.005	0.10	—	714	714	0.03	0.01	0.01	717
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.40	0.33	2.69	2.84	0.01	0.11	0.10	0.22	0.10	0.04	0.14	—	722	722	0.03	0.01	0.06	727
2026	0.07	0.13	0.44	0.53	< 0.005	0.02	< 0.005	0.02	0.02	< 0.005	0.02	—	118	118	< 0.005	< 0.005	< 0.005	119

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.08	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.08	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

2.6. Operations Emissions by Sector, Mitigated

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

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.08	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.08	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3. Construction Emissions Details

3.1. Site Preparation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.29	2.77	23.0	23.1	0.07	0.86	—	0.86	0.79	—	0.79	—	7,317	7,317	0.30	0.06	—	7,342
Dust From Material Movement	—	—	—	—	—	—	2.12	2.12	—	0.23	0.23	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.07	1.07	< 0.005	0.04	—	0.04	0.04	—	0.04	—	341	341	0.01	< 0.005	—	342
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.01	0.01	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.4	56.4	< 0.005	< 0.005	—	56.6
Dust From Material Movement	—	—	—	—	—	—	0.02	0.02	—	< 0.005	< 0.005	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.68	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	161	161	< 0.005	0.01	0.02	163
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.53	7.53	< 0.005	< 0.005	0.01	7.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.2. Site Preparation (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.29	2.77	23.0	23.1	0.07	0.86	—	0.86	0.79	—	0.79	—	7,317	7,317	0.30	0.06	—	7,342
Dust From Material Movement	—	—	—	—	—	—	0.83	0.83	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.07	1.07	< 0.005	0.04	—	0.04	0.04	—	0.04	—	341	341	0.01	< 0.005	—	342
Dust From Material Movement	—	—	—	—	—	—	0.04	0.04	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.20	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	56.4	56.4	< 0.005	< 0.005	—	56.6
Dust From Material Movement	—	—	—	—	—	—	0.01	0.01	—	< 0.005	< 0.005	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.68	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	161	161	< 0.005	0.01	0.02	163
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.53	7.53	< 0.005	< 0.005	0.01	7.65
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.25	1.25	< 0.005	< 0.005	< 0.005	1.27
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.3. Grading (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.17	6.86	57.9	57.6	0.14	2.45	—	2.45	2.26	—	2.26	—	14,798	14,798	0.60	0.12	—	14,849

Dust From Material Movement	—	—	—	—	—	—	16.3	16.3	—	7.08	7.08	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.45	3.81	3.79	0.01	0.16	—	0.16	0.15	—	0.15	—	973	973	0.04	0.01	—	976
Dust From Material Movement	—	—	—	—	—	—	1.07	1.07	—	0.47	0.47	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.70	0.69	< 0.005	0.03	—	0.03	0.03	—	0.03	—	161	161	0.01	< 0.005	—	162
Dust From Material Movement	—	—	—	—	—	—	0.20	0.20	—	0.09	0.09	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.14	1.53	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	361	361	0.01	0.02	0.04	366
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.33	0.09	5.60	2.14	0.03	0.08	1.16	1.24	0.08	0.32	0.40	—	4,386	4,386	0.23	0.71	0.25	4,603

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.9	23.9	< 0.005	< 0.005	0.04	24.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.36	0.14	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	288	288	0.02	0.05	0.28	303
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.96	3.96	< 0.005	< 0.005	0.01	4.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.7	47.7	< 0.005	0.01	0.05	50.1

3.4. Grading (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	8.17	6.86	57.9	57.6	0.14	2.45	—	2.45	2.26	—	2.26	—	14,798	14,798	0.60	0.12	—	14,849
Dust From Material Movement	—	—	—	—	—	—	6.36	6.36	—	2.76	2.76	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.54	0.45	3.81	3.79	0.01	0.16	—	0.16	0.15	—	0.15	—	973	973	0.04	0.01	—	976

Dust From Material Movement	—	—	—	—	—	—	0.42	0.42	—	0.18	0.18	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.08	0.70	0.69	< 0.005	0.03	—	0.03	0.03	—	0.03	—	161	161	0.01	< 0.005	—	162
Dust From Material Movement	—	—	—	—	—	—	0.08	0.08	—	0.03	0.03	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.15	0.15	0.14	1.53	0.00	0.00	0.37	0.37	0.00	0.09	0.09	—	361	361	0.01	0.02	0.04	366
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.33	0.09	5.60	2.14	0.03	0.08	1.16	1.24	0.08	0.32	0.40	—	4,386	4,386	0.23	0.71	0.25	4,603
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.10	0.00	0.00	0.02	0.02	0.00	0.01	0.01	—	23.9	23.9	< 0.005	< 0.005	0.04	24.3
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.36	0.14	< 0.005	0.01	0.08	0.08	0.01	0.02	0.03	—	288	288	0.02	0.05	0.28	303
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.96	3.96	< 0.005	< 0.005	0.01	4.02
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	< 0.005	< 0.005	0.07	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	47.7	47.7	< 0.005	0.01	0.05	50.1

3.5. Pipeline/Access Road Installation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.57	1.32	10.5	11.9	0.03	0.44	—	0.44	0.41	—	0.41	—	3,298	3,298	0.13	0.03	—	3,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.57	1.32	10.5	11.9	0.03	0.44	—	0.44	0.41	—	0.41	—	3,298	3,298	0.13	0.03	—	3,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.63	0.72	< 0.005	0.03	—	0.03	0.02	—	0.02	—	199	199	0.01	< 0.005	—	199
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.9	32.9	< 0.005	< 0.005	—	33.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.6. Pipeline/Access Road Installation (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.57	1.32	10.5	11.9	0.03	0.44	—	0.44	0.41	—	0.41	—	3,298	3,298	0.13	0.03	—	3,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.57	1.32	10.5	11.9	0.03	0.44	—	0.44	0.41	—	0.41	—	3,298	3,298	0.13	0.03	—	3,309
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	0.08	0.63	0.72	< 0.005	0.03	—	0.03	0.02	—	0.02	—	199	199	0.01	< 0.005	—	199
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.01	0.12	0.13	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	32.9	32.9	< 0.005	< 0.005	—	33.0
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.7. Reservoir Installation (2025) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.78	2.33	18.3	20.0	0.05	0.80	—	0.80	0.74	—	0.74	—	5,228	5,228	0.21	0.04	—	5,246
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.78	2.33	18.3	20.0	0.05	0.80	—	0.80	0.74	—	0.74	—	5,228	5,228	0.21	0.04	—	5,246
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	8.84	9.69	0.02	0.39	—	0.39	0.36	—	0.36	—	2,527	2,527	0.10	0.02	—	2,536
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.61	1.77	< 0.005	0.07	—	0.07	0.07	—	0.07	—	418	418	0.02	< 0.005	—	420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.8. Reservoir Installation (2025) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.78	2.33	18.3	20.0	0.05	0.80	—	0.80	0.74	—	0.74	—	5,228	5,228	0.21	0.04	—	5,246
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.78	2.33	18.3	20.0	0.05	0.80	—	0.80	0.74	—	0.74	—	5,228	5,228	0.21	0.04	—	5,246
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.35	1.13	8.84	9.69	0.02	0.39	—	0.39	0.36	—	0.36	—	2,527	2,527	0.10	0.02	—	2,536
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	0.21	1.61	1.77	< 0.005	0.07	—	0.07	0.07	—	0.07	—	418	418	0.02	< 0.005	—	420
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.9. Reservoir Installation (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.70	2.26	17.3	20.0	0.05	0.73	—	0.73	0.68	—	0.68	—	5,231	5,231	0.21	0.04	—	5,249
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	1.96	2.27	0.01	0.08	—	0.08	0.08	—	0.08	—	594	594	0.02	< 0.005	—	596
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.36	0.41	< 0.005	0.02	—	0.02	0.01	—	0.01	—	98.3	98.3	< 0.005	< 0.005	—	98.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.10. Reservoir Installation (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.70	2.26	17.3	20.0	0.05	0.73	—	0.73	0.68	—	0.68	—	5,231	5,231	0.21	0.04	—	5,249
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.31	0.26	1.96	2.27	0.01	0.08	—	0.08	0.08	—	0.08	—	594	594	0.02	< 0.005	—	596
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.36	0.41	< 0.005	0.02	—	0.02	0.01	—	0.01	—	98.3	98.3	< 0.005	< 0.005	—	98.6
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.11. Paving/Ground Restoration (2026) - Unmitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.98	1.67	14.5	19.6	0.04	0.69	—	0.69	0.64	—	0.64	—	3,796	3,796	0.15	0.03	—	3,809

Architect Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.44	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	114	114	< 0.005	< 0.005	—	115
Architectural Coatings	—	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.9	18.9	< 0.005	< 0.005	—	19.0
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	0.79	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	197	197	< 0.005	0.01	0.02	200
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.98	5.98	< 0.005	< 0.005	0.01	6.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	1.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

3.12. Paving/Ground Restoration (2026) - Mitigated

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

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.98	1.67	14.5	19.6	0.04	0.69	—	0.69	0.64	—	0.64	—	3,796	3,796	0.15	0.03	—	3,809
Architectural Coatings	—	13.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.06	0.05	0.44	0.59	< 0.005	0.02	—	0.02	0.02	—	0.02	—	114	114	< 0.005	< 0.005	—	115
Architectural Coatings	—	0.40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.08	0.11	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	18.9	18.9	< 0.005	< 0.005	—	19.0
Architectural Coatings	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Paving	—	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.07	0.79	0.00	0.00	0.21	0.21	0.00	0.05	0.05	—	197	197	< 0.005	0.01	0.02	200
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.98	5.98	< 0.005	< 0.005	0.01	6.06
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.99	0.99	< 0.005	< 0.005	< 0.005	1.00
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.1.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consum Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3.2. Mitigated

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

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.08	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.08	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipme	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.4.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.6.2. Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

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

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

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

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Site Preparation	Site Preparation	1/30/2025	2/21/2025	5.00	17.0	—
Grading	Grading	2/24/2025	3/27/2025	5.00	24.0	—
Pipeline/Access Road Installation	Building Construction	3/28/2025	4/28/2025	5.00	22.0	—
Reservoir Installation	Building Construction	4/29/2025	2/27/2026	5.00	219	—
Paving/Ground Restoration	Paving	3/2/2026	3/16/2026	5.00	11.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Site Preparation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40

Grading	Excavators	Diesel	Average	4.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	2.00	8.00	148	0.41
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Off-Highway Trucks	Diesel	Average	4.00	8.00	376	0.38
Grading	Other Construction Equipment	Diesel	Average	2.00	8.00	82.0	0.42
Pipeline/Access Road Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
Pipeline/Access Road Installation	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Pipeline/Access Road Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Pipeline/Access Road Installation	Surfacing Equipment	Diesel	Average	2.00	8.00	399	0.30
Pipeline/Access Road Installation	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50
Reservoir Installation	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48
Reservoir Installation	Cranes	Diesel	Average	1.00	8.00	367	0.29
Reservoir Installation	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Reservoir Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Reservoir Installation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Reservoir Installation	Other Construction Equipment	Diesel	Average	3.00	8.00	82.0	0.42
Paving/Ground Restoration	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Paving/Ground Restoration	Graders	Diesel	Average	2.00	8.00	148	0.41
Paving/Ground Restoration	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving/Ground Restoration	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36

Paving/Ground Restoration	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving/Ground Restoration	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Site Preparation	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Site Preparation	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Site Preparation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Grading	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40
Grading	Excavators	Diesel	Average	4.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	2.00	8.00	148	0.41
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Off-Highway Trucks	Diesel	Average	4.00	8.00	376	0.38
Grading	Other Construction Equipment	Diesel	Average	2.00	8.00	82.0	0.42
Pipeline/Access Road Installation	Plate Compactors	Diesel	Average	2.00	8.00	8.00	0.43
Pipeline/Access Road Installation	Forklifts	Diesel	Average	2.00	8.00	82.0	0.20
Pipeline/Access Road Installation	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Pipeline/Access Road Installation	Surfacing Equipment	Diesel	Average	2.00	8.00	399	0.30
Pipeline/Access Road Installation	Trenchers	Diesel	Average	2.00	8.00	40.0	0.50

Reservoir Installation	Air Compressors	Diesel	Average	2.00	8.00	37.0	0.48
Reservoir Installation	Cranes	Diesel	Average	1.00	8.00	367	0.29
Reservoir Installation	Forklifts	Diesel	Average	1.00	8.00	82.0	0.20
Reservoir Installation	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Reservoir Installation	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38
Reservoir Installation	Other Construction Equipment	Diesel	Average	3.00	8.00	82.0	0.42
Paving/Ground Restoration	Plate Compactors	Diesel	Average	1.00	8.00	8.00	0.43
Paving/Ground Restoration	Graders	Diesel	Average	2.00	8.00	148	0.41
Paving/Ground Restoration	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving/Ground Restoration	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving/Ground Restoration	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Paving/Ground Restoration	Surfacing Equipment	Diesel	Average	1.00	8.00	399	0.30

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—

Grading	Worker	45.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	62.5	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Pipeline/Access Road Installation	—	—	—	—
Pipeline/Access Road Installation	Worker	0.00	11.7	LDA,LDT1,LDT2
Pipeline/Access Road Installation	Vendor	0.00	8.40	HHDT,MHDT
Pipeline/Access Road Installation	Hauling	0.00	20.0	HHDT
Pipeline/Access Road Installation	Onsite truck	—	—	HHDT
Reservoir Installation	—	—	—	—
Reservoir Installation	Worker	0.00	11.7	LDA,LDT1,LDT2
Reservoir Installation	Vendor	0.00	8.40	HHDT,MHDT
Reservoir Installation	Hauling	0.00	20.0	HHDT
Reservoir Installation	Onsite truck	—	—	HHDT
Paving/Ground Restoration	—	—	—	—
Paving/Ground Restoration	Worker	25.0	11.7	LDA,LDT1,LDT2
Paving/Ground Restoration	Vendor	—	8.40	HHDT,MHDT
Paving/Ground Restoration	Hauling	0.00	20.0	HHDT
Paving/Ground Restoration	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	20.0	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	—	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT

Grading	—	—	—	—
Grading	Worker	45.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	62.5	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Pipeline/Access Road Installation	—	—	—	—
Pipeline/Access Road Installation	Worker	0.00	11.7	LDA,LDT1,LDT2
Pipeline/Access Road Installation	Vendor	0.00	8.40	HHDT,MHDT
Pipeline/Access Road Installation	Hauling	0.00	20.0	HHDT
Pipeline/Access Road Installation	Onsite truck	—	—	HHDT
Reservoir Installation	—	—	—	—
Reservoir Installation	Worker	0.00	11.7	LDA,LDT1,LDT2
Reservoir Installation	Vendor	0.00	8.40	HHDT,MHDT
Reservoir Installation	Hauling	0.00	20.0	HHDT
Reservoir Installation	Onsite truck	—	—	HHDT
Paving/Ground Restoration	—	—	—	—
Paving/Ground Restoration	Worker	25.0	11.7	LDA,LDT1,LDT2
Paving/Ground Restoration	Vendor	—	8.40	HHDT,MHDT
Paving/Ground Restoration	Hauling	0.00	20.0	HHDT
Paving/Ground Restoration	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Paving/Ground Restoration	0.00	0.00	0.00	0.00	31,363

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Site Preparation	—	—	34.0	0.00	—
Grading	—	12,000	96.0	0.00	—
Paving/Ground Restoration	0.00	0.00	0.00	0.00	12.0

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	12.0	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.1.2. Mitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	31,363

5.10.3. Landscape Equipment

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

5.10.4. Landscape Equipment - Mitigated

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

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. Mitigated

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

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

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

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	16.6	annual days of extreme heat
Extreme Precipitation	3.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	17.3	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	N/A	N/A	N/A	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	32.1
AQ-PM	18.2
AQ-DPM	54.0
Drinking Water	38.9
Lead Risk Housing	0.79
Pesticides	9.48
Toxic Releases	35.7
Traffic	83.0
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	10.6
Haz Waste Facilities/Generators	50.1
Impaired Water Bodies	33.2
Solid Waste	52.9

Sensitive Population	—
Asthma	26.9
Cardio-vascular	20.3
Low Birth Weights	72.1
Socioeconomic Factor Indicators	—
Education	28.1
Housing	0.39
Linguistic	59.8
Poverty	0.74
Unemployment	33.6

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	99.80751957
Employed	93.82779417
Median HI	99.26857436
Education	—
Bachelor's or higher	98.42166046
High school enrollment	100
Preschool enrollment	74.99037598
Transportation	—
Auto Access	92.6344155
Active commuting	63.09508533
Social	—
2-parent households	97.44642628

Voting	79.76389067
Neighborhood	—
Alcohol availability	97.0101373
Park access	57.11535994
Retail density	10.08597459
Supermarket access	17.34890286
Tree canopy	28.96188887
Housing	—
Homeownership	95.95791095
Housing habitability	99.96150391
Low-inc homeowner severe housing cost burden	97.83138714
Low-inc renter severe housing cost burden	99.08892596
Uncrowded housing	89.4649044
Health Outcomes	—
Insured adults	94.12293084
Arthritis	0.0
Asthma ER Admissions	73.6
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	83.4
Cognitively Disabled	96.3
Physically Disabled	95.1
Heart Attack ER Admissions	58.4

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	17.1
Elderly	83.1
English Speaking	53.0
Foreign-born	86.9
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	29.4
Traffic Density	96.1
Traffic Access	54.8
Other Indices	—
Hardship	5.0
Other Decision Support	—
2016 Voting	78.8

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	21.0
Healthy Places Index Score for Project Location (b)	99.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Land Use	Consistent with the Project Description
Construction: Construction Phases	Per applicant provided construction schedule
Construction: Off-Road Equipment	Per applicant provided construction equipment list. Water trucks and concrete trucks assumed to be "other construction equipment", while hauling trucks assumed to be "off-highway trucks".
Construction: Architectural Coatings	BAAQMD Regulation 8 Rule 3, nonflat coating
Operations: Architectural Coatings	BAAQMD Regulation 8 Rule 3
Operations: Water and Waste Water	WTP 100% aerobic

Appendix B

Biological Resources Assessment



Dublin San Ramon Services District Reservoir 20B Project

Biological Resources Assessment

prepared for

Wood Rodgers, Inc.
Kevin J. Gustorf, P.E.
3301 C Street, Building 100-B
Sacramento, California 95816
Via email: kgustorf@woodrodgers.com

prepared by

Rincon Consultants, Inc.
449 15th Street, Suite 303
Oakland, California 94612

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RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

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Executive Summary

This document provides the findings of a Biological Resources Assessment (BRA) prepared by Rincon Consultants, Inc. for the Dublin San Ramon Services District's (District) proposed Reservoir 20B Project (project) in the City of Dublin in Alameda County, California. The project would involve construction of Reservoir 20B, an underground welded steel reservoir with a storage capacity of approximately 1.3 million gallons. This report documents existing conditions at the project site and provides an assessment of potential impacts to sensitive biological resources based on proposed project plans.

The biological study area for this BRA report includes the project site plus a 50-foot buffer. The study area consists of native and non-native grasslands and barren areas.

Five special-status plant species and six special-status animal species have potential to occur in the study area. Recommended avoidance and minimization measures are identified to reduce potential impacts related to these species to a less-than-significant level.

No sensitive natural communities, jurisdictional waters, or essential wildlife corridors or habitat linkages occur within the study area.

1 Introduction

1.1 Project Location

The project site is located near the eastern border of the City of Dublin in Alameda County, California (Figure 1). The project site is located along the northern boundary of Assessor's Parcel Number (APN) 905-0002-002-00 and within the proposed East Ranch Development site, which is a planned residential development located on the west and east sides of Croak Road, south of South Terracina Drive; as well as a small portion of APN 985-0086-015-00. The regional project location is shown in Figure 1. The project site boundary is located at 37.716301°W latitude and -121.834733°N longitude, within the *Livermore*, *California* 7.5-minute United States Geological Survey (USGS) quadrangle (Figure 2). The study area for this project is defined as the project site boundary plus a 50-foot buffer around the site. The study area also overlaps with the adjacent East Ranch Development Project, which is currently under construction.

1.2 Project Description

The project would involve construction of Reservoir 20B, an underground welded steel reservoir with a storage capacity of approximately 1.3 million gallons. The reservoir would have an outside diameter of approximately 102 feet and an area of approximately 17,500 square feet. The reservoir would be located at the top of a hill within the parcel. At this location, the reservoir would have a similar elevation to that of existing Reservoir 20A (670 feet above mean sea level) so that pressures throughout the District's system remain consistent. The water tank would be located on a 0.4-acre concrete pad approximately 350 feet south of South Terracina Drive and approximately 0.25 mile east of Croak Road.

The project would also involve construction of a service road with a width of 20 feet to access the proposed reservoir. The District has not yet determined the location of this access road; therefore, the analysis considers both potential design options. As shown in Figure 2, the Northern Roadway Design Option would locate the access road north of the proposed reservoir, which would connect to an existing access road south of existing residences along South Terracina Drive. The Western Roadway Design Option would locate the access road west of the proposed reservoir. The access road would have switchbacks as it travels downgrade and would connect to a planned access road that would be developed as part of the separate East Ranch Development located south and west of the reservoir.

The project also includes an approximately 425-linear foot storm drain pipeline that would connect to a planned storm drain inlet of the East Ranch Development located south of the proposed storage tank. An approximately 1,000-linear foot water main, including a check valve vault, would be constructed between the proposed storage tank and proposed water main of the East Ranch Development located southeast of the proposed tank.

The hilltop where the reservoir would be located would be graded to create a level site and facilitate access to the reservoir. Grading associated with the Northern Roadway Design Option would require approximately 53,200 cubic yards of soil to be cut and approximately 26,500 cubic yards of soil for backfill, with a net soil export of 26,700 cubic yards. Grading associated with the Western Roadway Design Option would require approximately 39,500 cubic yards of soil to be cut and approximately 33,200 cubic yards of soil for backfill, with a net soil export of 6,300 cubic yards.

Figure 1 Regional Location Map

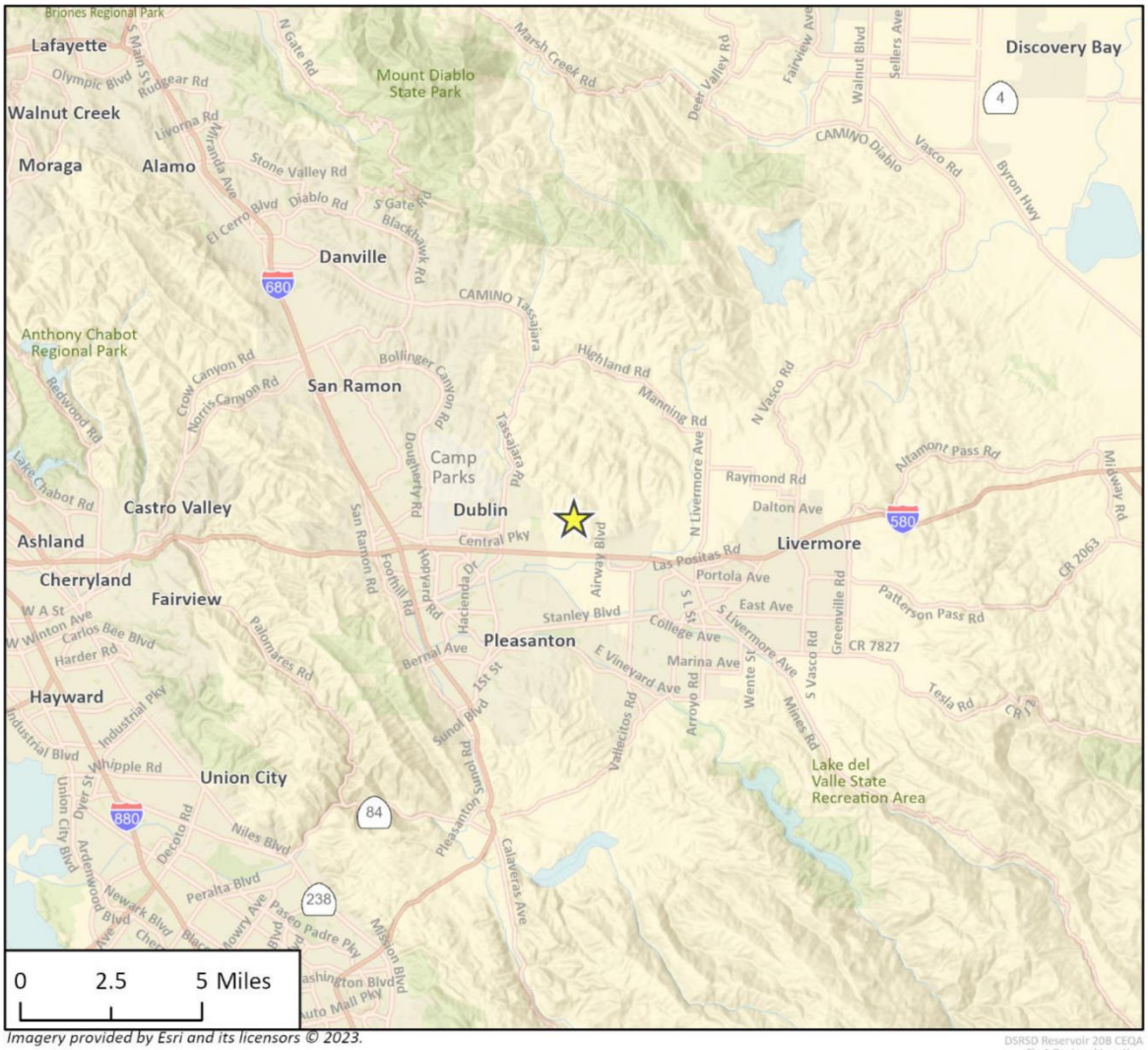
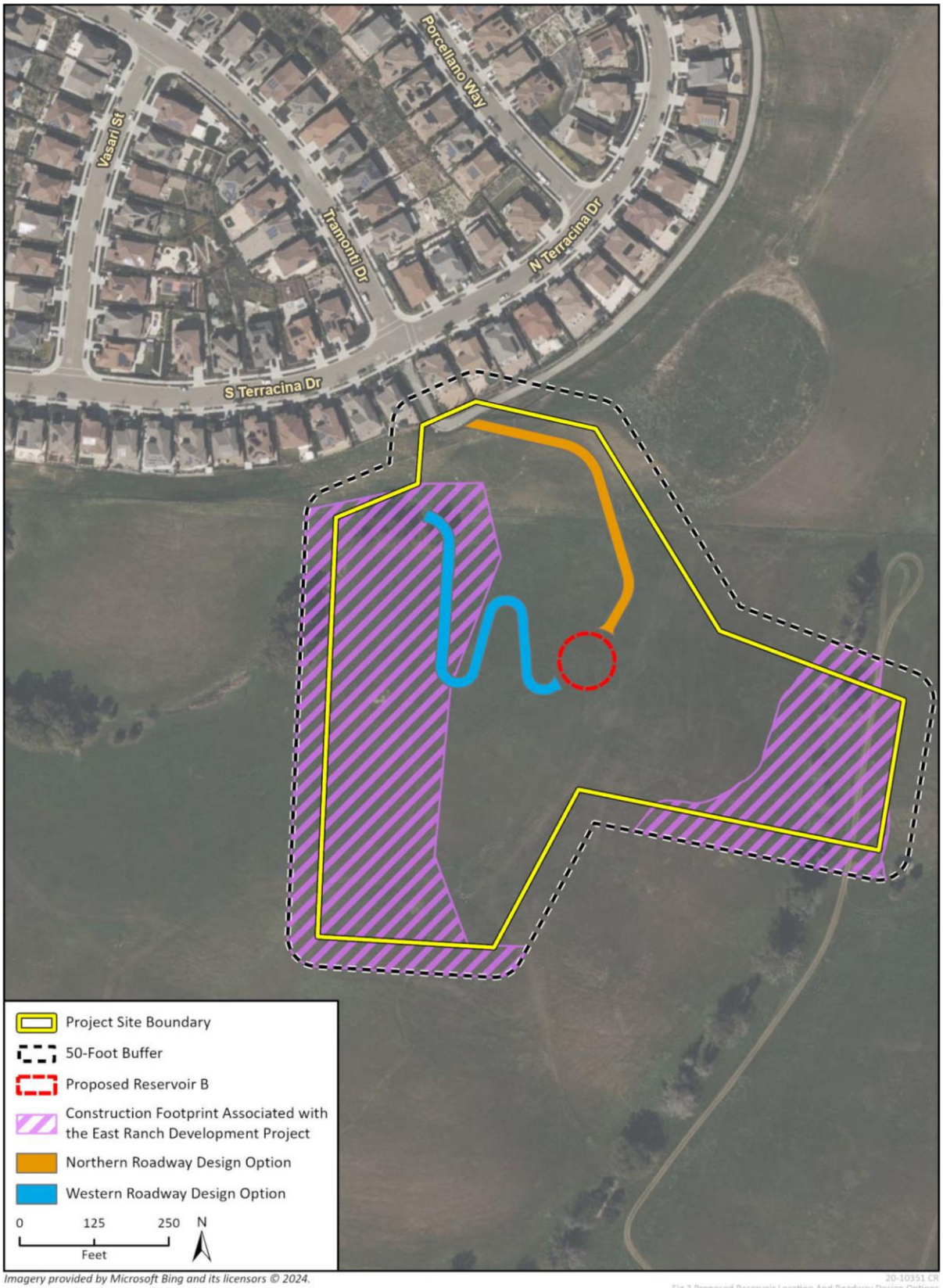


Figure 2 Project Location Map



2 Methodology

2.1 Regulatory Overview

Regulated or sensitive resources studied and analyzed herein include special-status plant and animal species, nesting birds, sensitive plant communities, jurisdictional waters and wetlands, wildlife movement, and locally protected resources, such as protected trees. Regulatory authority over biological resources is shared by federal, State, and local authorities. Primary authority for regulation of general biological resources lies within the land use control and planning authority of local jurisdictions (in this instance, the City of Dublin).

2.1.1 Definition of Special-Status Species

For the purposes of this report, special-status species include:

- Species listed as candidate, threatened, or endangered under the federal Endangered Species Act (FESA). Species that are under review may be included if there is a reasonable expectation of listing within the life of the project;
- Species listed as candidate, threatened, or endangered under the California Endangered Species Act (CESA);
- Species designated as fully protected, species of special concern, or watch list by the California Department of Fish and Wildlife (CDFW); and
- Species designated as locally important by the City of Dublin and/or otherwise protected through local ordinance or policy.

2.1.2 Environmental Statutes

For the purpose of this report, potential impacts to biological resources were analyzed based on the following statutes (Appendix A):

- CEQA
- FESA
- CESA
- Federal Clean Water Act (CWA)
- California Fish and Game Code (CFGC)
- Migratory Bird Treaty Act (MBTA)
- The Bald and Golden Eagle Protection Act
- Porter-Cologne Water Quality Control Act
- City of Dublin General Plan and Municipal Code

2.1.3 Criteria for Determining CEQA Significance

The following significance criteria, as defined by the *CEQA Guidelines Appendix G Initial Study Checklist*, were used to guide the evaluation of potential environmental effects. Based on these criteria, the proposed project would have a significant effect on biological resources if it would:

a) Have substantial adverse effects, 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, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service.

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

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

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

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

2.2 Literature Review

Rincon reviewed relevant agency databases and literature for baseline information on biological resources potentially occurring within the *Livermore*, *California* USGS quadrangle and the eight surrounding USGS quadrangles (*Byron Hot Springs, Mendenhall Springs, Altamont, Dublin, Tassajara, Diablo, La Costa Valley, and Niles, California*). The review included information available in peer-reviewed journals, standard reference materials (e.g., Nafis 2022 and Sawyer et al. 2009), and agency and public databases containing occurrences for special-status biological resources, including the California Natural Diversity Database (CNDDB; CDFW 2023a), the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (2023), eBird (Cornell Lab of Ornithology 2023a), the Biogeographic Information and Observation System (BIOS; CDFW 2023b), and the U.S. Fish and Wildlife Service (USFWS) Information for Consultation and Planning (IPaC) site (USFWS 2023a). The USFWS Critical Habitat Portal (USFWS 2023b), the USFWS National Wetlands Inventory (NWI; USFWS 2023c), the CDFW Special Animals List (CDFW 2023d), the CDFW Special Vascular Plants, Bryophytes, and Lichens List (CDFW 2023e), and the CDFW Wildlife Habitat Relationship System (Zeiner et al. 1988-1990) were also reviewed for information regarding special-status species with potential to occur in the vicinity of the project sites. Additionally, Rincon reviewed aerial photographs, topographic maps, soil survey maps, geologic maps, and climatic data for the project site and regional vicinity.

2.3 Field Reconnaissance Survey

A biological resource reconnaissance-level site survey was conducted to assess the habitat suitability for special-status species with potential to occur, map vegetation communities and landcover types, document and map the presence of any sensitive biological resources, identify potential jurisdictional waters or wetlands, document any wildlife connectivity features, and record all observations of plant and wildlife species within the study area. Rincon biologists, Caleb Yakel and Bayley Elenzweig, conducted the site visit on November 30, 2023, between the hours of 0830 and 1230. The weather consisted of sunny, clear skies with a temperature of 66 degrees Fahrenheit (°F)

and winds of 0 to 5 miles per hour. The survey consisted of walking the extent of the study area and documenting all biological resources observed throughout. A Juniper Systems Geode™ GPS unit was used to accurately map resources. Site photographs taken during the survey are included in Appendix B. A list of all plant and wildlife species observed is included in Appendix C.

3 Existing Conditions

3.1 Physical Characteristics

3.1.1 Topography and Geography

The study area is located in the City of Dublin, approximately 20 miles east of the San Francisco Bay. The climate in this region is mild and temperate, and most of the rainfall occurs during the winter months. The average annual high temperature is 89.0 °F and the average annual low temperature is 36.7 °F. The average annual precipitation is 14.18 inches (Western Regional Climate Center 2023). The study area consists of native and non-native annual grasslands. Elevations within the study area range from 585-705 feet above mean sea level. Single-family residential land use occurs to the north and west of the project site, and undeveloped open space areas are to the east and south. A wildlife exclusion fence has been installed as part of ongoing construction near the northern boundary of the project site and runs east to west (Appendix B; Photographs 1, 2, and 5).

3.1.2 Watershed and Drainages

The study area is within the Lower Arroyo Mocho Watershed (Hydrologic Unit Code [HUC]: 180500040302; United States Environmental Protection Agency [USEPA] 2023a). The NWI maps a freshwater emergent wetland (Palustrine [P], Emergent [EM], Persistent [1], and Temporarily Flooded [A]) within the study area and approximately 330 feet south of the study area. The freshwater wetland within the study area is located in the portion associated with the East Ranch Development, which has been graded. At the time of the site visit, no discernable aquatic feature was present in this location. The wetland south of the study area remains. Cottonwood Creek (Riverine [R], Intermittent [4], Streambed [SB], and Temporarily Flooded) is located approximately 0.56 miles east of the project boundary and freshwater emergent wetland (PEM1A) is located approximately 0.3 miles west of study area.

3.1.3 Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (USDA NRCS) Web Soil Survey depicts two soil map units in the study area: Linne clay loam, 15 to 30 percent slopes and Linne clay loam, 30 to 45 percent slopes (USDA NRCS 2023a). The Linne series consists of moderately deep, well-drained soils that formed in material weathered from sandstone and shale and are typically found in mountain slopes and hillslopes. The Linne clay loam, 15 to 30 percent slopes and Linne clay loam, 30 to 45 percent slopes soil map units are not included on the National Hydric Soils List (USDA NRCS 2023b). The Linne clay loam, 15 to 30 percent slopes can be found on the western side of the of the study area and the Linne clay loam, 30 to 45 percent slopes is associated with the east side of the study area.

3.1.4 Vegetation and Other Land Cover

Vegetation community characterizations for this analysis were based on the classification systems presented in *A Manual of California Vegetation, Second Edition* (MCV2; Sawyer et al. 2009). Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986) is still used for reference and historical perspective, though its classifications are no longer supported by

the State of California and have been superseded by the MCV2. Plant species nomenclature and taxonomy used for this BRA follow the treatments within the second edition of *The Jepson Manual* (Baldwin et al. 2012).

Three vegetation communities and two land cover types were identified within the study area during the field reconnaissance survey (Table 1 and Figure 3). Descriptions of the habitat and land cover types within the study area are provided below. Appendix C provides a full list of plant species observed during the field reconnaissance survey.

Table 1 Habitat and Land Cover Types in the Study

Land Cover/MCV Vegetation Alliance (Common Name)	MCV Vegetation Alliance (Scientific Name)[1]	Sensitive?
Upland mustards or star-thistle fields	*Brassica nigra* - *Centaurea (solstitialis, melitensis*) Herbaceous Semi-Natural Alliance	No
Wild oats and annual brome grasslands	*Avena* spp. - *Bromus* spp. Herbaceous Semi-Natural Alliance	No
Ashy ryegrass - creeping wildrye turfs	*Leymus cinereus* - *Leymus triticoides* Herbaceous Alliance	Yes (S3)
Barren/graded	N/A	N/A
Developed	N/A	N/A

Upland Mustards or Star-Thistle Fields

Upland mustards or star-thistle fields comprise the majority of the study area's vegetative cover and often occur in active agricultural and fallow land. The alliance is characterized by a dominance of black mustard (*Brassica nigra)*, field mustard *(Brassica rapa)*, Italian thistle (*Carduus pycnocephalus)*, Maltese star-thistle (*Centaurea melitensis)*, yellow star-thistle (*Centaurea solstitialis)*, cardoon (*Cynara cardunculus)*, carnation spurge (*Euphorbia terracina)*, shortpod mustard (*Hirschfeldia incana)*, dyer's woad (*Isatis tinctoria)* or wild radish (*Raphanus sativus)* or similar ruderal forb in the herbaceous layer (CNPS 2023). In the study area, black mustard and yellow star-thistle are the dominant ruderals in areas with this land cover. Other non-natives present include wild oats (*Avena fatua*), slender oats (*Avena barbata*), fennel (*Foeniculum vulgare)*, field bindweed (*Convulvus arvensis*), foxtail (*Hordeum murinum*), and pennyroyal (*Mentha pulegium*) in the north-east depressional/ drainage area. Natives observed during the reconnaissance survey include doveweed *(Croton setigerus*), lupines (*Lupinus* spp.), willowherb (*Epilobium* sp.), and narrowleaf milkweed (*Asclepias fascicularis*).

Wild Oats and Annual Brome Grasslands

Wild oats and annual brome grasslands are located in the northeast portion of the study area. The alliance is characterized by dominance or co-dominance of wild oats, slender oats, stiff brome (*Brachypodium distachyon*), greater quaking grass (*Briza maxima*), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), and/or foxtail with other non-natives in the herbaceous layer. In the study area, this land cover is mostly comprised of wild and slender oats with soft brome, fennel, field bindweed, and foxtail. Natives observed during the reconnaissance survey include doveweed *(Croton setigerus*), lupines, and willowherb.

Figure 3 Vegetation and Landcovers



Creeping Wildrye Turfs

Creeping wildrye turfs are a native vegetative community that typically occur in drained floodplains, playas, drainage and valley bottoms, and marsh margins characterized by mesic flat to sloping topography and often alkaline or saline clays and loams. Creeping wildrye turfs in the study area are located mostly in depressional areas with hydric soils in the east boundaries of the study area that have not been graded. These communities are fragmented by construction. Creeping wildrye turfs are characterized by a dominance or co-dominance of basin wild rye (*Leymus cinereus*) and/or creeping wild rye (*Leymus triticoides*) with western ragweed (*Ambrosia psilostachya*), yerba mansa (*Anemopsis californica*), purple three-awn (*Aristida purpurea*), wild oat, *Bromus spp.*, one-spike oatgrass (*Danthonia unispicata)*, saltgrass (*Distichlis spicata)*, squirreltail (*Elymus elymoides)*, *Hordeum spp.*, arctic rush (*Juncus arcticus)*, perennial ryegrass (*Lolium perenne)*, one-sided blue grass (*Poa secunda*) or seaside arrowgrass (*Triglochin maritima)* in the herbaceous layer. Creeping wild rye is recognized as a facultative (FAC) plant and can be found in wetlands and in uplands. Creeping wildrye turfs are a sensitive natural community (S3) but are located outside the project boundary.

Graded/Barren

Portions of the study area have been recently graded. This land is currently barren with no vegetative cover. This includes exempt areas where construction is already underway …

Developed

This land cover type includes paved roads and residential development at the north edge of the study area.

3.2 General Wildlife

Wildlife observed within the study area included several different bird and mammal species commonly found in undeveloped open areas. Eurasian collared dove (*Streptopelia decaocto*), turkey vulture (*Cathartes aura*), and American crow (*Corvus brachyrhynchos*) were observed flying overhead. A single California scrub-jay (*Aphelocoma californica*) and Say's Phoebe (*Sayornis saya*) were observed perched on barbed wire fence and on the ground foraging within the northern undisturbed portion of the study area. A single American kestrel (*Falco sparverius*) was also observed foraging along the northern portion of the study area. One individual red-tailed hawk (*Buteo jamaicensis*) was seen perched on a eucalyptus tree, located within the north-eastern portion of the study area, and later observed soaring overhead just northeast of the study area boundary. Wild turkey (*Meleagris gallopavo*) were seen foraging within the northern undisturbed portion of the study area. A single coyote (*Canis latrans*) and a small group of black-tailed deer (*Odocoileus hemionus columbianus*) were observed moving through the northeastern undisturbed portion of the study area. Small (4-inches diameter and below) to moderately (4 inches diameter and above) sized burrows were observed throughout the undisturbed regions of the study area. A complete list of wildlife species observed during the field reconnaissance survey is provided in Appendix C.

4 Sensitive Biological Resources

This section discusses special-status species and sensitive biological resources observed within the study area and evaluates the potential for the project site to support additional sensitive biological resources. Assessments for the potential occurrence of special-status species are based upon known ranges, habitat preferences for the species, species occurrence records from the CNDDB and other sources, species occurrence records from other sites in the vicinity of the survey area, previous reports for the project site, and the results of surveys of the project site. The potential for each special-status species to occur in the study area was evaluated according to the following criteria:

- **No Potential.** Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime), and species would have been identifiable on the site if present (e.g., oak trees). Protocol surveys (if conducted) did not detect species.
- **Low Potential.** Few of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site. Protocol surveys (if conducted) did not detect species.
- **Moderate Potential**. Some of the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- **High Potential**. All the habitat components (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime) meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- **Present.** Species is observed on the site or has been recorded (e.g., CNDDB, other reports) on the site recently (within the last 5 years).

4.1 Special-status Species

4.1.1 Special-status Plant Species

Rincon evaluated 43 special-status plant species for their potential to occur within the study area (Appendix D). Thirty (30) of these species have documented occurrences within 5 miles of the study area (CDFW 2023a; CNPS 2023). Thirty-seven (37) special-status plant species are not expected or have no potential to occur within the project site due to the absence of suitable habitats (i.e., cismontane woodland, chaparral, vernal pools), the lack of suitable soils (i.e. serpentine, rocky) and prevalence of non-native grasslands in most of the study area. No special-status plant species were observed during the field reconnaissance survey in November 2023. Six special-status plant species have low potential to occur within the study area due to limited habitat within the study area and recent disturbance (Table 2).

Table 2 Special-Status Plant Species with Potential to Occur within the Study Area

Scientific Name	Common Name	Status	Potential to Occur
Atriplex depressa	Brittlescale	1B.2	Low Potential
Centromadia parryi ssp. congdoni	Congdon's tarplant	1B.1	Low Potential
Eschscholzia rhombipetala	diamond-petaled California poppy	1B.1	Low Potential
Extriplex joaquinana	San Joaquin spearscale	1B.2	Low Potential
Navarretia prostrata	prostrate vernal pool navarretia	1B.2	Low Potential
Trifolium hydrophilum	Saline clover	1B.2	Low Potential

1B.1 - Plants presumed extirpated in California and either rare or extinct elsewhere

1B.2 - Plants rare, threatened, or endangered in California and elsewhere

Brittlescale

Brittlescale is an annual herb in the goosefoot family (Chenopodiaceae) found in alkali clay chenopod scrub, meadows and seeps, playas, valley and foothill grassland, and vernal pools from 5 to 1,050 feet. Known associated species include *Calystegia* species and exotic oats and bromes.

There is suitable habitat for brittlescale in the alkaline clay grasslands present in the study area, and especially around recently-graded drainage area in the east portion of the study area. Due to ground disturbance in the vicinity of suitable habitat in the study area, there is a low potential for this species to occur (CDFW 2023a).

Congdon's Tarplant

Congdon's tarplant is an annual herb in the sunflower family (Asteraceae), that is severely threatened by development. This species typically occurs in alkaline soils in valley and foothill grasslands from 0 to 755 feet. Known associated species in the nearby area include field bindweed, Italian ryegrass, and non-native ruderal herbs.

Potentially suitable habitat is located in the drainage areas and slopes in the eastern and northern portions of the study area, where soils are alkaline. Nearby occurrences have been documented in similar conditions, including a very large population of over 100,000 plants located 0.5 mile southwest of the study area (CDFW 2023a). Due to limited habitat and recent disturbance in the study area, this species has a low potential to occur.

Diamond-petaled California Poppy

Diamond-petaled California poppy is a small (2-inch tall) annual herb in the poppy family (Papaveraceae) thought to be locally extirpated in Alameda County until 1997. It can be found in grazed and historically grazed lands. There is a small window of survey opportunity due to its short blooming period, thus it is thought that many possible populations of this species have been overlooked in eastern Alameda County.

Historically grazed lands on site provide suitable habitat for this species. Historic recorded occurrences begin just outside the 5-mile radius, north, south, and east of the study area, including one south and one eastern population recently discovered. The study area is in the identified range of this species (CNDDB 2023). Growth of non-native grasses and ruderal herbs can overcrowd

suitable habitat for the species. Given the dense growth of non-native grasses and ruderal plant species in the study area, there is a low potential for the diamond-petaled California poppy to occur.

San Joaquin Spearscale

San Joaquin spearscale is an annual herb in the goosefoot family (Chenopodiaceae) found in alkali sink scrub and wetlands, alkali meadow, and valley and foothill grasslands from 0 to 2,740 feet. Known associated species include salt grass, bird's foot trefoil, Italian ryegrass, and docks.

San Joaquin spearscale has potential to occur in suitable alkaline habitat in the study area, especially near recently-graded drainage area. Twelve (12) occurrences of this species have been recorded in the 5-mile radius of the study area, including seven occurrences within 1 mile (CDFW 2023a). Due to the recent disturbance and limited habitat in the study area, there is a low potential for this species to occur.

Prostrate Vernal Pool Navarretia

Prostrate vernal pool navarretia is an annual herb in the phlox family (Polemoniaceae) found in mesic and alkaline meadows, seeps and vernal pools within coastal scrub, and valley and foothill grassland habitat from 10 to 3,970 feet. Known associated species include brome grasses (*Bromus ssp.*), saltbushes, oats (*Avena ssp*.), and vernal pool species such as flatface calicoflower (*Downingia pulchella*; CDFW 2023a).

Although there are no vernal pools present within the study area, prostrate vernal pool navarretia has a low potential to occur due to limited presence of suitable alkaline habitat and recent development. Additionally, this species has a reported occurrence on previously grazed land 0.5 mile southwest of the study area (CDFW 2023a).

Saline Clover

Saline clover is an annual herb in the pea family (Fabaceae) found in alkaline soils in marshes and swamps, valley and foothill grassland, and vernal pools from 0 to 985 feet. Known associated species include *Atriplex* species, Congdon's tarplant, and exotic grasses.

Although there are no vernal pools present within the study area, saline clover has low potential to occur due to presence of suitable alkaline soils by drainage areas in the east and north portions of the study area. Several desiccated individual trifolium were observed by Rincon during the reconnaissance survey, but were not identifiable at the time of the site visit (CDFW 2023a).

4.1.2 Special-status Wildlife Species

Rincon evaluated 49 special-status species for their potential to occur within the study area (Appendix D). Of these, 15 species were found to have the potential to occur within the study area, including three federally-listed species. The remaining 34 special-status wildlife species that were evaluated are not expected to occur in the study area or immediate vicinity based on known distributions, habitat requirements, and existing site conditions. For the purposes of this analysis, special-status species with at least a moderate potential to occur will be addressed further below. Table 3 provides a summary of these species.

Table 3 Special-Status Wildlife Species with Potential to Occur within the Study Area

Common Name	Scientific Name	Status	Potential to Occur
California red-legged frog	*Rana draytonii*	FT/SSC	Moderate Potential (non-breeding)
California tiger salamander	*Ambystoma californiense*	FT/ST	Moderate Potential (non-breeding)
San Joaquin kit fox	*Vulpes macrotis mutica*	FE/ST	Low Potential (non-breeding)
Burrowing owl	*Athene cunicularia*	SSC	Low Potential
Loggerhead shrike	*Lanius ludovicianus*	SSC	Moderate Potential
American badger	*Taxidea taxus*	SSC	Low Potential

FE = Federally Endangered; FT = Federally Threatened; ST = State Threatened; SSC = California Department of Fish and Wildlife Species of Special Concern

California Red-legged Frog

The California red-legged frog (CRLF) is a federally threatened species that occurs in lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. It typically inhabits quiet pools of streams, marshes, and ponds. All life history stages are most likely to be encountered in and around breeding sites, which include coastal lagoons, marshes, springs, permanent and semi-permanent natural ponds, and ponded and backwater portions of streams, as well as artificial impoundments such as stock ponds, irrigation ponds, and siltation ponds. Eggs are typically deposited in permanent pools, attached to emergent vegetation. This species typically requires 11 to 20 weeks of permanent water for larval development and must have access to estivation habitat. Suitable upland habitat must provide sufficient moisture to prevent desiccation and sufficient cover to provide protection from predators. Typical upland habitat consists of densely vegetated areas, downed woody vegetation, leaf litter, small mammal burrows, and human-made structures (i.e., culverts, livestock troughs, spring-boxes, abandoned sheds; USFWS 2002). CRLF can disperse from 200 feet to over 2 miles from aquatic habitat, “without apparent regard for topography, vegetation type or riparian corridors” (USFWS 2010). Average dispersal or migration rates of CRLF depend on site conditions.

The entirety of the study area falls within critical habitat for the species and 40 occurrences have been recorded within a 5-mile radius of the study area in CNDDB (IPAC 2023; CDFW 2023a). The most recent occurrence, 2020, was recorded approximately 0.5-mile west of the study area within a drainage swale. Suitable breeding habitat is not present within the study area. However, numerous burrows with entrance diameters of 4 inches and below were observed throughout the non-disturbed portions of the study area and may provide suitable upland refugia habitat for the species. Potential breeding habitat exists in the form of a drainage swale, approximately 0.25-mile west of the study area, and Cottonwood Creek, an intermittent stream, is located approximately 0.6-mile east of the study area. Given that the study area is located between these two aquatic resources, there is a moderate potential for this species to occur within the study area.

California Tiger Salamander

The California tiger salamander (CTS) is a federally and state threatened species found primarily in grasslands, low foothills, and oak woodland habitats located within approximately 0.42 mile (671 meters) of breeding pools (Trenham and Shaffer 2005). CTS breeds in long-lasting rain pools (e.g., seasonal ponds, vernal pools, slow-moving streams) that are often turbid, and occasionally in permanent ponds lacking fish predators. Adults spend 90 percent of their lives underground. Breeding habitat includes wetland and open water habitats. During the non-breeding season, adults

occur in upland habitats and occupy small mammal burrows and other subterranean cover, such as root hollows. CTS migrates nocturnally to aquatic sites to breed during relatively warm winter or spring rains. Juveniles emigrate at night from the drying pools to upland refuge sites, such as rodent burrows and cracks in the soil.

There are 54 recorded occurrences of CTS within a 5-mile radius of the study area, with the most recent in 2019 (CDFW 2023a). Suitable breeding habitat is not present within the study area. However, numerous burrows with entrance diameters of 4 inches and below were observed throughout the non-disturbed portions of the study area and may provide suitable upland habitat for the species. Potential breeding habitat exists in the form of a drainage swale, approximately 0.25 mile west of the study area, and Cottonwood Creek, is located approximately 0.6-mile east of the study area. Given that the study area is located between these two aquatic resources, there is a moderate potential for this species to occur within the study area.

San Joaquin Kit Fox

The San Joaquin kit fox (SJKF) is a federally endangered and state threatened species. SJKF is endemic to California west of the Sierra Nevada Mountains. This species occurs in the Central Valley generally from the Sacramento area south to the southern end of the San Joaquin Valley, in the Carrizo Plain, the Panoche Valley, and from northern San Luis Obispo County north through the Salinas Valley. Individuals are about the size of a house cat, weighing 4-7 pounds and are approximately 30 inches in length. Diet consists primarily of kangaroo rats (*Dipodomys* sp.) and other small mammals, occasionally including black-tailed jackrabbits, desert cottontails, and ground squirrels (*Otospermophilus* sp.) The SJKF will also eat insects, reptiles, small birds, bird eggs, and vegetation. Predators include coyotes, large raptors, bobcat, red fox, and feral dogs. SJKF are most commonly found in gently sloping to relatively flat terrain vegetated with grasslands or grassy open stages with scattered shrubby vegetation. They may occur on a limited basis in areas under less intense agricultural production, such as dry-land grain farming and orchards, and they are known to occur in urban areas (CSU Stanislaus 2021). The species requires loose-textured sandy soils for burrowing, and breeding can occur from December to March. Pups are born within dens after a 48- to 52-day gestation period (USEPA 2021b).

One known occurrence of SJKF has been documented within 5 miles of the study area in CNDDB (CDFW 2023a). Several burrows with entrance diameters over 4 inches were observed within the northern portion of the study area. These burrows were located just north of an orange construction/exclusion fence that ran through the study area running east to west. Smaller burrows were also observed throughout the open grassland habitat within the study area and may provide foraging opportunities. However, due to the study area being adjacent to housing development, and active construction ongoing around the project site, the habitat is likely unsuitable. There is a low potential for SJKF to pass through the area during dispersal and foraging activity.

Burrowing Owl

Burrowing owl is a CDFW Species of Special Concern (SSC) that occupies open, treeless areas within grassland, low density scrub, and desert biomes. This species generally inhabits gently sloping areas, characterized by low, sparse vegetation, and is often associated with high densities of burrowing mammals (Poulin et al. 2011). Burrowing owls often use relatively disturbed areas such as agricultural fields, golf courses, cemeteries, and vacant urban lots in addition to natural breeding habitats. Nests are most often in fossorial animal burrows, such as California ground squirrel or

American badger, but atypical nests such as culverts or rubble piles may also be used. Nest sites are typically selected in an area with a high density of burrows.

There are 29 recorded occurrences of burrowing owl within a 5-mile radius of the study area in CNDDB, with the most recent in 2020 (CDFW 2023a). This species has also been observed nesting near the study area in past studies (Haag 2005). However, these areas have largely been developed or graded, especially to the west and south. The grassland habitat in the study area and numerous ground squirrel burrows throughout the study area provide suitable habitat for this species. There is a low potential for this species to occur within the study area.

Loggerhead Shrike

Loggerhead shrike is a CDFW SSC that inhabits open county with short vegetation and well-spaced shrubs or low trees, particularly those with spines or thorns. The species can be found in agricultural fields, pastures, old orchards, riparian areas, desert scrublands, savannas, and prairies, and is frequently seen along mowed roadsides with access to fence lines and utility poles (Cornell Lab or Ornithology 2023). Diet includes insects and other arthropods, amphibians, reptiles, small mammals and birds. Loggerhead shrikes often build their nests in thorny vegetation, including in brush piles or tumbleweeds. Eggs are laid from March to May in California, and young become independent in July or August.

Although there are no recorded occurrences of the species within 5 miles of the study area in CNDDB (CDFW 2023a), there have been multiple recorded sightings in iNaturalist and eBird databases throughout the general area (iNaturalist 2023; Cornell Lab of Ornithology 2023a). The open grassland habitat and the presence of suitable perching resources, such as barbed wire fence, provide suitable foraging habitat. There is a moderate potential for this species to pass through the study area for foraging opportunities.

American Badger

American badger is a CDFW SSC that is found in dry, open habitats including grassland and open woodland. It is a highly specialized, semi-fossorial mustelid (Quinn 2008). Suitable burrowing habitat requires dry, sandy soil. The species is most abundant in drier open stages of most shrub, forest, and herbaceous habitats with suitable soils to support burrows (Zeiner et al. 1990). Breeding occurs in summer and early fall, with young being born from March to April.

There are five recorded occurrences of the species within a 5-mile radius in CNDDB, with the most recent in 2004 (CDFW 2023a). Grassland and friable soils, suitable for excavating dens, are present throughout the study area. Several burrows with entrance diameters over 4 inches were observed throughout the northern portion of the study area. These burrows were located just north of an orange construction/exclusion fence that ran through the study area running east to west. Smaller ground squirrel burrows were also observed throughout the study area and may provide foraging opportunities. This species is sensitive to disturbance and thus has low potential to occur within the study area.

4.1.3 Other Protected Species

Nesting Birds

Non-game migratory birds protected under the MBTA and CFGC have the potential to breed and forage within the study area. Suitable nesting habitat within the study area could include human-

made structures and the ground surface. Shrubs, trees, and power poles within 500 feet of the project site could provide suitable nesting habitat for raptors and other birds.

4.2 Sensitive Natural Communities and Critical Habitat

The study area is located in Critical Habitat Subunit CCS-2A for California red-legged frog. Forty (40) occurrences have been recorded within a 5-mile radius of the study area in CNDDB (CDFW 2023a). While suitable breeding habitat is not present in the study area, there are appropriate conditions for upland dispersal and habitat. Rincon observed a dense cover of burrows in the non-disturbed portions of the study area, many of which had entrance diameters of 4 inches and below. Potential breeding habitat is present 0.25 mile west and 0.6 mile east of the study area.

Creeping wild rye turfs found in the study area are considered vulnerable statewide (S3). Rincon observed creeping wild rye turfs in eastern portions of the study area along drainages from the north and east, largely fragmented by recent disturbance. However, creeping wild rye turfs do not occur within the project boundary.

4.3 Jurisdictional Waters and Wetlands

The freshwater emergent wetland surrounding the drainage that is mapped in the NWI on the eastern side of the study area (USFWS 2023c) has been previously graded. Small portions of the drainage are still present outside of the study area, including freshwater emergent wetlands approximately 330 feet south of the study area.

4.4 Wildlife Movement

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network. The California Essential Habitat Connectivity Project commissioned by the California Department of Transportation (Caltrans) and CDFW; identifies “Natural Landscape Blocks” which support native biodiversity and the “Essential Connectivity Areas” which link them (Spencer et al. 2010).

While the study area does not fall within areas mapped by the CDFW BIOS Database as a Natural Landscape Block or an Essential Connectivity Area, on a smaller scale, drainages in the eastern study area and the creek offsite to the west are likely used as wildlife movement corridors to connect to undeveloped lands north, east, south, and west of the study area. While lands west of the study area have recently been developed, intact open corridors for wildlife border creeks and drainages that connect through the study area to ideal habitat. Additionally, the study area has potential upland habitat for both CRLF and CTS, with aquatic breeding habitat for these species located off site 0.25 mile to the west and 0.6 mile to the east. Therefore, while the study area is not mapped on a larger scale as a wildlife corridor, due to its location between these two potential breeding areas, it may function as a habitat area or connection for local amphibians. Recent disturbance east, west, and south of the project site has likely reduced suitable habitat in the study area.

There are no breeding locations for amphibians, or associated ponds that may be used as nursery sites for such species in the study area. Burrowing owls and American badgers using the area for nesting and denning, respectively, may also utilize the study area to connect to larger habitat after breeding and rearing. Migratory and other special-status birds have been observed using the study area for foraging.

4.5 Resources Protected by Local Policies and Ordinances

No resources protected by the City of Dublin policies and ordinances are present within the study area.

4.6 Habitat Conservation Plans

The study area does not fall within the boundaries of any Habitat Conservation Plan, Natural Conservation Community Plan or other approved local, regional, or state Habitat Conservation Plan.

5 Impact Analysis and Avoidance and Minimization Measures

This section discusses the potential impacts and effects to special-status species and sensitive biological resources that may occur from implementation of the project and provides recommended avoidance and minimization measures that would reduce those impacts where applicable. The analysis and recommendations are based on the CEQA Guidelines Appendix G Initial Study Checklist.

5.1 Special-Status Species

The proposed project would have a significant effect on biological resources if it would:

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.*

5.1.1 Special-status Plant Species

Six special-status plant species have a low potential to occur within the study area. Therefore, no significant impacts to special-status plant species are expected. While all of these plants occur on CRPR Lists 1 and 2, none are protected under FESA or CESA. Furthermore, even if these plant species were to occur within the study area, the small size of the study area would not be likely to contain a large number of the individual plant species that would have a significant impact on the population of any of the six plant species. Thus, the project is expected to have no effect on any protected plant species.

5.1.2 Special-status Wildlife Species

Six special-status wildlife species have the potential to occur within the study area. Impacts to these species are potentially significant. Three of these species have moderate potential and the other three have low potential to occur in the study area. SJKF has low potential to occur but is protected under FESA and CESA. Recommended avoidance and mitigation measures for reducing potential effects to a less-than-significant level are provided.

California Red-legged Frog

Suitable upland habitat for CRLF is present throughout the study area, given potential suitable breeding habitat can be found 0.33 mile west and 0.56 mile east of the study area. Additionally, due to the fact that the study area falls within critical habitat for the species, CRLF has a moderate potential to occur within the study area. The species is unlikely to be directly impacted by project activity unless individuals are dispersing through the study area during or after a rainfall event. Impacts to dispersing individuals would be significant if CRLF were present in the work area during construction and could include injury or mortality of individuals. Injury, mortality, or harassment of even a single individual would be significant under CEQA. No impacts to breeding habitat are expected. Indirect impacts could include injury or mortality of individuals from operational maintenance activities during dispersal events. Impacts to CRLF during operational activities would

be less than significant due to infrequency of visits and work during daylight hours. Mitigation Measures BIO-1 and BIO-2 provide recommendations for reducing potential impacts to the CRLF to a less-than-significant level through completion of pre-construction surveys and limiting work after rain events.

California Tiger Salamander

Suitable upland habitat is present throughout the study area, as potential suitable breeding habitat can be found 0.33 mile west and 0.56 mile east of the study area. There is moderate potential for CTS to occur within the study area. This species is unlikely to be directly impacted by project activity unless individuals are dispersing through the study area during or after a rainfall event. Should the species be present on site during construction, direct impacts could include injury or mortality of individuals. Injury, mortality, or harassment of even a single individual would be considered significant under CEQA. Indirect impacts could include injury or mortality of individuals from operational maintenance activities. These impacts would be less than significant due to the infrequency of visits and work during daylight hours. Mitigation Measures BIO-1 and BIO-2 provide recommendations for reducing potential impacts to the CTS to a less-than-significant level.

San Joaquin Kit Fox

The SJKF has low potential to occur within the study area. Although burrows of sufficient size to accommodate SJKF were detected during the site survey, the species is unlikely to occupy the area due to adjacent development and the ongoing active construction associated with the East Ranch Development project surrounding the study area. However, the study area does provide suitable foraging habitat with numerous small mammal burrows (potential prey base) that are present throughout the area. The species may occur within the study area irregularly during dispersal or foraging. Impacts to SJKF, if present during construction, could include injury or mortality of individuals or destruction of occupied dens. Given SJKF's listing under the federal ESA and CESA, injury, mortality, or harassment of even a single individual would be considered significant under CEQA. Mitigation Measures BIO-1 and BIO-4 include recommendations for reducing direct impacts to SJKF to a less-than-significant level by conducting pre-construction surveys for potential dens and individuals, and establishing buffers where necessary.

Burrowing Owl

Burrowing owls have a low potential to occur within the study area. The species is unlikely to inhabit burrows observed in the area due to the construction in progress. The study area does provide foraging habitat and a prey base (small mammals). Impacts to burrowing owl, if present during construction, could include injury or mortality of individuals. Injury, mortality, or harassment of even a single individual would be considered significant under CEQA. Mitigation Measures BIO-1 and BIO-4 include recommendations for reducing direct impacts to burrowing owl to a less-than-significant level by completing pre-construction surveys for occupied burrows. Protocols recommended by the 2012 State of California Department of Fish and Game *Staff Report on Burrowing Owl Mitigation* are not needed due to the low potential for burrowing owl to occur in the study area.

Loggerhead Shrike

Loggerhead shrikes have moderate potential to forage in the study area. The species is unlikely to nest in the project boundary due to ongoing construction associated with the East Ranch

Development project surrounding the study area. The study area may provide foraging habitat. Impacts to loggerhead shrike, if present during construction, could include injury or mortality of individuals. Injury, mortality, or harassment of even a single individual would be considered significant under CEQA. Mitigation Measures BIO-1 and BIO-4 include recommendations for reducing direct impacts to loggerhead shrike to a less-than-significant level through completion of pre-construction surveys for nests and establishing buffers where appropriate.

American Badger

American badgers have a low potential to occur within the study area. The species is unlikely to inhabit burrows observed in the area due to the construction in progress. Impacts to American badgers, if present during construction, could include harassment or mortality of individuals. Injury, mortality, or harassment of even a single individual would be considered significant under CEQA. Mitigation Measure BIO-1 includes recommendations for reducing direct impacts to American badger to a less than significant level by completing pre-construction surveys for potential burrows.

5.1.3 Nesting Birds

Nesting special-status bird species and/or nesting birds protected under the MBTA and CFGC have potential to occur throughout the study area during the nesting season (February 1 to September 15). Should nesting birds be present within or near the project site during construction, direct impacts could include the destruction of nests through construction activities or the disturbance of nesting behavior through construction noise and activities. Indirect impacts to nesting birds could include the destruction or disturbance of nesting habitat. Mitigation Measures BIO-1 and BIO-4 provide recommendations for reducing impacts to nesting birds to a less than significant level.

5.1.4 Recommended Avoidance and Minimization Measures

BIO-1 Worker Environmental Awareness Program (WEAP)

Prior to initiation of construction activities (including staging and mobilization), all personnel associated with project construction shall attend a WEAP training, conducted and prepared by a qualified biologist, to aid workers in recognizing special-status species, native or nesting birds and other biological resources that may occur in the construction area. The specifics of this program will include identification and habitats of special-status species with potential to occur at the project site, a description of the regulatory status and general ecological characteristics of sensitive resources, a review of the limits of construction, and an explanation of the mitigation measures required to reduce impacts to biological resources within the work area. A fact sheet conveying this information shall also be prepared by the qualified biologist for distribution to all contractors, their employers, and other personnel involved with construction. All personnel shall sign a form provided by the trainer indicating they have attended the WEAP and understand the information presented to them.

BIO-2 CRLF and CTS Pre-construction Survey and Impact Avoidance

A qualified biologist shall conduct a pre-construction survey within 7 days prior to initiation of construction activities. The USFWS and CDFW will be notified, as appropriate, should CRLF or CTS be observed within the project site.

To avoid impacts to CRLF and CTS, the construction crew shall check beneath staged equipment each morning prior to commencement of daily construction activities. Should CRLF or CTS occur within the staging areas, construction activities should be halted until the CRLF or CTS vacates the project site on its own or until a biologist with a USFWS Recovery Permit for CRLF or CTS relocates the CRLF or CTS.A qualified biologist shall be present during initial grading and ground disturbing activities. Should CRLF or CTS be observed within the project site, the USFWS and CDFW, as appropriate, should be notified, and construction will be halted until either the CRLF or CTS exits the site on its own or until a qualified biologist approved by USFWS relocates the CRLF or CTS.

No work shall occur during a rain event (over 0.25 inch within a 24-hour period). If a rain event occurs, a qualified biologist shall inspect the site again prior to resuming work.

BIO-3 San Joaquin Kit Fox Pre-construction Survey and Impact Avoidance

A pre-construction clearance survey for SJKF shall be conducted within 7 days prior to the initiation of ground-disturbing activities. The survey area shall include the entire study area and all accessible undeveloped habitat within 200 feet. If potential dens are observed, then game cameras shall be deployed to confirm SJKF occupancy or absence. If occupied kit fox dens are identified within the project footprint, avoidance buffers shall be established by a qualified biologist. Eviction of kit fox and impacts to active dens requires federal and state "take" authorization. Construction activities shall adhere to the avoidance and minimization measures outlined in the USFWS 2011 *Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance*, outlined below:

- Project-related vehicles should observe a 20-mile per hour speed limit within the vicinity of the project site, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. To the extent possible, night-time construction should be minimized. Off-road traffic outside of designated work areas should be prohibited.
- To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials or provided with one or more escape ramps constructed of earth fill or wooden planks. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. Any pipes greater than 3 inches in diameter shall also be capped when not in use to prevent entrapment or mortality of individuals. If at any time a trapped or injured SJKF is discovered, the USFWS will be notified within three days of the discovery.
- All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in closed containers and removed at least once a week from a construction or project site.
- No firearms or pets should be allowed on the project site.
- Use of rodenticides and herbicides on the project site should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS. If rodent control must be conducted, zinc phosphide should be used because of proven lower risk to kit fox.

BIO-4 Pre-construction Survey and Impact Avoidance for Burrowing Owls, Raptors, and Other Nesting Birds

To prevent the loss of active special-status and non-special-status bird nests, juveniles or adults, project activities including vegetation clearing shall be conducted outside of the breeding season (February 1 through August 31) to the extent feasible.

If project activities will occur between February 1 and August 31, a pre-construction nesting bird survey shall be conducted by a qualified biologist no less than 7 working days prior to the activity to survey for special-status and non-special-status bird and raptor nests. The survey area shall include the project footprint and a 100-foot buffer for passerine species, a 150-foot buffer for burrowing owls, and a 300-foot buffer for raptor species. Following the survey, the following shall be implemented:

- A nesting bird survey report shall be submitted to the District prior to the initiation of project activities. The report shall detail the results of the survey including identification of the location of any active nests, and make a determination if ongoing monitoring should be conducted and/or no-disturbance buffers should be established.
- If active nests are identified during the survey and/or work is scheduled to take place within 100 feet of active passerine nests, 150 feet of active burrowing owl burrows, or 300 feet of active raptor nests, a qualified biologist shall determine appropriate no-disturbance buffers. The buffer shall be the minimum distance required to avoid take of the nest and shall be determined based on the species identified, activities proposed, level of existing noise, and line of sight from the disturbance to the nest.
- A qualified biological monitor shall be present at the initiation of project activities occurring within 100 feet of active passerine nests, 150 feet of active burrowing owl burrows, or 300-feet of active raptor nests, to ensure that project activities do not negatively affect the success of the nest. Duration and frequency of monitoring shall be determined at the discretion of the qualified biologist.
- If nesting bird monitoring is conducted, a nesting bird monitoring report shall be submitted to the District detailing the results of monitoring activities. The report shall be submitted within 30 days of the completion of the activities or nesting season.

5.2 Sensitive Natural Communities and Critical Habitat

The proposed project would have a significant effect on biological resources if it would:

b) Have a substantial adverse impact 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 US Fish and Wildlife Service.

The study area falls within critical habitat for CRLF, and there is moderate potential for species to occur on site with upland dispersal habitat present. Appropriate mitigation measures for the species are outlined under BIO-1 and BIO-2 to reduce impacts to CRLF, including its critical habitat, to a less-than-significant level.

Creeping wild rye turfs are considered a sensitive natural community, (S3, or vulnerable statewide). This community is located within the study area but outside the project site boundary, so impacts to creeping wild rye turfs would be avoided and impacts would be less than significant.

5.3 Jurisdictional Waters and Wetlands

The proposed project would have a significant effect on biological resources if it would:

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

No jurisdictional waters or wetlands exist within the study area and no direct impacts are anticipated. Indirect impacts from project activities could occur if sediment or pollutants were allowed to enter nearby waterways. Potentially jurisdictional drainages within the vicinity of the study area include freshwater emergent wetlands areas that occur approximately 330 feet south and 0.3 miles west of the project site, and Cottonwood Creek approximately 0.56 miles east of the project site.

BIO 5 Best Management Practices for Jurisdictional Waters

At a minimum, the following Best Management Practices (BMPs) should be implemented during and following construction to prevent any indirect impacts to jurisdictional waters and wetlands:

1. Vehicles and equipment should be checked at least daily for leaks and maintained in good working order. Spill kits should be available on-site at all times and a spill response plan should be developed and implemented.
2. Sediment and erosion control measures (e.g., straw wattles, silt fence, check dams) should be implemented and maintained throughout the project site to prevent the entry of sediment and/or pollutants into any waterways or jurisdictional areas. No monofilament plastic will be used for erosion control.

5.4 Wildlife Movement

The proposed project would have a significant effect on biological resources if it would:

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

Local potential for use of the study area as part of a wildlife corridor is possible due to its connections to open habitat and placement between aquatic resources. However, much of the land surrounding the study area has been recently disturbed or developed. During the reconnaissance survey, Rincon observed wildlife exclusion fencing associated with the East Ranch Development project installed through the study area hugging a pre-existing barbed wire fence running east to west, along with mule deer and a coyote inside the fenced area. Mitigation Measure BIO-1 provides recommendations for reducing potential impacts to the sensitive species that may occur and be affected by changes to this access by educating construction staff about special-status species that may occur in the study area.

5.5 Resources Protected by Local Policies and Ordinances

The proposed project would have a significant effect on biological resources if it would:

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

No resources protected by local policies and ordinances are within the project site boundary. There would be no impact.

5.6 Habitat Conservation Plans

The proposed project would have a significant effect on biological resources if it would:

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

The study area does not fall within the boundaries of any Habitat Conservation Plan, Natural Conservation Community Plan or other approved local, regional, or state habitat conservation plan. There would be no impact.

6 Limitations, Assumptions, and Use Reliance

This Biological Resources Assessment has been performed in accordance with professionally accepted biological investigation practices conducted at this time and in this geographic area. The biological investigation is limited by the scope of work performed. Reconnaissance biological surveys for certain taxa may have been conducted as part of this assessment but were not performed during a particular blooming period, nesting period, or particular portion of the season when positive identification would be expected if present, and therefore, cannot be considered definitive. The biological surveys are limited also by the environmental conditions present at the time of the surveys. In addition, general biological (or protocol) surveys do not guarantee that the organisms are not present and will not be discovered in the future within the site. In particular, mobile wildlife species could occupy the site on a transient basis or re-establish populations in the future. Our field studies were based on current industry practices, which change over time and may not be applicable in the future. No other guarantees or warranties, expressed or implied, are provided. The findings and opinions conveyed in this report are based on findings derived from site reconnaissance, jurisdictional areas, review of CNDDB RareFind5, and specified historical and literature sources. Standard data sources relied upon during the completion of this report, such as the CNDDB, may vary with regard to accuracy and completeness. In particular, the CNDDB is compiled from research and observations reported to CDFW that may or may not have been the result of comprehensive or site-specific field surveys. Although Rincon believes the data sources are reasonably reliable, Rincon cannot and does not guarantee the authenticity or reliability of the data sources it has used. Additionally, pursuant to our contract, the data sources reviewed included only those that are practically reviewable without the need for extraordinary research and analysis.

7 References

Baldwin, B.G. (Ed.), D.H. Goldman (Ed.), D. J. Keil (Ed.), R. Patterson (Ed.), T. J. Rosatti (Ed.), D. H. Wilken (Ed.). 2012. The Jepson Manual: Vascular Plants of California, Second Edition, Thoroughly Revised and Expanded. University of California Press. Berkeley, California.

Calflora. 2023. Information on wild California plants for conservation, education, and appreciation. Berkeley, California. Updated online and accessed via: www.calflora.org.

California Department of Fish and Wildlife (CDFW). 2023a. California Natural Diversity Database, Rarefind V. Accessed December 2023.

_____. 2023b. Special Animals List. Biogeographic Data Branch, California Natural Diversity Database. Accessed December 2023.

_____. 2023c. Biogeographic Information and Observation System (BIOS). Retrieved December 2023 from www.wildlife.ca.gov/data/BIOS

_____. 2023d. Special Vascular Plants, Bryophytes, and Lichens List. Biogeographic Data Branch, California Natural Diversity Database. Accessed November 2023.

California Native Plant Society. 2023. Inventory of Rare and Endangered Plants. Online edition, v9.5. https://www.rareplants.cnps.org. Accessed December 2023.

Cornell Lab of Ornithology. 2023. eBird: An online database of bird distribution and abundance [web application]. eBird, Ithaca, New York. http://www.ebird.org. Accessed December 2023.

Haag, J. 2005. Fallon Village Final Supplemental Environmental Impact Report. Accessed November 2023.

Holland, Robert F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. California Department of Fish and Wildlife, Nongame Heritage Program. 156 pgs.

iNaturalist community (iNaturalist). 2023. Observations of Wildlife Species from South San Francisco Bay, California. Available at: https://www.inaturalist.org (Accessed December 2023).

Quinn, J. 2008. The ecology of the American badger (*Taxidea taxus*) in California: assessing conservation status on multiple scales. Ph.D. Dissertation. The University of California Davis, Davis, California.

Poulin Ray, L. Danielle Todd, E. A. Haug, B. A. Millsap, and M. S. Martell. 2011.Burrowing Owl (*Athene cunicularia*). The Birds of North America Online (A. Poole Ed.). Ithaca: Cornell Lab of Ornithology. http://bna.birds.cornell.edu/bna/species/061.

Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California.

Trenham, P.C., and H.B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. *Ecological Applications* 15: 1158–1168.

Stebbins, R. C. 2003. *A Field Guide to Western Reptiles and Amphibians.* 2nd ed. Houghton-Mifflin Company. Boston, Massachusetts.

United States Department of Agricultural, Natural Resources Conservation Service. 2023a. Web Soil Survey. Soil Survey Area: Alameda County, California. Soil Survey Data: Version 17, September 11, 2023. Available at: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed December 2023.

_____. 2023b. Lists of Hydric Soils. National Cooperative Soil Survey, U.S. Department of Agriculture. https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/. Accessed December 2023.

United States Fish and Wildlife Service (USFWS). 1973. The Endangered Species Act of 1973, as amended (16 U.S.C 1531 et seq.).

_____. 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. January 2000.

_____. 2002. Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*). Region 1, U.S. Fish and Wildlife Service. Portland, Oregon.

_____. 2010. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for the California Red-Legged Frog.

_____. 2023a. Critical Habitat Portal. https://ecos.fws.gov/ecp/report/table/critical-habitat.html

_____. 2023b. Information for Planning and Consultation online project planning tool. https://ecos.fws.gov/ipac/.

_____. 2023c. National Wetlands Inventory (NWI) mapper. Available at: https://www.fws.gov/wetlands/data/mapper.html. Accessed November 2023.

Western Regional Climate Center. 2023. Climate of California. www.wrcc.dri.edu. Accessed November 2023.

Zeiner, D., W.F. Laudenslayer, Jr., and K.E. Mayer (May 1988). California's Wildlife. California Statewide Wildlife Habitat Relationship System, Volumes I, II, & III. California Department of Fish and Wildlife.

8 List of Preparers

Rincon Consultants, Inc.

Primary Author

- Alana Garza, Biologist

Secondary Authors

- Bayley Elenzweig, Biologist
- Caleb Yakel, Biologist

Technical Review

- Anastasia Ennis, Senior Biologist
- Alex Hunt, Director of Natural Resources
- Aileen Mahoney, Project Manager
- Kelsey Bennett, Director-in-charge

Graphics

- Isabelle Radis, GIS Analyst

Production

- Dario Campos, Publishing Specialist and Technical Editor

Field Reconnaissance Survey

- Bayley Elenzweig, Biologist
- Caleb Yakel, Biologist

Appendix A

Regulatory Setting

Regulatory Setting

The following is a brief summary of the regulatory context under which biological resources are managed at the federal, state, and local levels. A number of federal and state statutes provide a regulatory structure that guides the protection of biological resources. Agencies with the responsibility for protection of biological resources within the project site include the following:

- U.S. Army Corps of Engineers (wetlands and other waters of the United States)
- U.S. Fish and Wildlife Service (federally listed species and migratory birds)
- National Marine Fisheries Service (marine wildlife and anadromous fishes)
- San Francisco Regional Water Quality Control Board (waters of the State)
- California Department Fish and Wildlife (riparian areas, streambeds, and lakes; state-listed species; nesting birds, marine resources)
- California Coastal Commission
- City of Dublin General Plan

United States Army Corps of Engineers

The United States Army Corps of Engineers (USACE) is responsible for administering several federal programs related to ensuring the quality and navigability of the nation's waters.

Clean Water Act Section 404

Congress enacted the Clean Water Act (CWA) "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Section 404 of the CWA authorizes the Secretary of the Army, acting through the USACE, to issue permits regulating the discharge of dredged or fill materials into the "navigable waters at specified disposal sites."

Section 502 of the CWA further defines "navigable waters" as "waters of the United States, including the territorial seas." "Waters of the United States" are broadly defined at 33 CFR Part 328.3 to include navigable waters, perennial and intermittent streams, lakes, rivers, ponds, as well as wetlands, marshes, and wet meadows. In recent years, the USACE and US Environmental Protection Agency (USEPA) have undertaken several efforts to modernize their regulations defining "waters of the United States" (e.g., the 2015 Clean Water Rule and 2020 Navigable Waters Protection Rule), but these efforts have been frustrated by legal challenges which have invalidated the updated regulations. Thus, the agencies' longstanding definition of "waters of the United States," which dates from 1986, remains in effect albeit with supplemental guidance interpreting applicable court decisions as described below.

Waters of the U.S.

In summary, USACE and USEPA regulations define "waters of the United States" as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

2. All interstate waters including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
    i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
    ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States;
5. Tributaries of waters identified in paragraphs (a)(1)-(4) of this section;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in items 1-6 above.

Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with the USEPA.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States.

The lateral limits of USACE jurisdiction in non-tidal waters is defined by the "ordinary high-water mark" (OHWM) unless adjacent wetlands are present. The OHWM is a line on the shore or edge of a channel established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed upon the bank, shelving, changes in the character of soil, destruction of vegetation, or the presence of debris (33 CFR 328.3(e)). As such, waters are recognized in the field by the presence of a defined watercourse with appropriate physical and topographic features. If wetlands occur within, or adjacent to, waters of the United States, the lateral limits of USACE jurisdiction extend beyond the OHWM to the outer edge of the wetlands (33 CFR 328.4 (c)). The upstream limit of jurisdiction in the absence of adjacent wetlands is the point beyond which the OHWM is no longer perceptible (33 CFR 328.4; see also 51 FR 41217).

Wetlands

The USACE defines wetlands as “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3). The USACE’s delineation procedures identify wetlands in the field based on indicators of three wetland parameters: hydrophytic vegetation, hydric soils, and wetland hydrology. The following is a discussion of each of these parameters.

Hydrophytic Vegetation

Hydrophytic vegetation dominates areas where frequency and duration of inundation or soil saturation exerts a controlling influence on the plant species present. Plant species are assigned

wetland indicator status according to the probability of their occurring in wetlands. More than fifty percent of the dominant plant species must have a wetland indicator status to meet the hydrophytic vegetation criterion. The USACE published the National Wetland Plant List (USACE 2018), which separates vascular plants into the following four basic categories based on plant species frequency of occurrence in wetlands:

- **Obligate Wetland (OBL).** Almost always occur in wetlands
- **Facultative Wetland (FACW).** Usually occur in wetlands, but occasionally found in non-wetlands
- **Facultative (FAC).** Occur in wetlands or non-wetlands
- **Facultative Upland (FACU).** Usually occur in non-wetlands, but may occur in wetlands
- **Obligate Upland (UPL).** Almost never occur in wetlands

The USACE considers OBL, FACW and FAC species to be indicators of wetlands. An area is considered to have hydrophytic vegetation when greater than 50 percent of the dominant species in each vegetative stratum (tree, shrub, and herb) fall within these categories. Any species not appearing on the United States Fish and Wildlife Service's list is assumed to be an upland species, almost never occurring in wetlands. In addition, an area needs to contain at least 5% vegetative cover to be considered as a vegetated wetland.

Hydric Soils

Hydric soils are saturated or inundated for a sufficient duration during the growing season to develop anaerobic or reducing conditions that favor the growth and regeneration of hydrophytic vegetation. Field indicators of wetland soils include observations of ponding, inundation, saturation, dark (low chroma) soil colors, bright mottles (concentrations of oxidized minerals such as iron), gleying (indicates reducing conditions by a blue-grey color), or accumulation of organic material. Additional supporting information includes documentation of soil as hydric or reference to wet conditions in the local soils survey, both of which must be verified in the field.

Wetland Hydrology

Wetland hydrology is inundation or soil saturation with a frequency and duration long enough to cause the development of hydric soils and plant communities dominated by hydrophytic vegetation. If direct observation of wetland hydrology is not possible (as in seasonal wetlands), or records of wetland hydrology are not available (such as stream gauges), assessment of wetland hydrology is frequently supported by field indicators, such as water marks, drift lines, sediment deposits, or drainage patterns in wetlands.

Limitations on Jurisdiction based on Sackett v. USEPA Supreme Court Decision

On May 25, 2023, the Supreme Court issued its decision on the petition from the Sacketts, a family in Idaho that was subject to a compliance order from the USEPA for backfilling their lot near Priest Lake, which the USEPA claimed contained federally regulated wetlands. The wetlands in question were adjacent to a ditch that fed a creek that ultimately drained into Priest Lake, a navigable water body. The USEPA asserted that the Sacketts had violated the law by filling the wetlands on their property without a permit. The Court's decision addressed controversy over whether, and under what conditions, the CWA reaches navigable waters' tributaries or adjacent wetlands. The Supreme Court's decision in *Sackett* provides definitive guidance to the agencies in determining the limits of

their Clean Water Act authority. Major tenets of the decision have been incorporated into the agencies' current regulations through the September 2023 Conforming Rule.

The Court decided:

- "Adjacent wetlands" are WOTUS only if there is a continuous surface connection between the wetland and a navigable or relatively permanent water body, such that it is difficult to determine the boundary between the wetland and the water body. The opinion notes that "temporary interruptions to surface connection may sometimes occur because of phenomena like low tides or dry spells." The agencies addressed this element by defining the term "adjacent" to mean "having a continuous surface connection" in the Conforming Rule.
- The Significant Nexus Standard, introduced by the Court in prior decisions, is not mentioned in the Clean Water Act and should not be used. The Court determined that the standard applies ecological factors whose use in determining jurisdiction is not supported by the statute. The Conforming Rule removed significant nexus considerations from the definition.
- Although jurisdiction over tributaries was not addressed by the Court, the decision stated that "…the [Clean Water Act's] use of "waters" encompasses only those relatively permanent, standing or continuously flowing bodies of water forming geographical features that are described in ordinary parlance as streams, oceans, rivers, and lakes." The Conforming Rule makes clear that only relatively permanent tributaries qualify as "waters of the United States."

Rivers and Harbors Act Section 10

Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the United States, and applies to all structures and work. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. It is important to note that Section 10 applies only to navigable waters, and thus does not apply to work in non-navigable wetlands or tributaries. In some cases, Section 10 authorization is issued by the USACE concurrently with CWA Section 404 authorization, such as when certain Nationwide Permits are used.

Regional Water Quality Control Board

The State Water Resources Control Board (SWRCB) and nine Regional Water Quality Control Boards (RWQCBs) have jurisdiction over "waters of the State," which are defined as any surface water or groundwater, including saline waters, within the boundaries of the state (California Water Code sec. 13050(e)). These agencies also have responsibilities for administering portions of the CWA.

Clean Water Act Section 401

Section 401 of the CWA requires an applicant requesting a federal license or permit for an activity that may result in any discharge into navigable waters (such as a Section 404 Permit) to provide state certification that the proposed activity will not violate state and federal water quality standards. In California, CWA Section 401 Water Quality Certification (Section 401 Certification) is issued by the RWQCBs and by the SWRCB for multi-region projects. The process begins when an applicant submits an application to the RWQCB and informs the USACE (or the applicable agency from which a license or permit was requested) that an application has been submitted. The USACE will then determine a "reasonable period of time" for the RWQCB to act on the application; this is typically 60 days for routine projects and longer for complex projects but may not exceed one year. When the period has elapsed, if the RWQCB has not either issued or denied the application for Section 401 Certification, the USACE may determine that Certification has been waived and issue the requested permit. If a Section 401 Certification is issued it may include binding conditions, imposed either through the Certification itself or through the requested federal license or permit.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is the principal law governing water quality regulation in California. It establishes a comprehensive program to protect water quality and the beneficial uses of water. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution. Pursuant to the Porter-Cologne Act (California Water Code section 13000 et seq.), the policy of the State is as follows:

- The quality of all the waters of the State shall be protected
- All activities and factors affecting the quality of water shall be regulated to attain the highest water quality within reason
- The State must be prepared to exercise its full power and jurisdiction to protect the quality of water in the State from degradation

The Porter-Cologne Act established nine RWQCBs (based on watershed boundaries) and the SWRCB, which are charged with implementing its provisions and which have primary responsibility for protecting water quality in California. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. In addition, the SWRCB allocates rights to the use of surface water. The RWQCBs have primary responsibility for individual permitting, inspection, and enforcement actions within each of nine hydrologic regions. The SWRCB and RWQCBs have numerous nonpoint source related responsibilities, including monitoring and assessment, planning, financial assistance, and management.

Section 13260 of the Porter-Cologne Act requires any person discharging or proposing to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB may then authorize the discharge, subject to conditions, by issuing Waste Discharge Requirements (WDRs). While this requirement was historically applied primarily to outfalls and similar point source discharges, the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State*, effective May 2020, make it clear that the agency will apply the Porter-Cologne Act's requirements to discharges of dredge and fill material as well. The *Procedures* state that they are to be used in issuing CWA Section 401 Certifications and WDRs, and largely mirror the existing review requirements for CWA

Section 404 Permits and Section 401 Certifications, incorporating most elements of the USEPA's *Section 404(b)(1) Guidelines*. Following issuance of the *Procedures*, the SWRCB produced a consolidated application form for dredge/fill discharges that can be used to obtain a CWA Section 401 Water Quality Certification, WDRs, or both.

Non-Wetland Waters of the State

The SWRCB and RWQCBs have not established regulations for field determinations of waters of the state except for wetlands currently. In many cases the RWQCBs interpret the limits of waters of the State to be bounded by the OHWM unless isolated conditions or ephemeral waters are present. However, in the absence of statewide guidance each RWQCB may interpret jurisdictional boundaries within their region and the SWRCB has encouraged applicants to confirm jurisdictional limits with their RWQCB before submitting applications. As determined by the RWQCB, waters of the State may include riparian areas or other locations outside the OHWM, leading to a larger jurisdictional area over a given water body compared to the USACE.

Wetland Waters of the State

Procedures for defining wetland waters of the State pursuant to the SWRCB's *State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State* went into effect May 28, 2020. The SWRCB defines an area as wetland if, under normal circumstances:

- the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both;
- the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and
- the area's vegetation is dominated by hydrophytes or the area lacks vegetation.

The SWRCB's *Implementation Guidance for the Wetland Definition and Procedures for Discharges of Dredge and Fill Material to Waters of the State* (2020), states that waters of the U.S. and waters of the State should be delineated using the standard USACE delineation procedures, taking into consideration that the methods shall be modified only to allow for the fact that a lack of vegetation does not preclude an area from meeting the definition of a wetland.

United States Fish and Wildlife Service

The United States Fish and Wildlife Service (USFWS) implements several laws protecting the Nation's fish and wildlife resources, including the Endangered Species Act (ESA; 16 United States Code [USC] Sections 153 et seq.), the Migratory Bird Treaty Act (MBTA; 16 USC Sections 703-711) and the Bald and Golden Eagle Protection Act (16 USC Section 668).

Endangered Species Act

The USFWS and National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. Generally, the USFWS implements the FESA for terrestrial and freshwater species, while the NMFS implements the FESA for marine and anadromous species. Projects that would result in "take" of any threatened or endangered wildlife species, or a threatened or endangered plant species if occurring on federal land, are required to obtain permits from the USFWS or NMFS through either Section 7 (interagency consultation with a federal nexus) or Section 10 (Habitat Conservation Plan)

of the ESA, depending on the involvement by the federal government in funding, authorizing, or carrying out the project. The permitting process is used to determine if a project would jeopardize the continued existence of a listed species and what measures would be required to avoid jeopardizing the species. “Take” under federal definition means to harass, harm (which includes habitat modification), pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Proposed or candidate species do not have the full protection of the ESA; however, the USFWS and NMFS advise project applicants that they could be elevated to listed status at any time.

Migratory Bird Treaty Act

The MBTA of 1918 implements four international conservation treaties that the U.S. entered into with Canada in 1916, Mexico in 1936, Japan in 1972, and Russia in 1976. It is intended to ensure the sustainability of populations of all protected migratory bird species. The law has been amended with the signing of each treaty, as well as when any of the treaties were amended, such as with Mexico in 1976 and Canada in 1995. The MBTA prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the USFWS.

The list of migratory bird species protected by the law, in regulations at 50 CFR Part 10.13, is primarily based on bird families and species included in the four international treaties. A migratory bird species is included on the list if it meets one or more of the following criteria:

1. It occurs in the United States or U.S. territories as the result of natural biological or ecological processes and is currently, or was previously listed as, a species or part of a family protected by one of the four international treaties or their amendments.
2. Revised taxonomy results in it being newly split from a species that was previously on the list, and the new species occurs in the United States or U.S. territories as the result of natural biological or ecological processes.
3. New evidence exists for its natural occurrence in the United States or U.S. territories resulting from natural distributional changes and the species occurs in a protected family.

In 2004, the Migratory Bird Treaty Reform Act limited the scope of the MBTA by stating the MBTA applies only to migratory bird species that are native to the United States or U.S. territories, and that a native migratory bird species is one that is present as a result of natural biological or ecological processes. The MBTRA requires the USFWS to publish a list of all nonnative, human-introduced bird species to which the MBTA does not apply, and an updated list was published in 2020. The 2020 update identifies species belonging to biological families referred to in treaties the MBTA implements but are not protected because their presence in the United States or U.S. territories is solely the result of intentional or unintentional human-assisted introductions.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits anyone, without a permit issued by the USFWS, from "taking" bald or golden eagles, including their parts (including feathers), nests, or eggs. The Act provides criminal penalties for persons who "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle ... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

"Disturb" means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) derives its authority from the Fish and Game Code of California and administers several State laws protecting fish and wildlife resources and the habitats upon which they depend.

California Endangered Species Act

The California Endangered Species Act (CESA) (Fish and Game Code Section 2050 et. seq.) prohibits take of state listed threatened or endangered. Take under CESA is defined as “Hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill” (Fish and Game Code sec. 86). This definition does not prohibit indirect harm by way of habitat modification, except where such harm is the proximate cause of death of a listed species. Where incidental take would occur during construction or other lawful activities, CESA allows the CDFW to issue an Incidental Take Permit upon finding, among other requirements, that impacts to the species have been minimized and fully mitigated. Unlike the federal ESA, CESA’s protections extend to candidate species during the period (typically one year) while the California Fish and Game Commission decides whether the species warrants CESA listing.

Native Plant Protection Act

The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (Fish and Game Code Section 1900 et seq.). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare, and prohibits the take of listed plant species. Effective in 2015, CDFW promulgated regulations (14 CCR 786.9) under the authority of the NPPA, establishing that the CESA’s permitting procedures would be applied to plants listed under the NPPA as "Rare." With this change, there is little practical difference for the regulated public between plants listed under CESA and those listed under the NPPA.

Fully Protected Species Laws

The CDFW enforces Sections 3511, 4700, 5050, and 5515 of the Fish and Game Code, which prohibit take of species designated as Fully Protected. The CDFW is not allowed to issue an Incidental Take Permit for Fully Protected species; therefore, impacts to these species must be avoided. The exception is situations where a Natural Community Conservation Plan (NCCP) is in place that authorizes take of the fully protected species.

Avian Protection Laws

California Fish and Game Code sections 3503, 3503.5, and 3513 describe unlawful take, possession, or destruction of native birds, nests, and eggs. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Section 3513 makes it a state-level offense to take any bird in violation of the federal Migratory Bird Treaty Act.

Protection of Lakes and Streambeds

California Fish and Game Code section 1602 states that it is unlawful for any person to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake" without first notifying the California Department of Fish and Wildlife (CDFW) of that activity. Thereafter, if CDFW determines and informs the entity that the activity will not substantially adversely affect any existing fish or wildlife resources, the entity may commence the activity. If, however, CDFG determines that the activity may substantially adversely affect an existing fish or wildlife resource, the entity may be required to obtain from CDFW a Streambed Alteration Agreement (SAA), which will include reasonable measures necessary to protect the affected resource(s), before the entity may conduct the activity described in the notification. Upon receiving a complete Notification of Lake/Streambed Alteration, CDFW has 60 days to present the entity with a Draft SAA. Upon review of the Draft SAA by the applicant, any problematic terms are negotiated with CDFW and a final SAA is executed.

The CDFW has not defined the term “stream” for the purposes of implementing its regulatory program under Section 1602, and the agency has not promulgated regulations directing how jurisdictional streambeds may be identified, or how their limits should be delineated. However, four relevant sources of information offer insight as to the appropriate limits of CDFW jurisdiction as discussed below.

- **The plain language of Section 1602 of CFGC** establishes the following general concepts:
  - References “river,” “stream,” and “lake”
  - References “natural flow”
  - References “bed,” “bank,” and “channel”
- **Applicable court decisions**, in particular *Rutherford v. State of California* (188 Cal App. 3d 1276 (1987), which interpreted Section 1602’s use of “stream” to be as defined in common law. The Court indicated that a “stream” is commonly understood to:
  - Have a source and a terminus
  - Have banks and a channel
  - Convey flow at least periodically, but need not flow continuously and may at times appear outwardly dry
  - Represent the depression between the banks worn by the regular and usual flow of the water
  - Include the area between the opposing banks measured from the foot of the banks from the top of the water at its ordinary stage, including intervening sand bars
  - Include the land that is covered by the water in its ordinary low stage
  - Include lands below the OHWM

- **CDFW regulations** defining "stream" for other purposes, including sport fishing (14 CCR 1.72) and streambed alterations associated with cannabis production (14 CCR 722(c)(21)), which indicate that a stream:
  - Flows at least periodically or intermittently
  - Flows through a bed or channel having banks
  - Supports fish or aquatic life
  - Can be dry for a period of time
  - Includes watercourses where surface or subsurface flow supports or has supported riparian vegetation
- **Guidance documents**, *including A Field Guide to Lake and Streambed Alteration Agreements* (CDFG 1994) and *Methods to Describe and Delineate Episodic Stream Processes on Arid Landscapes for Permitting Utility-Scale Solar Power Plants* (Brady and Vyverberg 2013), which suggest the following:
  - A stream may flow perennially or episodically
  - A stream is defined by the course in which water currently flows, or has flowed during the historic hydrologic course regime (approximately the last 200 years)
  - Width of a stream course can reasonably be identified by physical or biological indicators
  - A stream may have one or more channels (single thread vs. compound form)
  - Features such as braided channels, low-flow channels, active channels, banks associated with secondary channels, floodplains, islands, and stream-associated vegetation, are interconnected parts of the watercourse
  - Canals, aqueducts, irrigation ditches, and other means of water conveyance can be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife
  - Biologic components of a stream may include aquatic and riparian vegetation, all aquatic wildlife including fish, amphibians, reptiles, invertebrates, and terrestrial species which derive benefits from the stream system
  - The lateral extent of a stream can be measured in different ways depending on the particular situation and the type of fish or wildlife resource at risk

The tenets listed above, among others, are applied to establish the boundaries of streambeds in various environments. Importance of each factor may be weighted based on site-specific considerations and the applicability of the indicators to the streambed at hand.

Local Jurisdiction

City of Dublin General Plan: Open Space Conservation and Recreation Element

Policies Pertaining to Biological Resources

Chapter 7 of the Environmental Resources Management: Conservation Element of the City of Dublin General Plan Includes the following goals, objectives, and policies to protect biological resources:

7.2 STREAM CORRIDORS AND RIPARIAN VEGETATION

Dublin's Primary and Eastern Extended Planning Areas are located within Livermore Drainage Unit which is one of two major drainage basins in the Alameda Creek Watershed. Of the many streams in the Livermore Drainage Unit, two flow through Dublin's Primary and Eastern Extended Planning Areas – Alamo Creek and Tassajara Creek, respectively. Alamo Creek runs in a north-south direction just west of Dougherty Road; Tassajara Creek also runs in a north-south direction and is located just west of Tassajara Road. Portions of these creeks have been channelized and remaining sections are being improved as a result of subdivision developments.

7.2.1 ALL PLANNING AREAS

A. Guiding Policies
   1. Protect riparian vegetation as a protective buffer for stream quality and for its value as a habitat and aesthetic resource.
   2. Promote access to stream corridors for passive recreational use and to allow stream maintenance and improvements as necessary, while respecting the privacy of owners of property abutting stream corridors.

B. Implementing Policies
   1. Enforce Watercourse Ordinance 52-87 for developed areas of the city.
   2. Require open stream corridors of adequate width to protect all riparian vegetation, improve access, and prevent flooding caused by blockage of streams.
   3. Require revegetation of creek banks with species characteristic of local riparian vegetation, where construction requires creekbank alteration.

7.3 EROSION AND SILTATION CONTROL

7.3.1 ALL PLANNING AREAS

A. Guiding Policies
   1. Maintain natural hydrologic systems.
   2. Regulate grading and development on steep slopes.

B. Implementing Policies
   1. Enforce the requirements of the Municipal Regional Permit for stormwater issued by the San Francisco Bay Regional Water Quality Control Board or any subsequent permit as well as Chapter 7 (Public Works) and Chapter 9 (Subdivisions) of the Dublin Municipal Code for maintenance of water quality and protection of stream courses.
   2. Review development proposals to insure site design that minimizes soil erosion and volume and velocity of surface runoff.
   3. Restrict development on slopes over 30 percent.

7.3.2 WESTERN EXTENDED PLANNING AREA

A. Guiding Policies
   1. Maintain natural hydrologic systems. Contain any net increase of runoff on-site or with approved off-site measures.
   2. Regulate grading and development on steep slopes, with special concern for potential problems of erosion and siltation.

B. Implementing Policies
   1. Require erosion control plans for proposed development. Erosion control plans shall include recommendations for preventing erosion and scour of drainageways, consistent with biological and visual values.

2. In general, restrict areas of steep slopes (more than 30%) to permanent open space, as part of an overall cluster development concept on approved plans. Any development in otherwise restricted areas shall require substantial mitigation which has considerable benefit to the community, in keeping with the standards of General Plan Policy 3.2.2.A.1.
3. Development projects shall comply with the requirements of the Municipal Regional Permit for stormwater issued by the San Francisco Bay Regional Water Quality Control Board or any subsequent permit as well as Dublin Municipal Code Chapter 7 (Public Works) and Chapter 9 (Subdivisions).

7.4 OAK WOODLANDS

Most of the oak woodland within the Dublin Planning Area is concentrated in the Western Extended Planning Area. In addition to California Live Oaks, other species such as laurel are a vital part of this plant community. This woodland has important visual and biological qualities.

7.4.1 PRIMARY AND EASTERN EXTENDED PLANNING AREAS

A. Guiding Policy
   1. Protect oak woodlands.
B. Implementing Policies
   1. Require preservation of oak woodlands. Where woodlands occupy slopes that otherwise could be graded and developed, permit allowable density to be transferred to another part of the site. Removal of an individual oak tree may be considered through the project review process.
   2. Enact and enforce the Heritage Tree Ordinance.

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Appendix B

Site Photographs



Photograph 1. View from the northeastern project boundary of the drainage area, facing east with the study area boundary to the east. Wildlife exclusion fence at left.



Photograph 2. Overview of star-thistle fields and non-native grassland, facing northeast from the center of the study area.



Photograph 3. View of the edge of the study area, facing south from the eastern project boundary.



Photograph 4. View of the edge of the study area, facing north from the northern project boundary.



Photograph 5. View of the study area and bordering properties, facing south from the northern project boundary.



Photograph 6. Representative burrow in the study area, looking down.



Photograph 7. View of the study area boundary, facing west from the eastern project boundary.

Appendix C

Floral and Faunal Compendium

Plant Species Observed Within the Biological Study Area on November 30, 2023

Scientific Name	Common Name	Status	Native or Introduced
Shrubs			
Eucalyptus globulus	eucalyptus	None	Introduced, Cal-IPC (limited)
Herbs			
Centaurea solsitialis	Yellow star thistle	None	Introduced, Cal-IPC (high)
Brassica nigra	black mustard	None	Introduced, Cal-IPC (moderate)
Cynara cardunculus	wild artichoke	None	Introduced, Cal-IPC (moderate)
Mentha puligeum	pennyroyal	None	Introduced, Cal-IPC (moderate)
Convulvus arvensis	field bindweed	None	Introduced, CDFA noxious threat
Croton setigerus	doveweed	None	Native
Asclepias fascicularis	narrowleaf milkweed	None	Native
Epilobium ciliatum	fringed willowherb	None	Native
Lupinus sp.	lupine species	None	Native
Foeniculum vulgare	fennel	None	Introduced, Cal-IPC (moderate)
Trifolium albopurpureum	rancheria clover	None	Native
Rumex crispus	curly dock	None	Introduced, Cal-IPC (limited)
Silybum marianum	milk thistle	None	Introduced, Cal-IPC (limited)
Grasses			
Avena fatua	wild oats	None	Introduced, Cal-IPC (moderate)
Avena barbata	slender oats	None	Introduced, Cal-IPC (moderate)
Bromus diandrus	ripgut brome	None	Introduced, Cal-IPC (moderate)
Bromus hordeaceus	soft chess	None	Introduced, Cal-IPC (limited)
Elymus triticoides	creeping wild rye	None	Native
Hordeum murinum	foxtail	None	Introduced, Cal-IPC (moderate)
Festuca perennis	Italian ryegrass	None	Introduced

Wildlife Species Observed Within the Biological Study Area on November 30, 2023

Scientific Name	Common Name	Status	Native or Introduced
Birds			
Streptopelia decaocto	Eurasian collared-dove	None	Introduced
Cathartes aura	turkey vulture	None	Native
Corvus brachyrhynchos	American crow	None	Native
Aphelocoma californica	California scrub-jay	None	Native
Sayornis saya	Say's phoebe	None	Native
Falco sparverius	American kestrel	None	Native
Buteo jamaicensis	red-tailed hawk	None	Native
Meleagris gallopavo	wild turkey	None	Introduced
Mammals			
Canis latrans	coyote	None	Native
Odocoileus hemionus columbianus	black-tailed deer	None	Native

Appendix D

Special-status Species Evaluation Tables

Special-status Plant Species in the Regional Vicinity of the Project Boundary

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Amsinckia grandiflora **large-flowered fiddleneck**	FE/SE G1/S1 1B.1	Annual herb. Cismontane woodland, valley and foothill grassland. Annual grassland in various soils. Elevations: 885-1805ft. (270-550m.) Blooms (Mar)Apr-May.	No potential	Suitable habitat is absent. Cismontane woodland is not present in the study area. Grasslands present are dominated by non-native grasses and ruderal herbs and the native communities are fragmented. There are two occurrences within a 3 mile radius of the study area, the most recent in 2018 (CDFW 2023a).
Arctostaphylos auriculata **Mt. Diablo manzanita**	None/None G2/S2 1B.3	Perennial evergreen shrub. Chaparral, cismontane woodland. In canyons and on slopes. On sandstone. Elevations: 445-2135ft. (135-650m.) Blooms Jan-Mar.	No potential	Suitable habitat is absent. Chaparral and cismontane woodland are not present in the study area.
Arctostaphylos manzanita* ssp. *laevigata **Contra Costa manzanita**	None/None G5T2/S2 1B.2	Perennial evergreen shrub. Chaparral. Rocky slopes. Elevations: 1410-3610ft. (430-1100m.) Blooms Jan-Mar(Apr).	No potential	Suitable habitat is absent. Chaparral and rocky slopes are not present in the study area. Additionally, this species is limited to higher elevations not present in the study area.
Astragalus tener var. *tener* alkali milk-vetch	None/None G2T1/S1 1B.2	Annual herb. Playas, valley and foothill grassland, vernal pools. Alkaline. Elevations: 5-195ft. (1-60m.) Blooms Mar-Jun.	No potential	Playas and vernal pools are not present in the study area. Potentially suitable habitat is present in the study area in grasslands in the drainage area in the eastern portion of the study area, where soils are alkaline. This portion of the study area is small and the study area is west of this species' range, making occurrence less likely. One occurrence was recorded in 2018 within a 5-mile radius (CDFW 2023a).
Atriplex cordulata var. *cordulata* heartscale	None/None G3T2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland. Alkaline (sometimes). Elevations: 0-1835ft. (0-560m.) Blooms Apr-Oct.	No potential	Chenopod scrub is not present in the study area. Present grasslands are mostly dominated by non-native grasses and ruderal herbs. This species' range is limited to east of the study area.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Atriplex depressa brittlescale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools. Alkaline, clay. Elevations: 5-1050ft. (1-320m.) Blooms Apr-Oct.	Low potential	Chenopod scrub, playas, and vernal pools are not present in the study area. Potentially suitable habitat is present in the study area in grasslands in the drainage area in the eastern portion of the study area, where soils are alkaline. One occurrence has been recorded within a 5-mile radius (CDFW 2023a).
Atriplex minuscula lesser saltscale	None/None G2/S2 1B.1	Annual herb. Chenopod scrub, playas, valley and foothill grassland. Alkaline, sandy. Elevations: 50-655ft. (15-200m.) Blooms May-Oct.	No potential	Suitable habitat is absent. Chenopod scrub and playas are not present in the study area and grasslands are in clay and clay-loam soils, not sandy soils. One occurrence has been recorded within a5 mile radius (CDFW 2023a).
Balsamorhiza macrolepis big-scale balsamroot	None/None G2/S2 1B.2	Perennial herb. Chaparral, cismontane woodland, valley and foothill grassland. Serpentinite (sometimes). Elevations: 150-5100ft. (45-1555m.) Blooms Mar-Jun.	No potential	Chaparral and cismontane woodland are not present in the study area.
Blepharizonia plumosa big tarplant	None/None G1G2/S1S2 1B.1	Annual herb. Valley and foothill grassland. Clay (usually). Elevations: 100-1655ft. (30-505m.) Blooms Jul-Oct.	No potential	Suitable habitat is present in the non-native grasslands in the study area and edge of the drainage area. While this species will grow with annual non-native grasses, the rarity of this species and lack of occurrences in the 5-mile radius (CDFW 2023a) make occurrence unlikely.
Calochortus pulchellus Mt. Diablo fairy-lantern	None/None G2/S2 1B.2	Perennial bulbiferous herb. Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. On wooded and brushy slopes. Elevations: 100-2755ft. (30-840m.) Blooms Apr-Jun.	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, and riparian woodland are not present in the study area. While there is grassland present, there are no wooded and brushy slopes ideal for this species.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	None/None G3T2/S2 1B.1	Annual herb. Valley and foothill grassland. Alkaline soils, sometimes described as heavy white clay. Elevations: 0-755ft. (0-230m.) Blooms May-Oct(Nov).	Low Potential	Suitable habitat is present in the drainage area and adjacent grasslands. Due to the disturbed nature of much of the study area, potential habitat is limited. Fourteen occurrences have been recorded in the 5-mile radius (CDFW 2023a).

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Chloropyron molle ssp. *hispidum* hispid salty bird's-beak	None/None G2T1/S1 1B.1	Annual herb (hemiparasitic). Meadows and seeps, playas, valley and foothill grassland. Alkaline. Elevations: 5-510ft. (1-155m.) Blooms Jun-Sep.	No potential	Potentially suitable habitat is present in the study area in the drainage area in the eastern portion of the study area, where soils are alkaline. 1 occurrence has been recorded in the study area (CDFW 2023a).
Chloropyron palmatum palmate-bracted bird's-beak	FE/SE G1/S1 1B.1	Annual herb (hemiparasitic). Chenopod scrub, valley and foothill grassland. Alkaline. Elevations: 15-510ft. (5-155m.) Blooms May-Oct.	No potential	Potentially suitable habitat is absent in the study area. While soils are necessarily alkaline in drainage area in the eastern portion of the study area, this species host plant is *Distichlis spicata*, which prefers saline soils that are not present. 1 occurrence has been recorded in the 5-mile radius of the study area (CDFW 2023a).
Deinandra bacigalupii Livermore tarplant	None/SE G1/S1 1B.1	Annual herb. Meadows and seeps. Alkaline meadows. Elevations: 490-605ft. (150-185m.) Blooms Jun-Oct.	No potential	The only known occurrences of this plant are within the 5-mile radius of the study area (CDFW 2023a). Some of the drainage area on the east side of the study area may support this species, where soils are alkaline and appeared hydric, but recent disturbance and area size makes occurrence unlikely.
Delphinium californicum ssp. *interius* Hospital Canyon larkspur	None/None G3T3/S3 1B.2	Perennial herb. Chaparral, cismontane woodland, coastal scrub. In wet, boggy meadows, openings in chaparral and in canyons. Elevations: 640-3595ft. (195-1095m.) Blooms Apr-Jun.	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, are coastal scrub are not present in the study area.
Delphinium recurvatum recurved larkspur	None/None G2?/S2? 1B.2	Perennial herb. Chenopod scrub, cismontane woodland, valley and foothill grassland. Alkaline. Elevations: 10-2590ft. (3-790m.) Blooms Mar-Jun.	No potential	Suitable habitat is absent. Chenopod scrub and cismontane woodland are not present in the study area. This species is limited to the eastern edge of the Coastal Range and the Central Valley, which does not include the study area.
Eriogonum truncatum Mt. Diablo buckwheat	None/None G1/S1 1B.1	Annual herb. Chaparral, coastal scrub, valley and foothill grassland. Dry, exposed clay or sandy substrates. Elevations: 10-1150ft. (3-350m.) Blooms Apr-Sep(Nov-Dec).	No potential	Suitable habitat is absent; this species is known only to occur on Mt. Diablo.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Eryngium jepsonii Jepson's coyote-thistle	None/None G2/S2 1B.2	Perennial herb. Valley and foothill grassland, vernal pools. Clay. Elevations: 10-985ft. (3-300m.) Blooms Apr-Aug.	No potential	While there may be portions of the study area that are suitable habitat, this species has been pushed further east than the study area by construction and habitat loss. No occurrences are recorded in the 5-mile area (CDFW 2023a).
Eschscholzia rhombipetala diamond-petaled California poppy	None/None G1/S1 1B.1	Annual herb. Valley and foothill grassland. Alkaline, clay slopes and flats. Elevations: 0-3200ft. (0-975m.) Blooms Mar-Apr.	Low potential	Suitable habitat is present in the study area. Due to its small size, this species can be easily missed and new occurrences in non-native grassland habitat in eastern Alameda have been recently recorded, despite previously being regarded as locally extirpated. One recorded occurrence in the 5-mile radius (CDFW 2023a).
Extriplex joaquinana San Joaquin spearscale	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, playas, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with Distichlis spicata, Frankenia, etc. Elevations: 5-2740ft. (1-835m.) Blooms Apr-Oct.	Low Potential	Suitable habitat is present in the drainage area including creeping wild rye turfs and non-native grasslands. There have been 12 occurrences recorded in the 5-mile radius (CDFW 2023a), many of which were growing in similar conditions. Recent disturbance in and around this habitat lowers the potential for occurrence.
Fritillaria liliacea fragrant fritillary	None/None G2/S2 1B.2	Perennial bulbiferous herb. Cismontane woodland, coastal prairie, coastal scrub, valley and foothill grassland. Often on serpentine; various soils reported though usually on clay, in grassland. Elevations: 10-1345ft. (3-410m.) Blooms Feb-Apr.	No potential	No suitable habitat present. The range of this species is limited to more western areas than the study area (CDFW 2023a).
Helianthella castanea Diablo helianthella	None/None G2/S2 1B.2	Perennial herb. Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Azonal soils, Partial shade (often), rocky (usually). Elevations: 195-4265ft. (60-1300m.) Blooms Mar-Jun.	No potential	Suitable habitat is absent. Dry rocky soil and partial shade are absent in the study area. Two known occurrences in the 5 mile radius are recorded (CDFW 2023a).

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Hesperolinon breweri Brewer's western flax	None/None G2/S2 1B.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soil in serpentine chaparral and serpentine grassland. Elevations: 100-3100ft. (30-945m.) Blooms May-Jul.	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, and rocky soils are not present in the study area. Much of the study area is non-native grassland and soils are clay or clay-loam.
Legenere limosa legenere	None/None G2/S2 1B.1	Annual herb. Vernal pools. In beds of vernal pools. 1-. Elevations: 5-2885ft. (1-880m.) Blooms Apr-Jun.	No potential	Suitable habitat is absent. Vernal pools are not present in the study area.
Leptosyne hamiltonii Mt. Hamilton coreopsis	None/None G2/S2 1B.2	Annual herb. Cismontane woodland. On steep shale talus with open southwestern exposure. Elevations: 1805-4265ft. (550-1300m.) Blooms Mar-May.	No potential	Suitable habitat is absent. Cismontane woodland and steep shale talus are not present in the study area and this species is limited to high elevation and mountainous terrain.
Malacothamnus hallii Hall's bush-mallow	None/None G2/S2 1B.2	Perennial deciduous shrub. Chaparral, coastal scrub. Some populations on serpentine. Elevations: 35-2495ft. (10-760m.) Blooms (Apr)May-Sep(Oct).	No potential	Suitable habitat is absent. Chaparral and coastal scrub are not present in the study area.
Monolopia gracilens woodland woollythreads	None/None G3/S3 1B.2	Annual herb. Broad-leafed upland forest, chaparral, cismontane woodland, north coast coniferous forest, valley and foothill grassland. Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns, but may have only weak affinity to serpentine. Elevations: 330-3935ft. (100-1200m.) Blooms (Feb)Mar-Jul.	No potential	Suitable habitat is absent. Broad-leafed upland forest, chaparral, cismontane woodland, north coast coniferous forest, and sandy to rocky soils are not present in the study area. Grasslands in the study area are dominated by non-native grasses and ruderal herbs. The small community of native grasses are fragmented and in clay/clay-loam. There are no recorded occurrences in the 5-mile radius (CDFW 2023a).
Navarretia prostrata prostrate vernal pool navarretia	None/None G2/S2 1B.2	Annual herb. Coastal scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline soils in grassland, or in vernal pools. Mesic, alkaline sites. Elevations: 10-3970ft. (3-1210m.) Blooms Apr-Jul.	Low Potential	A presumed extant population is located a quarter mile southwest of the study area (CDFW 2023a), though it may have been recently affected by disturbance. Alkaline grassland in the study area could potentially support this species. The study area does not support vernal pools and has been recently disturbed.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Phacelia phacelioides Mt. Diablo phacelia	None/None G2/S2 1B.2	Annual herb. Chaparral, cismontane woodland. Adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine. Elevations: 1640-4495ft. (500-1370m.) Blooms Apr-May.	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, rock outcrops, and talus are not present in the study area and this species is limited to high-elevation and mountainous terrain.
Plagiobothrys glaber hairless popcornflower	None/None GX/SX 1A	Annual herb. Marshes and swamps, meadows and seeps. Coastal salt marshes and alkaline meadows. Elevations: 50-590ft. (15-180m.) Blooms Mar-May.	No potential	Suitable habitat is absent. Marshes and swamps, and meadows and seeps are not present in the study area. One occurrence on a roadside 1.5 miles away in 2003 prior to continued development (CDFW 2023a).
Polemonium carneum Oregon polemonium	None/None G3G4/S2 2B.2	Perennial herb. Coastal prairie, coastal scrub, lower montane coniferous forest. Elevations: 0-6005ft. (0-1830m.) Blooms Apr-Sep.	No potential	Suitable habitat is absent. Coastal prairie, coastal scrub, and lower montane coniferous forest are absent in the study area.
Puccinellia simplex California alkali grass	None/None G2/S2 1B.2	Annual herb. Chenopod scrub, meadows and seeps, valley and foothill grassland, vernal pools. Alkaline, vernally mesic. Sinks, flats, and lake margins. Elevations: 5-3050ft. (2-930m.) Blooms Mar-May.	No potential	Suitable habitat absent. Sinks, flats, and lake margins are not present in the study area.
Ravenella exigua chaparral harebell	None/None G2/S2 1B.2	Chaparral. Rocky sites, usually on serpentine in chaparral. 275-1250m. Blooms May-Jun.	No potential	Suitable habitat is absent. Chaparral and rocky sites are not present in the study area.
Senecio aphanactis chaparral ragwort	None/None G3/S2 2B.2	Annual herb. Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. Elevations: 50-2625ft. (15-800m.) Blooms Jan-Apr(May).	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, coastal scrub, and drying alkaline flats are not present in the study area.
Spergularia macrotheca var. *longistyla* long-styled sand-spurrey	None/None G5T2/S2 1B.2	Perennial herb. Marshes and swamps, meadows and seeps. Alkaline. Elevations: 0-835ft. (0-255m.) Blooms Feb-May.	No potential	Suitable habitat is absent. Marshes and swamps, meadows and seeps are not present in the study area.
Streptanthus albidus ssp. *peramoenus* most beautiful jewelflower	None/None G2T2/S2 1B.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Serpentine outcrops, on ridges and slopes. Elevations: 310-3280ft. (95-1000m.) Blooms (Mar)Apr-Sep(Oct).	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, and serpentine outcrops are not present in the study area.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Streptanthus hispidus Mt. Diablo jewelflower	None/None G2/S2 1B.3	Annual herb. Chaparral, valley and foothill grassland. Talus or rocky outcrops. Elevations: 1200-3935ft. (365-1200m.) Blooms Mar-Jun.	No potential	Suitable habitat is absent. Chaparral, rocky outcrops, and talus are not present in the study area. This species is limited to high-elevation and mountainous terrain.
Stuckenia filiformis ssp. *alpina* northern slender pondweed	None/None G5T5/S2S3 2B.2	Perennial rhizomatous herb (aquatic). Marshes and swamps. Shallow, clear water of lakes and drainage channels. Elevations: 985-7055ft. (300-2150m.) Blooms May-Jul.	No potential	Suitable habitat is absent. There is no aquatic habitat present in the study area.
Suaeda californica California seablite	FE/None G1/S1 1B.1	Perennial evergreen shrub. Marshes and swamps. Margins of coastal salt marshes. Elevations: 0-50ft. (0-15m.) Blooms Jul-Oct.	No potential	Suitable habitat is absent. There is no aquatic habitat present in the study area.
Trifolium hydrophilum saline clover	None/None G2/S2 1B.2	Annual herb. Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. Elevations: 0-985ft. (0-300m.) Blooms Apr-Jun.	Low potential	Potentially suitable habitat is present in the alkaline grasslands in the drainage area. The only recorded occurrence within 5 miles, 1 mile southwest of the study area from 2018, may have been extirpated (CDFW 2023a).
Triquetrella californica coastal triquetrella	None/None G2/S2 1B.2	Moss. Coastal bluff scrub, coastal scrub. Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. Elevations: 35-330ft. (10-100m.)	No potential	Suitable habitat is absent. Coastal bluff scrub, coastal scrub, gravel, and thin soils over outcrops are not present in the study area.
Tropidocarpum capparideum caper-fruited tropidocarpum	None/None G1/S1 1B.1	Annual herb. Valley and foothill grassland. Alkaline clay. Elevations: 5-1495ft. (1-455m.) Blooms Mar-Apr.	No potential	Potentially suitable habitat is present, but this species' range has been pushed east by development. The study area is within historic range of this species.
Viburnum ellipticum oval-leaved viburnum	None/None G4G5/S3? 2B.3	Perennial deciduous shrub. Chaparral, cismontane woodland, lower montane coniferous forest. Elevations: 705-4595ft. (215-1400m.) Blooms May-Jun.	No potential	Suitable habitat is absent. Chaparral, cismontane woodland, and lower montane coniferous forest are not present in the study area.

Regional Vicinity refers to within a 9-quad search radius of site.

Status (Federal/State)

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SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere
3 = Need more information (Review List)
4 = Limited Distribution (Watch List)

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Special-status Wildlife Species in the Regional Vicinity of the Project Site

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Bombus caliginosus obscure bumble bee	None/None G2G3/S1S2	Coastal areas from Santa Barbara County north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	No potential	Although ground burrows are present on site, significant floral resources are not present within the study area. No occurrences have been recorded in the regional vicinity of the study area.
Bombus crotchii Crotch bumble bee	None/SCE G2/S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include *Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia,* and *Eriogonum*.	No potential	Although ground burrows are present on site, significant floral resources are not present within the study area. One occurrence has been recorded within a 5-mile radius (CDFW 2023a).
Bombus occidentalis western bumble bee	None/SCE G3/S1	Once common and widespread, the species has declined precipitously from central CA to southern B.C., perhaps from disease. .	No potential	Although ground burrows are present on site, significant floral resources are not present within the study area. Two occurrences have been recorded within a 5-mile (CDFW 2023a).
Branchinecta longiantenna longhorn fairy shrimp	FE/None G2/S2	Endemic to the eastern margin of the Central Coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	No potential	No wetlands or vernal pools occur within the study area thus, suitable habitat is absent. One known occurrence has been recorded within a 5-mile radius (CDFW 2023a).
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	No potential	No wetlands or vernal pools occur within the study area thus, suitable habitat is absent. One known occurrence has been recorded within a 5-mile radius (CDFW 2023a).
Branchinecta mesovallensis midvalley fairy shrimp	None/None G2/S2S3	Vernal pools in the Central Valley. .	No potential	No wetlands or vernal pools occur within the study area thus, suitable habitat is absent.
Efferia antiochi Antioch efferian robberfly	None/None G1G2/S1S2	Known only from Contra Costa and Fresno counties. .	No potential	The study area is outside of the species range.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Gonidea angulata western ridged mussel	None/None G3/S2	Primarily creeks and rivers and less often lakes. Originally in most of state, now extirpated from Central and Southern California. .	No potential	No creek, rivers, or lakes are present within the study area.
Helminthoglypta nickliniana bridgesi Bridges' coast range shoulderband	None/None G3T1/S1S2	Inhabits open hillsides of Alameda and Contra Costa counties. Tends to colonize under tall grasses and weeds.	Low potential	Non-native grassland present within the study area may provide suitable habitat, especially in areas supporting thistles and star thistle. There are no recorded occurrences within a 5-mile radius of the study area (CDFW 2023a).
Hygrotus curvipes curved-foot hygrotus diving beetle	None/None G2/S2	Aquatic; known only from Alameda and Contra Costa counties. .	No potential	No aquatic habitat is present within the study area.
Lepidurus packardi vernal pool tadpole shrimp	FE/None G3/S3	Inhabits vernal pools and swales in the Sacramento Valley containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	No potential	No wetlands or vernal pools occur within the study area thus, suitable habitat is absent.
Danaus plexippus pop. 1 Monarch butterfly - California overwintering population	FC/None G4T12Q/S2	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	No potential	There are no protected groves of trees to support roosting. Suitable floral resources and water sources are not present within the study area.
Linderiella occidentalis California linderiella	None/None G2G3/S2S3	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and total dissolved solids.	No potential	No wetlands or vernal pools occur within the study area; thus, suitable habitat is absent.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Reptiles				
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Low potential	Suitable aquatic habitat is not present within the study area, or within 0.5-km of the study area. However, there is one known occurrence within a pond along Cottonwood Creek in 2010, located approximately 0.56 miles east of the study area. Eleven known occurrences have been recorded within a 5-mile radius (CDFW 2023a).
Masticophis flagellum ruddocki San Joaquin coachwhip	None/None G5T2T3/S3 SSC	Open, dry habitats with little or no tree cover. Found in valley grassland and saltbush scrub in the San Joaquin Valley. Needs mammal burrows for refuge and oviposition sites.	No potential	The study area is outside of the species range.
Masticophis lateralis euryxanthus Alameda whipsnake	FT/ST G4T2/S2	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Mostly south-facing slopes and ravines, with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	No potential	No chaparral or scrub habitat is present within or adjacent to the study area. No occurrences have been recorded in a 5-mile radius of the study area (CDFW 2023a).
Phrynosoma blainvillii coast horned lizard	None/None G4/S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	No potential	Suitable sandy habitat is absent, and no occurrences have been recorded within 5 miles of the study area (CDFW 2023a).

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Amphibians				
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	FT/ST G2G3T3/S3 WL	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Moderate potential	Numerous burrows with entrance diameters of 4 inches and below were observed throughout the non-disturbed portions of the study area. A drainage and freshwater emergent wetland are located approximately 0.3 miles west of the study area. There are no vernal pools present throughout or nearby the study area. There are fifty-four recorded occurrences within a 5-mile radius (CDFW 2023a).
Rana boylii pop. 4 foothill yellow-legged frog - central coast DPS	FT/SE G3T2/S2	San Francisco Peninsula and Diablo Range south of San Francisco Bay Estuary, and south through the Santa Cruz and Gabilan Mountains east of the Salinas River in the southern inner Coast Ranges. Partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis.	No potential	Suitable stream habitat is absent and no occurrences have been recorded within 5 miles of the study area (CDFW 2023a).

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Rana draytonii California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Moderate potential	The study area falls within critical habitat for the species (IPAC 2023). Numerous burrows with entrance diameters of 4 inches and below were observed throughout the non-disturbed portions of the study area. There is no suitable shrubby or riparian habitat present within the study area. However, there is a drainage approximately 0.3 miles west of the study area and Cottonwood Creek, an intermittent stream, is located approximately 0.56 miles east of the study area. There are forty recorded occurrences within a 5-mile radius of the study area (CDFW 2023a).
Spea hammondii western spadefoot	None/None G2G3/S3S4 SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	No potential	Although grassland habitat is present, no vernal pools are present within or near the study area. No known occurrences have been recorded within 5-mile radius of study area (CDFW 2023a).
Fish				
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	FT/None G5T3Q/S3	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays.	No potential	No aquatic habitat is present within the study area.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Birds				
Accipiter cooperii Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river floodplains; also, live oaks.	Low potential	There is no suitable nesting habitat present within the study area and no known occurrences within a 5-mile radius (CDFW 2023a). However, there are multiple recent research grade occurrences nearby in iNaturalist (2023) and the nearby creek to the east may host suitable nesting habitat. The open grasslands found within the study area may provide suitable foraging habitat.
Accipiter striatus sharp-shinned hawk	None/None G5/S4 WL	Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	No potential	There is no suitable riparian or woodland habitat present within the study area and no bodies of water are in close proximity. No known occurrences have been recorded within 5-mile radius (CDFW 2023a; iNaturalist 2023).
Agelaius tricolor tricolored blackbird	None/ST G1G2/S2 SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few km of the colony.	No potential	There is no suitable open water or nesting habitat present within the study area. There are six known occurrences within a 5-mile radius with the most recent in 2014 (CDFW 2023a).
Ammodramus savannarum grasshopper sparrow	None/None G5/S3 SSC	Dense grasslands on rolling hills, lowland plains, in valleys and on hillsides on lower mountain slopes. Favors native grasslands with a mix of grasses, forbs and scattered shrubs. Loosely colonial when nesting.	Low potential	Although the study area does not contain native grassland, the dominant non-native grassland covered hills may provide suitable nesting habitat. No known occurrences have been recorded within 5 miles (CDFW 2023a).
Aquila chrysaetos golden eagle	None/None G5/S3 FP WL	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Low potential	The study area consists of rolling hills but no suitable cliff-walled canyons or large trees located in open areas for nesting habitat. Open grassland found throughout the study area may provide suitable foraging habitat. One occurrence was recorded within 5 miles in 1992 (CDFW 2023a).

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Ardea herodias great blue heron	None/None G5/S4	Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	No potential	There is no suitable foraging habitat present within the study area
Athene cunicularia burrowing owl	None/None G4/S2 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Moderate potential	There are numerous burrows present throughout the non-native grassland habitat found throughout the study area. There is one known occurrence 1-mile northeast of the study area in 2010, and a total of 29 occurrences within a 5-mile radius (CDFW 2023a).
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	Low potential	Open grassland habitat is present throughout the study area. There are two known occurrences recorded within a 5-mile radius, with the most recent in 2003 (CDFW 2023a).
Buteo swainsoni Swainson's hawk	None/ST G5/S4	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch lands with groves or lines of trees. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Low potential	The open non-native grassland may present suitable foraging habitat. However, there is no suitable breeding habitat present within the study area. No known occurrences have been recorded within 5 miles of the study area (CDFW 2023a).
Circus hudsonius northern harrier	None/None G5/S3 SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	No potential	There are no marsh habitats present within or nearby the study area. One known occurrence within 5-mile radius in 1992 (CDFW 2023a).

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Elanus leucurus white-tailed kite	None/None G5/S3S4 FP	Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Low potential	Although the study area is comprised of rolling hills, there are no scattered oaks, marshes, or woodlands present within or nearby the study area. However, individuals may pass through for foraging. There are two known occurrences within a 5-mile radius, with the most recent in 2009 (CDFW 2023a).
Eremophila alpestris actia California horned lark	None/None G5T4Q/S4 WL	Coastal regions, chiefly from Sonoma County to San Diego County. Also main part of San Joaquin Valley and east to foothills. Short-grass prairie, "bald" hills, mountain meadows, open coastal plains, fallow grain fields, alkali flats.	No potential	There are no suitable short-grass prairie, meadow, coastal plain, or alkali flat habitats present within or nearby the study area. There are two known occurrences within a 5-mile radius, with the most recent recorded in 1992 (CDFW 2023a).
Falco mexicanus prairie falcon	None/None G5/S4 WL	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Low potential	There are no suitable cliffs within or nearby the study area for breeding. However, the open hilly non-native grassland found throughout the study area may provide suitable foraging habitat. Five known occurrences have been recorded within a 5-mile radius, with the most recent in 2008 (CDFW 2023a).
Gymnogyps californianus California condor	FE/SE G1/S2	Occurs in rocky shrublands, coniferous forests, and oak savanna. They use cliffs or large trees as nesting sites, and often use rock crevices where there is minimal disturbance. Condors feed on carrion of large megafauna such as cattle, goats, deer, and smaller mammals such as rabbits or coyotes.	No potential	There is no suitable habitat within or nearby the study area.
Haliaeetus leucocephalus bald eagle	FD/SE G5/S3 FP	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	No potential	There is no suitable open water or nesting habitat present within the study area. No occurrences have been recorded within 5-miles (CDFW 2023a).

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Lanius ludovicianus loggerhead shrike	None/None G4/S4 SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub and washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.	Moderate potential	Suitable nesting habitat is not present; however, this species may forage in the open grassland habitat found within study area. Barbed wire fencing runs through the study area and may provide suitable perching for hunting. No known occurrences have been recorded within 5 miles (CDFW 2023a).
Laterallus jamaicensis coturniculus California black rail	None/ST G3T1/S2 FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	No potential	There are no suitable fresh or salt marsh habitats present within the study area. No occurrences have been recorded within 5-miles of study area (CDFW 2023a).
Melospiza melodia pusillula Alameda song sparrow	None/None G5T2T3/S2 SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia.	No potential	There is no suitable salt marsh habitat present within the study area. No occurrences have been recorded within 5-miles of the study area (CDFW 2023a).
Sternula antillarum browni California least tern	FE/SE G4T2T3Q/S2 FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, land fills, or paved areas.	No potential	There is no suitable sandy beach habitat or bodies of water present within or nearby the study area. No known occurrences have been recorded within 5 miles (CDFW 2023a).
Mammals				
Antrozous pallidus pallid bat	None/None G4/S3 SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	No potential	There are no suitable roosting habitats present within or nearby the study area. No known occurrences have been recorded within 5 miles of the study area (CDFW 2023a).

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Corynorhinus townsendii Townsend's big-eared bat	None/None G4/S2 SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites, typically coniferous or deciduous forests. Roosts in the open, hanging from walls & ceilings in caves, lava tubes, bridges, and buildings. This species is extremely sensitive to human disturbance.	No potential	There are no suitable roosting habitats present within or nearby the study area. No known occurrences have been recorded within 5 miles of the study area (CDFW 2023a).
Dipodomys heermanni berkeleyensis Berkeley kangaroo rat	None/None G4T1/S2	Open grassy hilltops and open spaces in chaparral and blue oak/foothill pine woodlands. Needs fine, deep, well-drained soil for burrowing.	No potential	No suitable woodland types are present within or nearby the study area. No known occurrences have been recorded within 5 miles of the study area (CDFW 2023a).
Lasiurus cinereus hoary bat	None/None G3G4/S4	Typically roosts in trees in deciduous and coniferous forests and woodlands but occassionally roosts in rocks crevices. Forages in open areas, typically along riparian corridors or over water. Diet primarily consists of moths.	No potential	There are no suitable roosting habitats present within or nearby the study area. No known occurrences have been recorded within 5 miles of the study area (CDFW 2023a).
Myotis yumanensis Yuma myotis	None/None G5/S4	Occurs in a variety of lowland and upland habitats including desert scrub, riparian, and woodlands and forests. Distribution is closely tied to bodies of water. Roosts in a variety of areas including caves, cliffs, mines, crevices in live trees, and buildings and other man-made structures.	No potential	There are no suitable roosting habitats present within or nearby the study area. No known occurrences have been recorded within 5 miles of the study area (CDFW 2023a).
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	None/None G5T2T3/S2S3 SSC	Typically found in forest habitats with moderate to dense understory. Can occur in chaparral, riparian woodlands, and coniferous forests, particularly redwood. Builds middens out of grasses, leaves, and woody debris. This subspecies is found only in the San Francisco Bay region.	No potential	There is no chaparral or woodland habitat present within the study area.

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Taxidea taxus American badger	None/None G5/S3 SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Moderate potential	Several burrows with entrance diameters over 4 inches were observed within the northern portion of the study area. These burrows were located just north of an orange exclusion fence that ran through the study area going east to west. Smaller burrows are also present throughout the open grassland habitat within the study area which may provide foraging opportunities. There are five known occurrences recorded within a 5-mile radius, with the most recent in 2004 (CDFW 2023a).
Vulpes macrotis mutica San Joaquin kit fox	FE/ST G4T2/S3	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	Low potential	Several burrows with entrance diameters over 4 inches were observed within the northern portion of the project footprint. These burrows were located just north of an orange construction/exclusion fence that ran through the study area going east to west. Smaller burrows are also present throughout the open grassland habitat within the study area which may provide foraging opportunities. However, due to the study area being adjacent to housing development, and active construction ongoing around the study area, the habitat is likely unsuitable. Additionally, there is only one known occurrence recorded within a 5-mile radius from 1975 (CDFW 2023a).

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FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare
SD = State Delisted
SSC = CDFW Species of Special Concern
FP = CDFW Fully Protected
WL = CDFW Watch List

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere
3 = Need more information (Review List)
4 = Limited Distribution (Watch List)

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Other Statuses

G1 or S1 Critically Imperiled Globally or Subnationally (state)
G2 or S2 Imperiled Globally or Subnationally (state)
G3 or S3 Vulnerable to extirpation or extinction Globally or Subnationally (state)
G4/5 or S4/5 Apparently secure, common and abundant
GH or SH Possibly Extirpated – missing; known from only historical occurrences but still some hope of rediscovery

Additional notations may be provided as follows

T – Intraspecific Taxon (subspecies, varieties, and other designations below the level of species)
Q – Questionable taxonomy that may reduce conservation priority
? – Inexact numeric rank

Appendix C

Confidential Cultural Resources Technical Report

CONFIDENTIAL APPENDIX

**To protect sensitive information about the location and nature of cultural resources, this appendix is not included in the public draft of this document.

Appendix D

Energy Calculations

DSRSD Reservoir

Last Updated: 2/12/2024

Compression-Ignition Engine Brake-Specific Fuel Consumption (BSFC) Factors **[1]**:

HP: 0 to 100	0.0588	HP: Greater than 100	0.0529

Values above are expressed in gallons per horsepower-hour/BSFC.

CONSTRUCTION EQUIPMENT

Construction Equipment	#	Hours per Day	Horsepower	Load Factor	Construction Phase	Fuel Used (gallons)
Scrapers	2	8	367	0.48	Site Preparation Phase	2,533
Off-Highway Trucks	2	8	402	0.38	Site Preparation Phase	2,196
Tractors/Loaders/Backhoes	2	8	97	0.37	Site Preparation Phase	574
Excavators	2	8	158	0.38	site Preparation Phase	863
Tractors/Loaders/Backhoes	2	8	97	0.37	Grading Phase	810
Rubber Tired Dozers	2	8	247	0.4	Grading Phase	2,005
Excavators	4	8	158	0.38	Grading Phase	2,437
Graders	2	8	187	0.41	Grading Phase	1,556
Scrapers	2	8	367	0.48	Grading Phase	3,576
Off-Highway Trucks	4	8	402	0.38	Grading Phase	6,201
Other Construction Equipment	2	8	172	0.42	Grading Phase	1,466
Plate Compactors	2	8	8	0.43	Pipeline/Access Road Installation	71
Forklifts	2	8	89	0.2	Pipeline/Access Road Installation	368
Rollers	2	8	80	0.38	Pipeline/Access Road Installation	629
Surfacing Equipment	2	8	263	0.3	Pipeline/Access Road Installation	1,468
Trenchers	2	8	78	0.5	Pipeline/Access Road Installation	807
Air Compressors	2	8	78	0.48	Reservoir Installation	7,709
Cranes	1	8	231	0.29	Reservoir Installation	6,204
Forklifts	1	8	89	0.2	Reservoir Installation	1,833
Generator Sets	1	8	84	0.74	Reservoir Installation	6,400
Off-Highway Trucks	2	8	402	0.38	Reservoir Installation	28,294
Other Construction Equipment	3	8	172	0.42	Reservoir Installation	20,070
Plate Compactors	1	8	8	0.43	Paving Phase	18
Graders	2	8	187	0.41	Paving Phase	713
Pavers	2	8	130	0.42	Paving Phase	508
Paving Equipment	2	8	97	0.37	Paving Phase	371
Rollers	2	8	80	0.38	Paving Phase	314
Surfacing Equipment	1	8	263	0.3	Paving Phase	367
					Total Fuel Used	**100,362 (Gallons)**

Construction Phase	Days of Operation
Site Preparation Phase	17
Grading Phase	24
Pipeline/Access Road Installation	22
Reservoir Installation	219
Paving Phase	11
Total Days	293

WORKER TRIPS

Constuction Phase	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
Site Preparation Phase	25.3	20	11.7	157.23
Grading Phase	25.3	45	11.7	499.45
Pipeline/Access Road Installation	25.3	0	11.7	0.00
Reservoir Installation	25.3	0	11.7	0.00
Paving Phase	25.3	25	11.7	127.17
			Total	**783.85**

HAULING AND VENDOR TRIPS

Trip Class	MPG [2]	Trips	Trip Length (miles)	Fuel Used (gallons)
HAULING TRIPS				
Site Preparation Phase	7.6	0	20.0	0.00
Grading Phase	7.6	63	20.0	165.79
Pipeline/Access Road Installation	7.6	0	20.0	0.00
Reservoir Installation	7.6	0	20.0	0.00
Paving Phase	7.6	0	20.0	0.00
			Total	**165.79**
VENDOR TRIPS				
Site Preparation Phase	7.6	0	8.4	0.00
Grading Phase	7.6	0	8.4	0.00
Pipeline/Access Road Installation	7.6	0	8.4	0.00
Reservoir Installation	7.6	0	8.4	0.00
Paving Phase	7.6	0	8.4	0.00
			Total	-

Total Gasoline Consumption (gallons)	**784**
Total Diesel Consumption (gallons)	**100,528**

Sources:

[1] United States Environmental Protection Agency. 2021. *Exhaust and Crankcase Emission Factors for Nonroad Compression-Ignition Engines in MOVES3.0.2* . September. Available at: https://www.epa.gov/system/files/documents/2021-08/420r21021.pdf.

[2] United States Department of Transportation, Bureau of Transportation Statistics. 2021. *National Transportation Statistics* . Available at: https://www.bts.gov/topics/national-transportation-statistics.

Appendix E

RCNM Calculations

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 2/12/2024
Case Description: Grading Phase

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Single-Family Residences	Residential	65	55	50

			Equipment			
			Spec	Actual	Receptor	Estimated
	Impact		Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Excavator	No	40		80.7	90	0
Grader	No	40	85		90	0
Scraper	No	40		83.6	90	0

				Results												
		Calculated (dBA)		Noise Limits (dBA)						Noise Limit Exceedance (dBA)						
				Day		Evening		Night		Day		Evening		Night		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	
Excavator		75.6	71.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Grader		79.9	75.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Scraper		78.5	74.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Total	79.9	79.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

*Calculated Lmax is the Loudest value.