Dublin Fallon 580 Project

CEQA Addendum

April 8,2024

Planning Application Number: PLPA-2023-00033

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Project Overview

This Initial Study has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) and assesses the potential environmental impacts of implementing the proposed project described below. The Initial Study consists of a completed environmental checklist and a brief explanation of the environmental topics addressed in the checklist.

The subject of this Initial Study is the Dublin Fallon 580 Development project, which includes the potential development of General Commercial/Campus Office (GC/CO), Open Space (OS), Parks/Public Recreation (P/PR), and Medium High (MH) Density Residential uses on approximately 192-acres in eastern Dublin within the Eastern Dublin Specific Plan (EDSP) area and Fallon Village project site. Implementation of the proposed project would result in a General Plan/Specific Plan Amendment to eliminate the Public/Semi-Public (P/SP) land use designation on the project site and amend the land use designation on 42.6 +/- acres from OS to P/PR, a Stage 1 Development Plan amendment, a Stage 2 Development Plan for the residential parcels, and a Development Agreement. The project applicant has also submitted a Large Lot Vesting Tentative Tract Map to subdivide the 192-acre site into 11 parcels to accommodate proposed development of up to 238 residential units and up to 3,299,670-square feet of GC/CO uses. Additionally, the project applicant has submitted two Small Lot Vesting Tentative Tract Maps (VTTMs) for development of the MH Density Residential uses.

Prior CEQA Analysis

Prior CEQA analysis includes: 1) the Eastern Dublin General Plan Amendment and Specific Plan Environmental Impact Report (EIR) (1993); 2) the East Dublin Properties Stage I Development Plan and Annexation Supplemental EIR (2002); and 3) the Fallon Village Supplemental EIR (2005). Collectively, these three environmental review documents are referred to as the "EDSP EIRs" or "previous CEQA findings," and are described below.

Eastern Dublin General Plan Amendment and Specific Plan EIR (1993)

The Eastern Dublin General Plan Amendment and Specific Plan EIR and an addendum (Eastern Dublin EIR) were certified by the City Council on August 22, 1994. This EIR analyzed General Plan Amendments affecting a 6,920-acre area and the adoption of the Eastern Dublin Specific Plan (EDSP), which encompassed a 3,328-acre area and provides a comprehensive planning framework for future development in Eastern Dublin. The area considered in this EIR included the project site within the General Plan Amendment area. The Eastern Dublin EIR evaluated the following impacts:

- Land Use
- Population, Employment, and Housing
- Traffic and Circulation
- Community Services and Facilities
- Sewer, Water, and Storm Drainage
- Soils, Geology, and Seismicity
- Biological Resources
- Visual Resources
- Cultural Resources
- Noise
- Air Quality
- Fiscal Considerations

The Eastern Dublin EIR identified the following significant and unavoidable impacts:

- Cumulative loss of agriculture and open space land
- Cumulative traffic
- Extension of certain community facilities (natural gas, electric, and telephone service)
- Consumption of non-renewable natural resources
- Increases in energy uses through increased water treatment and disposal and through operation of the water distribution system
- Inducement of substantial growth and concentration of population
- Earthquake ground shaking
- Loss or degradation of botanically sensitive habitat
- Regional air quality
- Noise
- Alteration of visual character

The City adopted a Mitigation Monitoring Plan, which includes mitigation measures and a monitoring plan that continues to apply to development in eastern Dublin. The City Council also adopted a Statement of Overriding Considerations (Resolution No. 53–93) in connection with their certification of the Eastern Dublin EIR.

East Dublin Properties Stage I Development Plan and Annexation Supplemental EIR (2002)

In 2002, the City approved an annexation, pre-zoning, and related PD-Planned Development District Stage I Development Plan for the East Dublin Properties area (same area later named "Fallon Village"). The East Dublin Properties project site consists of 1,132 acres within the EDSP area and includes in its entirety the 192-acre GH PacVest Property. An Initial Study (IS) was prepared to determine if the East Dublin Properties project required additional environmental review beyond that analyzed in the Eastern Dublin EIR. The IS found that many of the anticipated impacts of the East Dublin Properties project were adequately addressed in the Eastern Dublin EIR given: 1) the comprehensive planning for the development area; 2) the Eastern Dublin EIR's analysis of buildout under the EDSP land use designations and policies; 3) the long-term 20-30 year focus of the EDSP and the Eastern Dublin EIR; 4) the East Dublin Properties project was specifically contemplated in the Eastern Dublin EIR; and 5) the East Dublin Properties project consisted of the same land uses analyzed in the Eastern Dublin EIR.

Although the IS concluded that the Eastern Dublin EIR adequately analyzed most of the potential environmental impacts of the East Dublin Properties project, it also identified the potential for new significant impacts or substantially intensified impacts beyond those previously analyzed. As a result, the Eastern Dublin EIR was updated and supplemented by the Programmatic East Dublin Properties Stage I Development Plan and Annexation Supplemental EIR (2002 Supplemental EIR), which updated the analyses of agricultural resources, biology, air quality, noise, traffic and circulation, schools, and utilities.

In certifying the 2002 Supplemental EIR, the City adopted a Mitigation Measures and Monitoring Program and a Statement of Overriding Considerations (Resolution No. 40-02) for the following impacts:

- Exceedance of Bay Area Air Quality Management District air quality standards
- Cumulative loss/degradation of sensitive habitats
- Cumulative traffic operations at several intersections, including Dougherty Road/Dublin Boulevard, Hacienda Drive/Dublin Boulevard, and Fallon Road/Dublin Boulevard
- Freeway operations on Interstate 580 (I-580) and I-680

These mitigation measures continue to apply to development in eastern Dublin, including the project site.

Fallon Village Supplemental EIR (2005)

In 2005, the City of Dublin considered additional approvals for the 1,132-acre Fallon Village area. These requested approvals had three components:

1. Amendments to the General Plan and EDSP to include the entire 1,132-acre Fallon Village area and to reflect changes to the land use designations on the site;

2. Revisions to the 2002 approval of the Planned Development Rezone with a Stage I Development Plan to increase the number of dwellings units by 582 to a total of 3,108 units and increase non-residential uses from 1,081,725 square feet to 2,503,175 square feet of commercial and office uses; and
3. A Stage 2 Development Plan, Vesting Tentative Map, Development Agreement, and Lot Line Adjustment for the development of the northernly 488 acres of the Fallon Village area to allow 1,078 dwelling units, a school, parks, and associated use.

The City approved all three components of the Fallon Village project.

On December 6, 2005, the City certified the Final Supplemental Fallon Village Project Environmental Impact Report (2005 Supplemental EIR) that analyzed the new uses and revisions to the previous approvals for the Fallon Village project.

The 2005 Supplemental EIR identified potentially significant environmental impacts and related mitigation measures. The City adopted a Mitigation Measures and Monitoring Program for this approval that continues to apply to development in the Fallon Village area, including the project site. In addition, as part of Resolution No. 222-05, the City adopted a Statement of Overriding Considerations for the following significant and unavoidable impacts: traffic impact to Dublin Boulevard/Dougherty Road intersection, cumulative impacts to local roadways, consistent with the Alameda County Congestion Management Plan, demolition of the Fallon Ranch House and an increase in regional emissions beyond Bay Area Air Quality Management District (BAAQMD) thresholds.

The City Intended this 2005 Supplemental EIR to be used by state or regional agencies in their review of permits required for development in the Fallon Village area (e.g., California Department of Fish and Wildlife Streambed Alteration Agreements, California Endangered Species Act permits, Water Quality Certification or waiver by the Regional Water Quality Control Board under the Clean Water Act) (see, Draft 2005 Supplemental EIR, p. 27).

Proposed CEQA Analysis in this Document

The proposed project is generally based on the land use designations established by the City of Dublin's General Plan and EDSP. This Initial Study relies on the EDSP EIRs which collectively evaluated the development of more than 3,300 acres in the eastern part of the City.

The City prepared a CEQA analysis using the City's Initial Study Checklist, April 8, 2024, incorporated herein by reference, to assess whether any further environmental review is required for the proposed project. Pursuant to CEQA Guidelines Section 15164, the City determined, based on substantial evidence, that **no subsequent EIR or Negative Declaration is required for the project and an Addendum to the EDSP EIRs is the appropriate CEQA review** per the following:

No Subsequent Review is Required per CEQA Guidelines Section 15162

CEQA Guidelines Section 15162 identifies the conditions requiring subsequent environmental review. After a review of these conditions, the City determined that no subsequent EIR or Negative Declaration is required for this project. This is based on the following analysis:

a) *Are there substantial changes to the project involving new or more severe significant impacts?*

There are no substantial changes to the project as analyzed in the EDSP EIRs. The proposed project would maintain all existing land uses and conform to all development regulations except for an increase in floor area ratio (FAR) to 0.60 for the uses in the GC/CO parcels. As demonstrated in the Initial Study, the project does not include substantial changes to the project analyzed under the EDSP EIRs, will not result in additional significant impacts, and no additional mitigation measures are required.

b) *Are there substantial changes in the circumstances under which the project is undertaken involving new or more severe significant impacts?*

There are no substantial changes to the circumstances assumed in the EDSP EIRs that would result in new or substantially more severe significant impacts from the project than those previously identified in the EDSP EIRs. As described for each CEQA topic in the Initial Study, the existing environmental conditions or circumstances in and around the project site have not changed such that implementation of the proposed project would result in new significant environmental effects or a substantial increase in the severity of environmental effects identified in the EDSP EIRs. Although the EDSP area continues to develop around the project site, the site remains undeveloped grazing land. This is documented in the Initial Study.

c) *Is there new information of substantial importance, which was not known and could not have been known at the time of the previous EIR that shows the project will have a significant effect not addressed in the previous EIR; or previous effects are more severe than previously analyzed; or, previously infeasible mitigation measures are now feasible but the applicant declined to adopt them; or mitigation measures considerably different from those in the previous EIR would substantially reduce significant effects but the applicant declines to adopt them?*

As documented in the Initial Study, there is no new information showing a new or more severe significant effect beyond those identified in the EDSP EIRs. Similarly, the Initial Study documents found that there are no new or different feasible mitigation measures or alternatives to reduce significant effects of the project which the applicant declines to adopt. All previously adopted mitigations continue to apply to the project. The EDSP EIRs adequately describe the impacts and mitigations associated with the proposed development on portions of the EDSP area.

d) *If no subsequent EIR-level review is required, should a subsequent negative declaration be prepared?*

No subsequent EIR or Negative Declaration is required because there are no significant impacts of the project beyond those identified in the EDSP EIRs and no other standards for supplemental review under CEQA are met, as documented in the Initial Study.

Conclusion

This Addendum is prepared pursuant to CEQA Guidelines Section 15164 based on the attached Initial Study. Through the adoption of this Addendum and related Initial Study, the City determines that the proposed project does not require a subsequent or supplemental EIR or Negative Declaration under CEQA Section 21166 or CEQA Guidelines Sections 15162 and 15163. The City further determines that the EDSP EIRs adequately address the potential environmental impacts of the proposed project.

As provided in Section 15164 of the CEQA Guidelines, this Addendum need not be circulated for public review, but shall be considered with the prior environmental documents before making a decision on this project.

The Initial Study and EDSP EIRs are incorporated herein by reference and are available for public review during normal business hours, Monday through Friday, from 8:00 a.m. to 12:00 p.m. and 1:00 p.m. to 5:00 p.m., in the Community Development Department, Dublin City Hall, 100 Civic Plaza, Dublin CA.

Dublin Fallon 580 Project

Environmental Checklist/Initial Study

April 8, 2024
PLPA-2023-00000

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List of Tables

Dublin Fallon 580 Project
Initial Study

Introduction

This Initial Study has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) and assesses the potential environmental impacts of implementing the proposed project described below. The Initial Study consists of a completed environmental checklist and a brief explanation of the environmental topics addressed in the checklist.

Because the proposed project is generally based on the land use designations established by the City of Dublin General Plan and Eastern Dublin Specific Plan, this Initial Study relies on the Program Environmental Impact Report (EIR) prepared for the Eastern Dublin General Plan Amendment (Eastern Extended Planning Area) and Eastern Dublin Specific Plan (Eastern Dublin EIR), [1] which evaluated the development of over 3,300 acres in the eastern part of the City. The Eastern Dublin EIR was certified by the City in 1993. Two addenda to the Eastern Dublin EIR were subsequently adopted by the City.

In 2002, a Supplemental EIR (2002 SEIR)[2] to the Eastern Dublin EIR was prepared for the East Dublin Properties Stage 1 Development Plan and Annexation project (same area later named "Fallon Village"). The 2002 SEIR was certified by the City in 2002. The 2002 SEIR analyzed annexation of approximately 1,120 acres in eastern Dublin to the City and the Dublin San Ramon Services District, as well as a Prezoning and related PD-Planned Development District Stage 1 Development Plan. The land uses and intensities evaluated in the 2002 SEIR were consistent with both the Dublin General Plan and the Eastern Dublin Specific Plan and included development of up to 2,526 residential units, 581,090 square feet of commercial use, 840,360 square feet of industrial space, a junior high school, elementary school, parks and open space uses.

In 2005, the City prepared a Supplemental EIR for the Fallon Village Project (Fallon Village SEIR)[3] to amend the previous entitlements to include approximately 1,134 acres within the Eastern Dublin Specific Plan, revise the Stage 1 Development Plan (PD-1) to modify the existing land uses and roadway alignments established in 2002, and approve a Stage 2 Development Plan for

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[1] Dublin, City of. 1992. Final Environmental Impact Report, State Clearinghouse No. 91103064, Eastern Dublin General Plan Amendment and Specific Plan. December.

[2] Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

[3] Dublin, City of. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

the northern portion of the Fallon Village project area. The Fallon Village Project allowed for development of up to 3,108 residential units, up to 2,503,175 square feet of commercial, office, light industrial and mixed-use development, two elementary school sites, parks, utility extensions and open spaces within the 1,134-acre site. The City certified the Fallon Village SEIR in December 2005.

The subject of this Initial Study is the Dublin Fallon 580 project, which includes development of General Commercial/Campus Office (GC/CO), Open Space (OS), Parks/Public Recreation (P/PR), and Medium High (MH) Density Residential uses on approximately 192-acres in eastern Dublin within the Eastern Dublin Specific Plan area and Fallon Village project site.

Background & Project Description

Project Title

Dublin Fallon 580

Lead Agency Name and Address

City of Dublin
Community Development Department
100 Civic Plaza
Dublin, CA 94568

Contact Person and Phone Number

Crystal De Castro
Senior Planner
Phone: 925-833-6610
crystal.decastro@dublin.ca.gov

Project Location

The approximately 192-acre project site is located in the eastern portion of Dublin (Assessor's Parcel Numbers [APN]: 905-0001-006-03; 985-0027-002; 985-0027-005; 985-0027-004). The project site is located east of Fallon Road and north of Interstate 580 (I-580). Croak Road divides the project site from north to south and the future Dublin Boulevard Extension Project bisects the project site from west to east. Figures 1 and 2 provide the regional location and aerial photograph of the project site and surrounding land uses, respectively.

Project Applicant's/Sponsor's Name and Address

GH PACVEST, LLC
2800 Post Oak Blvd., Suite 5115
Houston, TX 77056

General Plan Designation

Medium High Density Residential (13.7 acres), General Commercial/Campus Office (126.3 acres), Parks/Public Recreation (P/PR) - (7.2 acres), Open Space (44.9 acres), and Public/Semi-Public (2.5 acres)

Zoning

Planned Development (PD) Ordinance No. 32-05 and Ordinance No. 13-08

Project Description

Project Background and Prior Environmental Review

The project is included in three previous CEQA documents, as noted below. Collectively, these three environmental review documents are referred to as the "EDSP EIRs" or "previous CEQA findings."

Eastern Dublin General Plan Amendment and Eastern Dublin Specific Plan Program EIR (State Clearinghouse No. 1991103064). A Program EIR for the Eastern Dublin General Plan Amendment (Eastern Extended Planning Area) and the Eastern Dublin Specific Plan (EDSP) was certified by the City Council in 1993 by Resolution No. 51-93. This document and its related addenda collectively are referred to as the Eastern Dublin EIR. The Eastern Dublin EIR evaluated the following impacts:

- Land Use
- Population, Employment and Housing
- Traffic and Circulation
- Community Services and Facilities
- Sewer, Water and Storm Drainage
- Soils, Geology and Seismicity
- Biological Resources
- Visual Resources
- Cultural Resources
- Noise
- Air Quality

- Fiscal Considerations

The City adopted a Statement of Overriding Considerations (Resolution No. 53–93) for the following significant and unavoidable impacts:

- Cumulative loss of agriculture and open space land
- Cumulative traffic
- Extension of certain community facilities (natural gas, electric and telephone service)
- Consumption of non-renewable natural resources
- Increases in energy uses through increased water treatment and disposal and through operation of the water distribution system
- Inducement of substantial growth and concentration of population
- Earthquake ground shaking
- Loss or degradation of botanically sensitive habitat
- Regional air quality
- Noise
- Alteration of visual character

The Eastern Dublin EIR was challenged in court and the court upheld the adequacy of the EIR. The City adopted two addenda documents to the Eastern Dublin EIR as noted above.

<u>East Dublin Properties Supplemental EIR (State Clearinghouse No. 2001052114)</u>. In 2001, the Eastern Dublin Property Owners (EDPO) requested annexation, Prezoning, and related approvals for a 1,120-acre area within eastern Dublin. The City prepared a Supplemental EIR (2002 SEIR) to the Eastern Dublin EIR to evaluate potential development within this area. The 2002 SEIR was certified by the City on April 2, 2002, by City Council Resolution No. 40-02. The 2002 SEIR analyzed annexation of the property to the City of Dublin and Dublin San Ramon Services District (DSRSD), amendments to the Dublin General Plan and Eastern Dublin Specific Plan, a Planned Development (PD) Prezoning, and Stage 1 Development Plan. Following certification of the 2002 SEIR, the City approved a PD Prezoning with related Stage 1 and 2 Development Plans for the site.

The 2002 SEIR analyzed the environmental impacts associated with development of up to 2,526 residential units, 581,090 square feet of commercial use, 840,360 square feet of industrial space, a junior high school, elementary school, parks and open space uses (the EDPO Project). Based on an Initial Study prepared in 2001, the 2002 SEIR provided updated analyses for agricultural resources, biological resources, air quality, noise, traffic and circulation, schools, and utilities. The City adopted a Statement of Overriding Considerations (Resolution No. 40-02) for the following impacts:

- Exceedance of Bay Area Air Quality Management District air quality standards

- Cumulative loss/degradation of sensitive habitats
- Cumulative traffic operations at several intersections, including Dougherty Road/Dublin Boulevard, Hacienda Drive/Dublin Boulevard, and Fallon Road/Dublin Boulevard
- Freeway operations on Interstate 580 (I-580) and I-680

Fallon Village Project Supplemental EIR (State Clearinghouse No. 2005062010). A Supplemental EIR was prepared to evaluate the environmental impacts associated with amendments to the previous entitlements to include the entire 1,132-acre site within the Eastern Dublin Specific Plan area. The EIR also evaluated the impacts associated with modifying the land uses and roadway alignments established in the 2002 Stage 1 Development Plan (PD-1) to allow for future development of up to 3,108 residential units, up to 2,503,175 square feet of commercial, office, light industrial, and mixed-use development, two elementary school sites, parks and open spaces.

The Fallon Village SEIR evaluated the following impacts:

- Land Use and Planning
- Traffic and Transportation
- Community Services and Facilities
- Sewer, Water, and Storm Drainage
- Soils, Geology, and Seismicity
- Biological Resources
- Visual Resources
- Cultural Resources
- Noise
- Air Quality
- Hazards and Hazardous Materials
- Parks and Recreation

The Fallon Village SEIR identified significant and unavoidable impacts associated with the traffic impacts at the Dublin/Dougherty intersection, cumulative impacts to freeway operations on Interstate 580 (I-580) and I-680, traffic levels exceeding County monitoring standards, demolition of the historic Fallon Ranch House and increase in regional air quality emissions. The City adopted a Statement of Overriding Considerations (Resolution No. 40-02) for these impacts.

Proposed Project

The proposed project consists of a General Plan/Specific Plan Amendment, Stage 1 Planned Development Amendment, Stage 2 Development Plan for the residential parcels, Vesting Tentative Tract Maps, and Development Agreement.

The General Plan/Specific Plan Amendment would eliminate approximately 2.5-acres of designated Public/Semi-Public (P/SP) land use on the project site and amend the land use designation on approximately 42.6-acres from Open Space (OS) to Parks/Public Recreation (P/PR). Implementation of the proposed project would result in the subdivision of the approximately 192-acre site into 11 parcels to accommodate proposed residential, commercial/office, park, and open space uses. A total of 238 residential units are proposed within approximately 13.7-acres designated as Medium High (MH) Density Residential, up to 3,299,670-square feet of commercial/office uses is proposed on approximately 126.3-acres designated as General Commercial/Campus Office (GC/CO), approximately 49.8-acres of parkland is designated as P/PR, and approximately 2.3-acres of OS is designated in the General Pland and EDSP, as shown below in Table A and Figure 3. Additionally, the project applicant has submitted two Small Lot Vesting Tentative Tract Maps (VTTMs) for development of the MH Density Residential with a Stage 2 Development Plan.

Table A: Proposed Development

Parcel Number	Use	Number of Units/Building Size	Gross Acreage[1]	Density (dwelling units/acre)/FAR
1	General Commercial/Campus Office	1,944,780 square feet	74.41	0.60
2	General Commercial/Campus Office	455,550 square feet	17.43	0.60
3	General Commercial/Campus Office	526,902 square feet	20.16	0.60
4	Parks/ Public Recreation (Natural Community Park)	NA	33.40	NA
5	Parks/ Public Recreation (Community Park)	NA	7.22	NA
6	Parks/ Public Recreation (Natural Community Park)	NA	9.19	NA
7	Medium High Density Residential	128 residential units	6.50	19.7
8	Medium High Density Residential	110 residential units	7.20	15.3
9	General Commercial/Campus Office	321,473 square feet	12.30	0.60
10	Open Space	NA	2.28	NA
11	General Commercial/Campus Office	50,965 square feet	1.95	NA
TOTAL		238 residential units 3,299,670 square feet	192.04	

Source: MacKay & Somps (2024)
NA – Not Applicable

In 2005, the City approved the Fallon Village PD-1 and certified the SEIR, establishing the land uses and intensities for the Fallon Village properties. The proposed project would retain the proposed land use designations for the Dublin Fallon property as identified in the General Plan, EDSP and PD-1 with some minor revisions to the proposed acreages and land use designations, as shown in Table B below. Figure 4 illustrates the existing and proposed land use plan.

Table B: Proposed Uses Compared to Existing Approved Uses

	Proposed Uses			Existing Approved Stage 1 PD and Eastern Dublin Specific Plan			
Land Use	**Gross Acreage[3] (acre)**	**Number of Units/ Building Size**	**Density (dwelling units/acre)/ FAR**	**Gross Acreage[3] (acre)**	**Maximum Number of Units/ Building Size**	**Density Range/ FAR (per EDSP)**	**Density Range/ FAR (per Stage 1 PD)**
Medium High (MH) Density Residential	13.70	238 units	17.4 du/acre	13.5	238 units	14.1-25.0 du/acre[2]	14.1-25.0 du/acre
General Commercial/Campus Office (GC/CO)	126.25	3,299,670 square feet	0.2 - 0.6 FAR	126.4	1,522,161 square feet	0.2 - 0.8FAR[2]	0.2 - 0.8 FAR
Parks/Public Recreation (P/PR) - Community Park	7.22	-	-	7.2	-	-	-
Parks/Public Recreation (P/PR) – Natural Community Park	42.59	-	-	0	-	-	-
Open Space (OS)	2.28	-	-	44.9	-	-	-
Public Semi-Public[1] (P/SP)	0	-	-	2.5	-	-	-
Total	**192.04**			**190.4[1]**			

Source: MacKay & Somps (2024)
[1] Public/Semi-Public is a floating land use. Final location to be determined at time of PD-2 approval and acreage will be deducted from affected land use. The Public/Semi-Public site is designated in the 2023-2031Housing Element to yield 74 low-income units
[2] Development projections in the EDSP do not represent maximum development potential, but assume lower, more realistic, development potential based on historical evidence of similar development in other communities. The EDSP assumed a density of 20 du/acre for Medium High Density Residential and an FAR of .28 for General Commercial/Campus Office.
[3] Acreages from prior General Plan, Specific Plan, and PD1 approvals were based on assumed boundary limits. Proposed Acreages reflected in this application have been updated to match resolved boundary survey data dated January 2017. [Note the discrepancy in total acreages]

Residential

The proposed project would consist of the development of 238 residential townhome units consistent with the General Plan MH Density Residential land use designation and a Planned Development Stage 2 Development Plan for the two residential parcels (Parcel 7 and Parcel 8). Table C shows the existing and proposed residential land uses proposed with the Small Lot VTTMs. Figure 5 shows the proposed site plan for the residential portion of the proposed project.

Table C: Proposed Residential Uses Compared to Existing Approved Uses

	Proposed Stage 2 PD			Existing Approved Stage 1 PD and Eastern Dublin Specific Plan			
Land Use	**Gross Acreage[1]**	**Number of Units**	**Density (dwelling units/acre)/ FAR**	**Gross Acreage[1]**	**Maximum Number of Units/ Building Size**	**Density Range/Max FAR (per EDSP)**	**Density Range/Max FAR (per Stage 1 PD)**
Parcel 7 – Tract 8666 Medium High (MH) Density Residential	6.5	128	19.7	6.5	130	14.1-25.0 du/acre	14.1-25.0 du/acre
Parcel 8 – Tract 8667 Medium High (MH) Density Residential	7.2	110	15.3	7.0	108	14.1-25.0 du/acre	14.1-25.0 du/acre
Total	**13.7**	**238**		**13.5**	**238**		

Source: MacKay & Somps (2024)
[1] Acreages from prior General Plan, Specific Plan, and PD1 approvals were based on assumed boundary limits. Proposed Acreages reflected in this application have been updated to match resolved boundary survey data dated January 2017. [Note the discrepancy in total acreages]

Proposed development would consist of three-story (maximum 40 feet in height) townhome units with front doors facing the primary private streets and facing outward toward surrounding uses, as well as front doors located along common landscape paseos. Each unit would have a private two-car garage, accessible from a private alley. Balconies and decks would provide private outdoor space for each unit.

Dublin Municipal Code (DMC) Section 8.68.030 requires the project to construct 12.5 percent of the 238 units as affordable units. Therefore, 30 affordable units are required for this project under the DMC. Pursuant to Section 8.68.040 A, the project proposes to pay a fee in lieu of constructing 40 percent of the required affordable units. Therefore, 18 affordable units would be constructed on the project site. The allocation of income levels for the 18 affordable units would be seven units for low-income households and 11 units for moderate-income households as required by the DMC.

A total of 703 parking spaces (375 parking spaces on Parcel 7 and 328 parking spaces on Parcel 8) would be provided to accommodate the proposed residential development. Of these, 476 parking spaces would be residential in-garage spaces and 228 would be guest parking located primarily along the southern boundary of the two residential parcels with guest parking also dispersed throughout each neighborhood.

General Commercial/Campus Office

The proposed project would include development of general commercial and campus office uses consistent with the GC/CO designation and PD zoning on the five GC/CO parcels (Parcels 1, 2, 3, 9, and 11), totaling approximately 126.3-acres. Consistent with the PD-GC/CO zoning, these parcels could accommodate a range of community and regional serving retail, service and office use, including a compatible mixture of these uses. Future development of these parcels would be consistent with the City's development standards, including minimum lot area, required setbacks, landscape buffers and a maximum height limit of 45 feet.[4]

As shown in Table B, the project would include a 0.6 floor area ratio (FAR) for the GC/CO portion of the project site, which is consistent with the FAR allowed in the Fallon Village PD-1 and Eastern Dublin Specific Plan and an increase from the 0.28 FAR assumed under the Eastern Dublin Specific Plan and analyzed in the EDSP EIRs. Based on the 0.6 FAR, the proposed project would result in the development of up to 3,299,670 square feet of general commercial/campus office development compared to the 1,522,161 square feet of development anticipated in the EDSP and evaluated in the EDSP EIRs. Although the FAR limit has been increased, the project applicant has proposed a mix of limited light manufacturing, hotel, retail, and office uses for the GC/CO parcels that is compatible with the surrounding area and falls within the anticipated development intensity (e.g., traffic, air emissions) anticipated in the EDSP EIRs.

Access, Circulation, and Parking

Primary access to Parcel 7 would be via a planned private street connection into the existing Jordan Ranch development at the west and east ends of Pandora Way, respectively. The primary vehicular connection to Pandora Way provides access to nearby arterial roadways via Central Parkway west to Fallon Road and via the planned extension of Central Parkway east to Croak Road (constructed as part of the Francis Ranch project) and on to the future Dublin Boulevard Extension. Pedestrian walkways and bike paths would connect to the adjacent Jordan Ranch project and a landscaped green corridor with an 8-foot multi-use walkway is proposed along the northwest edge of Parcel 7, connecting directly to a future 7.2-acre Community Park immediately to the west. Note: The primary connection to the Community Park will be from Central Parkway, just west of Cottonwood Creek School. Access from Parcel 7 would be secondary access via private streets and public access easements. In addition, due to site topography, Parcel 7 would require the installation of perimeter retaining walls to conform with the existing and proposed elevations surrounding the site.

Primary vehicular access to Parcel 8 would be provided via an east/west private street off of Croak Road, running along the southern edge of Parcel 8. The proposed grades would allow for potential future extension east into the adjacent Righetti property. Pedestrian walkways would connect to a proposed urban pocket park at the north end of Parcel 8 at a proposed EVA fire access with pedestrian connection also provided to the Francis Ranch community to the north, and to Central Parkway through the urban pocket park. Due to site topography, Parcel 8 would require the installation of perimeter retaining walls to conform with the existing and proposed elevations surrounding the site.

Primary access to the GC/CO parcels would be provided by the future Dublin Boulevard Extension. A signalized intersection would provide access to Parcels 1 and 2. Access to Parcels 9 and 3 would be via a right-in/right-out only access point. In addition, a private roadway would

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[4] The maximum height for General Commercial and Campus Office uses is 45 feet. If the principal structure is within 50 feet of a residential structure, the maximum height limit is 35 feet.

be provided off Fallon Road, adding a fourth leg to the existing Fallon Gateway/Fallon Road intersection. Croak Road north of Dublin Boulevard would be widened and provide additional access to the GC/CO parcels. The conceptual circulation plan is shown in Figure 6.

Open Space and Landscaping

The project would include dedication of land for a future 7.2-acre Community Park and 42.6 acres for a Natural Community Park. As outlined in the 2022 Parks and Recreation Master Plan, the Community Park amenities include picnic areas with tables, play equipment, restrooms, and three soccer fields. The conversion of 42.6 acres of OS to P/RP would help address the City's parkland deficit by providing land for a future Natural Community Park designed for low impact use and maintenance, with hiking and walking trails.

The Planned Development Stage 2 Development Plan includes landscape design guidelines and a planting palette to create a unified community aesthetic. The landscape theme would feature vibrant, blossoming plants and evergreens that complement the proposed architecture and encourage pedestrian access and connectivity within the residential development and to adjacent neighborhoods. The entrance to each residential parcel would have its own character, while still fitting in with the surrounding community. Internal streets and sidewalks would be planted with various street trees, placed to maximize solar exposure. Low-growing groundcover would enhance pedestrian connections to the public sidewalks. An urban pocket park is proposed at the north end of Parcel 8 at the EVA and would include decorative hardscape area with surrounding landscape and amenities. This will be designed in conjunction with the location of the connection to Central Parkway and Francis Ranch to the north.

The preliminary landscape plan for the commercial areas will be included in the future Stage 2 Development Plan for those areas.

Utilities and Infrastructure

The project site is currently served by overhead electric and communication lines and by sanitary sewer septic systems and on-site well water. Existing and proposed utility connections are discussed below and shown in Figure 7.

Water. Water service would be provided by the Dublin San Ramon Services District (DSRSD). The proposed project would include the installation of new water lines on the site that would connect to the proposed potable water and recycled water (if available) mains within the future Dublin Boulevard Extension and Croak Road and the existing water main at Pandora Way.

Wastewater. Wastewater service would be provided by DSRSD. New sanitary sewer lines would be installed within the project site and would tie into proposed sanitary sewer mains within the future Dublin Boulevard Extension, the sanitary sewer main along Croak Road (proposed with the Francis Ranch project) and the existing sanitary sewer main at Pandora Way.

Stormwater. The project site is currently undeveloped and, therefore, contains minimal impervious surfaces. The proposed project would include bioretention facilities and storm drains on each MH and GC/CO parcel for stormwater quality control. Proposed bioretention and storm drain facilities would discharge to existing/proposed storm drainpipes.

Hydromodification vaults would be included on-site to provide flow duration controls for the project. Proposed storm drainage facilities would conform to the Alameda County C.3 Stormwater Technical guidelines and requirements.

Electricity and Gas. Electricity and gas service would be provided to the project site by the Pacific Gas & Electric Company (PG&E). The proposed project would include connections to proposed electricity and natural gas lines within the future Dublin Boulevard Extension and Croak Road and existing lines within Pandora Way.

Grading and Construction

Cut and fill from project grading would be balanced on-site. It is anticipated that the maximum depth of excavation for building pads would be approximately 45 feet and the maximum depth of utility trenching would be approximately 15 feet.

If approved, construction of the proposed project would begin with the residential development on Parcel 7, followed by the residential development on Parcel 8 and concluding with the development of the GC/CO parcels, Natural Community Park, and the Community Park. The proposed project would include phased construction, which would consist of site preparation and grading, building construction and asphalt paving/landscaping. Overall, construction of the proposed project is anticipated to last approximately ten years, with development of the GC/CO pending the completion of the Dublin Boulevard Extension.

Project Entitlements

The City is the CEQA Lead Agency for the proposed project and will consider the environmental impacts of the proposed project as part of the project approval. Permits and approvals required for the proposed project include a General Plan/Specific Plan Amendment to eliminate the P/SP land use designation and amend the land use designation on 42.6 acres from OS to P/PR, a Planned Development Zoning with a Stage 1 Development Plan amendment, a Stage 2 Development Plan for the MH Density Residential uses only, a Large Lot VTTM (Tract 8663), two Small Lot VTTMs for development of the MH Density Residential uses (Tracts 8666 and 8667), and a Development Agreement. In addition, subsequent Site Development Review Permits would be required for the project. Ministerial actions would be required for implementation of the project including issuance/approval of grading permits, encroachment permits, improvements plans, and building permits.

Environmental Setting

Project Site and Existing Facilities

The approximately 192-acre project site is located in the eastern portion of the City of Dublin. The site is bounded by Jordan Ranch and Francis Ranch[5] to the north, the vacant Righetti property [6] to the east, Fallon Road and the existing Fallon Gateway shopping center to the west and Croak Road and Interstate 580 (I-580) to the south. The project site is vacant and is currently used for intermittent cattle grazing activities. The future Dublin Boulevard Extension[7] bisects the project site from west to east. Croak Road bisects the site from north to south. The topography of the project site consists of nearly level ground along the southern portion of the site adjacent to I-580 and Fallon Road, with rolling hills occurring along the northern portion. Hillslopes range from 346 feet to 480 feet above sea level.

The project site supports five habitat types consisting of non-native annual grassland, seasonal wetland/pond, drainages, emergent marsh and riparian woodlands. Rolling hills, located in the northern portion of the project site, contain ephemeral drainages which capture and drain the hills into a more gradually sloped valley floor. An extension of an unnamed intermittent drainage flows through the northwestern corner of the site adjacent to Croak Road. A roadside ditch along Croak Road (located just outside the western boundary of the site) is characterized by cattails (*Typha latifolia*), willow trees (*Salix* spp.), and hydrophytic foliage. During wet seasons this ditch overflows onto the project site creating a large complex of perennial marsh and seasonal wetland depression, which provide suitable habitat to many wildlife species. The southern portion of the project site contains several small wetlands intermingled within the grassland. An abandoned quarry pond in the northeast portion of the project site supports a seasonal pond feature and seasonal wetlands bordered by a small band of riparian woodland.

Characteristic grassland vegetation across the project site includes wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum* spp. *leporinum*), Italian ryegrass (*Festuca perennis*), black mustard (*Brassica nigra*), yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), filaree (*Erodium* spp.), bur clover (*Medicago polymorpha*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), rabbit's foot grass (*Polypogon monspeliensis*), cattail (*Typha* spp.), Baltic rush (*Juncus balticus*), flatsedge (*Cyperuss eragrostis*), curly dock (*Rumex crispus*), and common spike rush (*Eleocharis palustris*). Common shrubs and trees include coyote brush (*Baccharis pilularis*), cottonwood (*Populus fremontii*), coast live oak (*Quercus agrifolia*), Peruvian

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5 The Francis Ranch project consists of development of the 165.5-acre site with a 573-unit residential project within six neighborhoods, two neighborhood parks 11.5 acres, and a two-acre Semi-Public Site

6 Current plans for the Righetti property would include development of up to 96 residential units, up to 372,350 square feet of industrial use and up to 321,125 square feet of campus office/light industrial uses.

7 The Dublin Boulevard Extension, which is being planned and implemented by the City of Dublin, would include a new roadway extension between the eastern terminus of Dublin Boulevard in the City of Dublin and the western terminus of North Canyons Parkway in the City of Livermore, traversing land in Dublin and Alameda County before terminating at the western border of Livermore.

peppertree (*Schinus molle*), eucalyptus (*Eucalyptus* spp.), and willow trees. Several ornamental trees are located within the far east-central portion of the project site, which was once developed with a homestead and related farming / ranch out-buildings.

Environmental Checklist

Environmental Factors Potentially Affected by the Project

Although the proposed project could have a significant effect on the environment, because all of the potentially significant effects for the environmental factors listed below have been analyzed adequately in earlier EIRs or other environmental review documents pursuant to applicable standards, and have been avoided or mitigated pursuant to earlier EIRs or other environmental review documents, including revisions or mitigation measures that are imposed upon the proposed project, there are no significant environmental impacts as a result of the proposed project.

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

Instructions

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question (see Source List, attached). A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. “Potentially Significant Impact” is appropriate if there is substantial evidence that any effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. “Negative Declaration: Less Than Significant With Mitigation Incorporated”: applies where incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact.” The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.
5. “Earlier Analysis” may be used where, pursuant to the tiering, program EIR, or other CEQA process, one or more effects have been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case a discussion should identify the following on attached sheets:
    a. Earlier analysis used. Identify earlier analyses and state where they are available for review.
    b. Impacts adequately addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
    c. Mitigation measures. For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures, which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.
6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.
7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.
8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.
9. The explanation of each issue should identify:
    - The significance criteria or threshold, if any, used to evaluate each question; and
    - The mitigation measure identified, if any, to reduce the impact to less than

significant

10. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, has consultation begun?

    Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Determination

On the basis of this initial evaluation:

I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION 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 in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	
I find that the 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 or a potentially significant unless mitigated impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	
I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.	X

CITY OF DUBLIN

___________________________________ _______________________________

Crystal De Castro, Senior Planner Date

Explanation of Environmental Checklist Responses

Aesthetics

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
1.	**AESTHETICS. Would the project:**			
a)	Have a substantial adverse effect on a scenic vista?			X
b)	Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?			X
c)	Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X

Environmental Setting

The project site is located within the southernmost portion of the Eastern Dublin area. As described in the Eastern Dublin EIR, the southern portion of the Eastern Dublin area is flat, open, and covered with grasslands and agricultural field crops. The northern portions include steeper foothills with canyons settled with farms and ranchettes. Much of the Eastern Dublin area has since been developed consistent with the land uses identified in the EDSP and subsequent planning approvals.

The project site is vacant and is currently used for intermittent cattle grazing activities. The future Dublin Boulevard Extension bisects the project site from west to east. The future Croak Road extension bisects the site from north to south.

The topography of the project site consists of nearly level ground along the southern boundary adjacent to Croak Road, with rolling hills occurring along the northern boundary. Hillslopes range 346 feet to 480 feet above sea level.

No designated State scenic highways are located near the project site. However, I-580 located just south of the project site, is an eligible State scenic highway and a designated Alameda County scenic route. The project site is visible from both eastbound and westbound I-580.

Vehicle head and taillights on area roadways, and lighting associated with I-580, are the existing sources of light and glare in the project area.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to standardized tract development, obscuring distinctive natural features, alteration of hillsides, ridges, and watercourses, alteration of Dublin's visual identity as a freestanding city, scenic vistas, and scenic routes. All of these impacts were determined to be less than significant with implementation of mitigation measures identified in the Eastern Dublin EIR. The Eastern Dublin EIR determined that impacts associated with the alteration of the rural/open space visual character of the project area and alteration of the visual character of the flatlands would be significant and unavoidable. The following mitigation measures would apply to the proposed project:

> **MM 3.8/1.0** Establish a visually distinctive community which preserves the character of the natural landscape by protecting key visual elements and maintaining views from major travel corridors and public spaces.
>
> **MM 3.8/2.0** Implement the land use plan for the Project site which emphasizes retention of the predominant natural features, such as ridgelines and watercourses, and sense of openness that characterize eastern Dublin.
>
> **MM 3.8/3.0** Preserve the natural open beauty of the hills and other important visual resources, such as creeks and major stands of vegetation.
>
> **MM 3.8/4.0** Visual impacts of extensive grading shall be reduced by sensitive engineering design, by using gradual transition from graded areas to natural slopes and by revegetation.
>
> **MM 3.8/4.1** Alterations of existing natural contours shall be minimized. Grading shall maintain the natural topography as much as possible. Grading beyond actual development areas shall be for remedial purposes only.
>
> **MM 3.8/4.4** Graded slopes shall be re-contoured to resemble existing landforms in the immediate area. Cut and graded slopes shall be revegetated with native vegetation suitable to hillside environments.
>
> **MM 3.8/4.5** The height of cut and fill slopes shall be minimized to the greatest degree possible. Grades for cut and fill slopes should be 3:1 or less whenever feasible.

MM 3.8/5.1 Structures shall not be located where they would obstruct scenic views or appear to extend above an identified scenic ridgetop (i.e., silhouetted) when viewed from designated scenic routes.

MM 3.8/6.0 Tassajara Creek and other stream corridors are visual features that have special scenic value for the planning area. The visual character of these corridors should be protected from unnecessary alteration or disturbance and adjoining development should be sites to maintain visual access to the stream corridors.

MM 3.8/7.0 Preserve views of designated open space areas.

MM 3.8/8.1 The City should require that projects with potential impacts on scenic corridors to submit a detailed visual analysis with development project application. Applicants will be required to submit graphic simulations and/or section drawn from affected travel corridors through the parcel in question, representing typical views of the parcel from scenic routes. The graphic depiction of the location and massing of the structure and associated landscaping can then be used to adjust the project design to minimize the visual impacts.

2002 SEIR

The effects of the Eastern Dublin Property Owners (EDPO) Project on visual resources were addressed in the Initial Study prepared as part of the 2002 SEIR. The Initial Study determined that the EDPO Project would have no impacts beyond those identified in the Eastern Dublin EIR because the development footprint and intensity of development was the same as previously analyzed.

Fallon Village SEIR

No additional impacts or mitigation were identified in the Fallon Village SEIR.

Project Impacts and Mitigation Measures

(a) Scenic vistas, views

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Aesthetic components of a scenic vista generally include: 1) scenic quality; 2) sensitivity level; and 3) view access. The City of Dublin General Plan identifies the visually sensitive ridgelines located in the open space areas in the Western and Eastern Extended Planning Areas of the City as scenic resources. I-580 provides scenic views of these ridgeline areas and is an Alameda County-designated scenic route.

Implementation of the proposed project would subdivide the 192-acre site into eleven parcels to accommodate the proposed development of up to 238 residential units on two residential parcels (Parcel 7 and Parcel 8). The residential units would consist of three-story (maximum 40 feet in height) townhomes with front doors facing the primary private streets and facing outward toward surrounding uses, as well as front doors located along common landscape paseos. The project applicant has submitted two Small Lot Vesting Tentative Tract Maps (VTTMs) for development of the MH Density Residential uses to accommodate the proposed project.

The proposed project would also include up to 3,299,670 square feet of general commercial/campus office uses. The general commercial/campus office uses would be consistent with the GC/CO land use designation and PD zoning on the five GC/CO parcels (Parcels 1, 2, 3, 9 and 11), totaling approximately 126.3-acres. Consistent with the PD-GC/CO zoning, these parcels could accommodate a range of community and regional serving retail, service and office uses, including a compatible mixture of these uses. Future development of these parcels would be consistent with the City's development standards, including minimum lot area, required setbacks, landscape buffers and a maximum height limit of 45 feet.[8]

Additionally, the project would include 7.2-acres for a Community Park, 2.3-acres of Open Space, and 42.6-acres for a Natural Community Park.

The proposed development would be visible from public vantage points, including Collier Canyon Road, the future Dublin Boulevard Extension, and I-580, which is an eligible State scenic highway and a designated Alameda County scenic route.

The Eastern Dublin EIR contains Figure 3.8-H, Visually Sensitive Ridgelands, depicting portions of the Eastern Dublin area that contains ridges and ridgelands which are considered to be visually sensitive. As identified in the Eastern Dublin EIR, the lower and hillside areas located closer to I-580 with topographic elevations generally ranging between approximately 460 and 480 feet above sea level are designated as "Visually Sensitive Ridgelands-restricted development." As described above, the Eastern Dublin EIR determined that development associated with implementation of the EDSP would alter the character of existing scenic vistas and obscure important sightlines. These impacts were determined to be less than significant with implementation of mitigation measures identified in the Eastern Dublin EIR and listed above.

Consistent with the findings in the Fallon Village SEIR, due to the elevation and existing topography of the project site, proposed development would continue to limit views of the primary ridgeline and affect scenic vistas from I-580 and other public vantage points. Although the density of the proposed general commercial/campus office uses would be greater than previously analyzed in the EDSP EIRs, the general type and massing of buildings would not be significantly different than analyzed in the EDSP EIRs. However, consistent with the findings of the Fallon Village SEIR, proposed development would continue to limit views of the primary ridgeline, designated as scenic resource in the Eastern Dublin EIR.

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8 The maximum height for General Commercial and Campus Office uses is 45 feet. If the principal structure is within 50 feet of a residential structure, the maximum height limit is 35 feet.

Consistent with Mitigation Measure 3.8/5.0, identified in the Eastern Dublin EIR, the proposed project would be required to undergo site-specific design review to ensure the project is consistent with City of Dublin design standards, property development regulations and performance standards related to aesthetics and to lessen the severity of visual changes resulting from the proposed project. Further, the proposed project would be required to implement other Mitigation Measures (MM 3.8/3.0, MM 3.8/4.0, MM 3.8/4.1, MM 3.8/4.4, MM 3.8/4.5, MM 3.8/5.1) identified in the Eastern Dublin EIR, which include design features to minimize visual impacts (e.g., sensitive grading, sensitive engineering design, revegetation). With implementation of the aforementioned Mitigation Measures, no new impacts or substantially more severe significant impacts to scenic vistas and views, beyond those identified in the EDSP EIRs, would occur.

(b) Scenic resources

As described above, I-580 located just south of the project site, is an eligible State scenic highway and an Alameda County designated scenic route. The I-580 scenic corridor is defined as the area which is both within 3,500 feet on each side of the centerline of I-580 and visible from I-580. Per City of Dublin General Plan policies, design review would be required for all projects visible from a designated scenic route in order to enhance a positive image of Dublin as seen by through travelers.

As described in Section 1.a, the proposed project would alter views from I-580 and result in a change in visual conditions, as described in the EDSP EIRs. However, development of the proposed project would not substantially damage scenic resources, such as trees, rock outcroppings, or historic buildings, as these resources are not currently present on the project site. Further, the mitigation measures identified in the EDSP EIRs and the visual policies in the City of Dublin General Plan would apply to the proposed project, and the proposed project would be required to undergo site-specific design review to ensure the project is consistent with City of Dublin design standards. With implementation of the aforementioned Mitigation Measures, no new impacts or substantially more severe significant impacts related to scenic resources, beyond those identified in the EDSP EIRs, would occur.

(c) Substantially degrade the visual character of public views of the site or surrounding area

Development of the proposed project would alter the existing visual character of the project area and vicinity by introducing residential, community park, and general commercial/campus office uses onto the existing largely undeveloped parcel. A total of 238 residential units are proposed within approximately 13.7 acres designated MH Density Residential in the General Plan and EDSP. Residential development would be three stories high, with a maximum height of up to 40 feet. Approximately 3,299,670 square feet of general commercial/campus office use is proposed on approximately 126.3-acres. Future development of these parcels would be consistent with the City's development standards, including minimum lot area, required setbacks, landscape buffers and a maximum height limit of 45 feet. Additionally, the project would include 7.2-acres for a Community Park, 2.3-acres for Open Space, and 42.6-acres for a Natural Community Park.

As outlined in the Project Description, the project proposes a 0.6 floor area ratio (FAR) for the GC/CO parcels, which is an increase from the FAR established for these uses in the EDSP EIRs. However, the proposed project would include establishment of residential and commercial design guidelines to regulate the design of the proposed uses within the project site. Design guidelines for the proposed residential development include variation in roof forms and heights, setbacks for the upper floors, variation in materials, and earth-toned colors to minimize the visual scale of proposed structures and to provide visual interest. Landscaping is proposed to promote a cohesive landscape within the residential areas of the project site, including flowering plant material that complements the site architecture, provides seasonal color, and connects adjacent uses and activities. Similar guidelines would need to be established for the proposed commercial areas of the project site as part of the subsequent approvals. Implementation of these design elements would further mitigate the visual impact of the building heights and massing.

As described above, the Eastern Dublin EIR determined that visual impacts associated with the alteration of the rural/open space character of the project area and alteration of the visual character of the flatlands would be significant and unavoidable. Other impacts to visual resources, including impacts to distinctive natural features, scenic vistas, and scenic routes, and alteration of hillsides, ridges, and watercourses were determined to be less than significant with implementation of mitigation measures identified in the Eastern Dublin EIR. Although the density of the proposed general commercial/campus office uses would be greater than previously analyzed in the EDSP EIRs, the general type and massing of buildings would not be significantly different. Consistent with the findings of the Eastern Dublin EIR, the proposed project would alter the visual character of the project site, which would be converted from rural development to urban development, with general commercial/campus office uses and residential buildings. Because the general type and massing of the proposed buildings would not be significantly different than those considered in the EDSP EIRs, the difference in density would not substantially increase the severity of this previously identified impact. Therefore, changes to the existing visual environment would be the same as described in the EDSP EIRs.

The mitigation measures identified in the Eastern Dublin EIR and the visual policies in the City of Dublin General Plan would apply to the proposed project. In addition, the proposed project would be required to undergo site-specific design review to ensure the project is consistent with City of Dublin design standards, property development regulations and performance standards related to aesthetics and to lessen the severity of visual changes resulting from the proposed project. With implementation of the aforementioned mitigation measures, no new impacts or substantially more severe significant impacts related to the visual character of the site and surrounding area, beyond those identified in the EDSP EIRs, would occur.

(d) Create a new source of substantial light or glare

Similar to the development evaluated in the EDSP EIRs, the proposed project would introduce new light sources to the project site, including new building lighting, light standards along proposed roadways, parking areas and pedestrian pathways, and loading facilities. At night, these new sources of light would be visible from a distance; however, the addition of new light sources associated with the proposed project would generally blend in with lighting of adjacent development projects to the north and west and would represent a continuation of the existing development within this area of the City. Consistent with City requirements, exterior lighting would be shielded so that direct glare and reflections are confined within the boundaries of the project site. Site lighting would be directed downward and away from adjoining properties and public rights-of-way such that no light spillover onto adjacent properties or streets would occur.

Glare is caused by light reflections from pavement, vehicles, and building materials such as reflective glass and polished surfaces. During daylight hours, the amount of glare depends on intensity and direction of sunlight. Glare can create hazards to motorists and can be a nuisance for pedestrians and other viewers. Proposed exterior building materials for the residential development would primarily include stone, brick or lap siding. These non-reflective building materials would not result in potential glare impacts within the project site or surrounding areas, and notably at the street level. With adherence to City requirements, no new impacts or substantially more severe significant impacts associated with light and glare, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified aesthetic/visual impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to aesthetic resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Agricultural and Forestry Resources

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
2. AGRICULTURE AND FORESTRY RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:			
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?			X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?			X
c) 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?			X
d) Result in the loss of forest land or conversion of forest land to non-forest use?			X
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?			X

Environmental Setting

The project site is not used for agricultural production and is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The surrounding area is characterized by undeveloped open space and residential uses.

The Farmland Mapping and Monitoring Program categorizes the project site as Grazing Land and Urban and Built-Up Land. Grazing Land is defined as land on which the existing vegetation is suited to the grazing of livestock. Other Land includes land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines, borrow pits; and water bodies smaller than forty acres.

Urban and Built-Up land is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre parcel. Common examples include residential, industrial, commercial, institutional facilities, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, and water control structures.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified less than significant impacts related to discontinuation of agricultural uses, loss of farmlands of local importance, indirect impacts resulting from non-renewal of Williamson Act contracts, and conversion of non-urban lands. Although the Eastern Dublin EIR determined that the loss of agricultural uses within the Eastern Dublin Area was less than significant, the Eastern Dublin EIR identified the cumulative loss of agricultural lands and open space as a significant and unavoidable impact and a Statement of Overriding Considerations was adopted for this impact.

2002 SEIR

A review of potential prime agricultural soils within the project area was conducted as part of the 2002 SEIR. The 2002 SEIR determined that no additional prime agricultural lands occur in the project area beyond those identified at the time the Eastern Dublin EIR was certified; therefore, no new significant impacts related to prime agricultural soils or cancellation of Williamson Act contracts were identified.

Fallon Village SEIR

No additional impacts or mitigation related to agricultural resources were identified in the Fallon Village SEIR.

Project Impacts and Mitigation Measures

(a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (farmland)

As described above, the project site is not used for agricultural production and is not designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Therefore, the proposed project would not convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or any other type of farmland to non-agricultural uses. Therefore, no new impacts or substantially more severe significant impacts associated with the conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance would occur.

(b) Conflict with existing zoning for agricultural use or a Williamson Act contract

The project site is currently classified as Planned Development (PD) Ordinance No. 32-05 on the City's Zoning Map. The project site is not currently used for agricultural purposes, not zoned for agricultural uses, and is not protected by, or eligible for, a Williamson Act contract. Therefore, the proposed project would not conflict with existing zoning for agricultural uses or Williamson Act contracts. No new impacts or substantially more severe significant impacts related to conflicts with existing zoning for agricultural use or Williamson Act contract would occur.

(c) Conversion of land from Farmland or forest use

As described above, the project site is currently classified as Planned Development (PD) Ordinance No. 32-05 on the City's Zoning Map, which allows for a mix of residential, general commercial/campus office, and limited light manufacturing uses on the project site. Neither the project site nor the surrounding area is zoned for agricultural use, forest land, timberland, or timberland production. Therefore, no new impacts or substantially more severe significant impacts associated with the conversion of farmland or forest land would occur.

(d) Result in loss of forest land or conversion of forest

No forest or timberland exists on the project site or in the surrounding area and the proposed project would not result in the loss of forest land or the conversion of forest land to non-forest use. Therefore, no new impacts or substantially more severe significant impacts associated with the loss or conversion of forest land would occur.

(e) Conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use

None of the project parcels are currently used as farmland or forest land. The proposed project would not result in the conversion of farmland on or off the project site to non-agricultural uses because there are no agricultural uses on or in the immediate vicinity of the project site. Likewise, the proposed project would not result in impacts related to changes in the existing environment that could result in the conversion of agricultural land to non-agricultural uses. Therefore, the no new impacts or substantially more severe significant impacts associated with the conversion of farmland or forest land to non-agricultural uses would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified agricultural impacts, nor result in new significant impacts to agricultural resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

California Department of Conservation (DOC). California Farmland Conservancy. California Important Farmland Finder. Website: maps.conservation.ca.gov/dlrp/ciff/ (accessed September 13, 2023).

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Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

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Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

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Air Quality

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
3. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:			
a) Conflict with or obstruct implementation of the applicable air quality plan?			X
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?			X
c) Expose sensitive receptors to substantial pollutant concentrations?			X
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people?			X

Environmental Setting

The proposed project is located in the City of Dublin and is within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD), which regulates air quality in the San Francisco Bay Area. Air quality conditions in the San Francisco Bay Area have improved significantly since BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen substantially. In Dublin, and the rest of the Air Basin, exceedances of air quality standards occur primarily during meteorological conditions conducive to high pollution levels, such as cold, windless winter nights or hot, sunny summer afternoons.

Within BAAQMD, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10}, $PM_{2.5}$), and lead (Pb) have been set by both the State of California and federal government. The State has also set standards for sulfate and visibility. BAAQMD is under State non-attainment status for ozone and particulate matter standards. BAAQMD is classified as non-attainment for the federal ozone 8-hour standard and non-attainment for the federal $PM_{2.5}$ 24-hour standard.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified that mobile source CO emissions would be less than significant and construction dust emissions would be less than significant with implementation of mitigation measures identified in the Eastern Dublin EIR. In addition, the Eastern Dublin EIR identified that impacts associated with construction equipment/vehicle emissions, mobile source reactive organic gasses (ROG) and nitrogen oxide (NO_x) emissions, and stationary source emissions would be significant and unavoidable. Thus, a Statement of Overriding Considerations was adopted. The following mitigation measures would apply to the proposed project:

MM 3.11/1.0 The City of Dublin shall:

- Require watering in late morning and at the end of the day; the frequency of watering should increase if wind exceeds 15 mph. Watering should include all excavated and graded areas and material to be transported off-site. Use recycled or other non-potable water resources where feasible.
- Require daily cleanup of mud and dust carried onto street surfaces by construction vehicles.
- Require excavation haul trucks to use tarpaulins or other effective covers.
- Require that, upon completion of construction, measures shall be taken to reduce wind erosion. Replanting and repaving should be completed as soon as possible.
- Require that unnecessary idling of construction equipment is avoided.
- Require that, after grading is completed, fugitive dust on exposed soil surfaces shall be controlled using the following methods:
  - All inactive portions of the construction site should be seeded and watered until grass growth is evident.
  - Require that all portions of the site shall be sufficiently watered to prevent excessive amounts of dust.
  - Require that, at all times, the following procedures should be followed:
    - On-site vehicle speed shall be limited to 15 mph.
    - Use of petroleum-based palliative shall meet the road oil requirements of the Air Quality District. Non-petroleum-based tackifiers may be required by the Public Works Director.
    - The Public Works Department will handle all dust complaints. The Public Works Director may require the services of an air quality consultant to advise the City on the severity of the dust problem and additional ways to mitigate impacts on residents, including temporarily halting project construction. Dust concerns in adjoining communities as well as the City of Dublin shall be

controlled. Control measures shall be related to wind conditions. Air quality monitoring of PM levels shall be provided as directed by the Public Works Director in Dublin.

MM 3.11/2.0 Minimize construction interference with regional non-project traffic movement by:

- Scheduling receipt of construction materials to non-peak travel periods.
- Routing construction traffic through areas of least impact sensitivity.
- Limiting lane closures and detours to off-peak travel periods.
- Providing ride-share incentives for contractor and subcontractor personnel.

MM 3.11/3.0 Require emissions control from on-site equipment through a routine mandatory program of low-emissions tune-ups.

MM 3.11/4.0 Require preparation of a construction impact reduction plan that incorporates all proposed air quality mitigation strategies with clearly defined responsibilities for plan implementation and supervision.

MM 3.11/5.0 Exercise interagency cooperation with a sub-regional and on a regional basis to integrate air quality planning efforts with transportation, transit, and other infrastructure plans.

MM 3.11/6.0 Maintain consistency among specific development plans and regional transportation and growth management plans.

MM 3.11/7.0 Implement transportation demand management (TDM) techniques to reduce mobile source emissions.

MM 3.11/8.0 Optimize the existing transportation system to reduce congestion and shift travel to non-peak travel periods.

MM 3.11/9.0 Coordinate levels of growth with roadway transportation facilities improvements to accommodate travel demand without inducing demand by providing excess system capacity.

MM 3.11/10.0 Encourage mixed-use development that provides housing, jobs, goods and services in close proximity.

MM 3.11/11.0 Require linkage between growth of housing and job opportunities consistent with a positive sub-regional contribution to jobs/housing ratio balances.

MM 3.11/12.0 Stationary source emissions associated with Project development should also be minimized where feasible to reduce overall cumulative impacts. Minimum energy conservation standards are established in Title 24 of the California Code of Regulations. Design practice can achieve a slightly greater level of conservation than the minimum standards. A conservation target level for some fraction of Eastern Dublin development of 10 percent above the minimum should be implemented as an appropriate acknowledgement of the desired "environmentally-friendly" community character for this Project.

MM 3.11/13.0 Solid waste recycling should be included in all development planning to ensure that recycling criteria specified in AB-939 can be most easily met.

2002 SEIR

A review of potential operational air quality impacts was conducted as part of the 2002 SEIR. The 2002 SEIR determined that no additional operational air quality impacts would occur beyond those identified at the time the Eastern Dublin EIR was certified; therefore, no new significant impacts related to air quality were identified.

Fallon Village SEIR

No additional impacts were identified in the Fallon Village SEIR. However, the Fallon Village SEIR identified the following supplemental mitigation measures that would be applicable to the proposed project:

SM-AQ-1: In addition to the measures identified in Mitigation Measure 3.11/1.0 of the Eastern Dublin EIR, the City of Dublin shall:

a) Require construction contractors to water or cover stockpiles of debris, soil, sand or other materials that can be blown by the wind.
b) Require construction contractors to sweep daily (preferably with water sweepers) all paved access road, parking areas and staging areas at construction sites.
c) Require construction contractors to install sandbags or other erosion control measures to prevent silt runoff to public roadways.

SM-AQ-2: In addition to the measures identified in Mitigation Measure 3.11/5.0-11.0 of the Eastern Dublin EIR, the City of Dublin shall require that the following be implemented:

a) The Project proponent should coordinate with LAVTA for the eventual extension of transit service to the Project area. Project proponents should construct or reserve necessary right-of-way for transit facilities such as bus turnouts/bus bulbs, benches, etc.
b) Bicycle land and/or paths, connected to community-wide network should be provided as part of the Stage 1 Development Plan.

c) Sidewalks and/or paths, connected to adjacent land uses, transit stops, and/or community-wide network should be provided as part of the Stage 1 Development Plan.

d) Consider shuttle service to regional transit system or multimodal center.

e) Consider providing a satellite telecommute center for Project residents if this is feasible in terms of a convenient location.

f) Provide interconnected street network, with a regular grid or similar interconnected street pattern.

SM-AQ-3: Same as Supplemental Mitigation AQ-2.

Project Impacts and Mitigation Measures

(a) Consistency with the applicable clean air plan

BAAQMD's Clean Air Plan is a comprehensive plan to improve Bay Area air quality and protect public health. The Clean Air Plan defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest heath risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce greenhouse gas (GHG) emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project: (1) supports the goals of the Clean Air Plan; (2) includes applicable control measures from the Clean Air Plan; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

As described below, the proposed project: (1) does not support the goals of the Clean Air Plan because the proposed project's operational emissions would exceed the BAAQMD thresholds; (2) includes applicable control measures from the Clean Air Plan because the proposed project would promote the BAAQMD's initiatives to reduce vehicle trips and vehicle miles traveled (VMT) and would comply with the latest California Green Building Standards Code (CALGreen) standards; and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan since the proposed project would include applicable control measures from the Clean Air Plan. However, since the proposed project would not support the goals of the Clean Air Plan, the project is not consistent with the Clean Air Plan.

Clean Air Plan Goals. The proposed project would result in significant and unavoidable operational emissions in violation of the BAAQMD's significance thresholds. Therefore, the project would conflict with the Clean Air Plan goals.

The primary goals of the Bay Area Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, reduce GHG emissions and protect climate.

BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. If a project exceeds these thresholds, it is not aligned with the Clean Air Plan goals.

Construction Emissions. As discussed below, with implementation of Supplemental Mitigation Measure SM-AQ-1, as modified below, and Mitigation Measures 3.11/2.0 and 3.11/3.0 from the Eastern Dublin EIR, the project would result in less-than-significant construction-period emissions.

Operational Emissions. As discussed below, the proposed project would result in significant and unavoidable operational emissions. Therefore, the project would conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures. The control measures of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutants Measures.

The proposed project is consistent with the applicable Clean Air Plan control measures.

Stationary Source Control Measures. The Stationary Source Control Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by BAAQMD and then enforced by BAAQMD's Permit and Inspection programs. Since the project would not include any stationary sources of emissions, the Stationary Source Control Measures of the Clean Air Plan are not applicable to the project.

Transportation Control Measures. BAAQMD identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, toxic air contaminants (TACs), and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The project would subdivide the 192-acre site into 11 parcels to accommodate proposed residential, limited light manufacturing, hotel, retail and office uses within the project area. The proposed project would increase pedestrian and bicycle connectivity through the site and to adjacent developments. Croak Road and Dublin Boulevard are proposed to be extended to provide access to the project site and would have sidewalks on both sides of the road. Additionally, new bicycle facilities are proposed on the future Dublin Boulevard Extension and Croak Road, which would serve the project site. The proposed project is not anticipated to interfere with any plans or policies for transit usage in the area such as the Dublin Boulevard Extension project, which will have bus pull outs, bus pads, and passenger pads along the roadway. As such, the proposed project's proximity to surrounding uses and the ability for pedestrians and bicyclists to access the project site would support the ability of employees and residents to use alternative modes of transportation. Therefore, the project would not conflict with BAAQMD initiatives to reduce vehicle trips and VMT and would encourage the use of alternate means of transportation through increasing pedestrian and bicyclist access.

Energy Control Measures. The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply exclusively to electrical utility providers and local government agencies (and not individual projects), the Energy Control Measures of the Clean Air Plan are not applicable to the project.

Building Control Measures. BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The proposed project would be required to comply with the latest CALGreen standards. Therefore, the Building Control Measures of the Clean Air Plan are not applicable to the project.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the project.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands, as well as encouraging local governments to enact ordinances that promote urban-tree plantings. The proposed project would plant -trees and landscaping throughout the project site. As described in the Project Description, the project would include dedication of land for a future 7.2-acre Community Park and 42.6 acres for a Natural Community Park. Additionally, the Planned Development Stage 2 Development Plan includes landscape design guidelines and a planting palette to create a unified community aesthetic. The landscape theme would feature blossoming plants and evergreens that complement the proposed architecture and encourage pedestrian access and connectivity within the residential development and to adjacent neighborhoods. In addition, the project site supports five habitat types consisting of non-native annual grassland, seasonal wetland/pond, drainages, emergent marsh and riparian woodlands. As discussed in Section 4., Biological Resources , with implementation of mitigation measures and regulatory requirements, which require compensatory mitigation for loss of wetlands, no new impacts or substantially more severe significant impacts related to wetlands, beyond those identified in the EDSP EIRs, would occur. Therefore, the proposed project would not conflict with the Natural and Working Lands Control Measures of the Clean Air Plan.

Waste Management Control Measures. The Waste Management Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTWs), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the project.

*Super-GHG Control Measures.*The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the project.

Clean Air Plan Implementation.As discussed above, the proposed project would implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the project would not disrupt or hinder implementation of a control measure from the Clean Air Plan.

However, as discussed above and below, the proposed project would conflict with the goals of the Clean Air Plan, due to an exceedance of the operational emission thresholds. The EDSP EIRs did not evaluate consistency with the applicable clean air plan; however, operational emissions were determined to be significant and unavoidable and a Statement of Overriding Considerations was adopted. The proposed project would contribute to this significant and unavoidable impact identified in the EDSP EIRs but would not result in any new or more severe impacts compared to those previously identified in the EDSP EIRs. Therefore, no new impacts or substantially more severe significant impacts associated with conflict with an air quality plan would occur.

(b) Violate air quality standards or cause cumulatively considerable air pollutants

As demonstrated below, construction emissions associated with the project would be less than significant with implementation of the Supplemental Mitigation Measure SM-AQ-1, as identified in the Fallon Village SEIR, and modified below. However, the proposed project would violate air quality standards due to operational-related emissions; therefore, operation of the proposed project would result in a cumulatively considerable net increase of criteria pollutants. The proposed project would contribute to the significant and unavoidable impacts identified in the EDSP EIRs but would not result in operational impacts that are new or more significant than those analyzed in the EDSP EIRs.

Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants: CO, ozone (O_3), NO_2, SO_2, Pb, and suspended particulate matter (PM). These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. As identified above, BAAQMD is under State non-attainment status for ozone, PM_{10}, and $PM_{2.5}$ standards. The Air Basin is also classified as non-attainment for both the federal ozone 8-hour standard and the federal $PM_{2.5}$ 24-hour standard.

Air quality standards for the proposed project are regulated by the BAAQMD CEQA Air Quality Guidelines. According to the BAAQMD CEQA Air Quality Guidelines, to meet air quality standards for operational-related criteria air pollutant and air precursor impacts, the project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NO_x, or $PM_{2.5}$ greater than 54 pounds per day or PM_{10} exhaust emissions greater than 82 pounds per day; or
- Generate average operational emissions of ROG, NO_x or $PM_{2.5}$ of greater than 10 tons per year or 54 pounds per day or PM_{10} emissions greater than 15 tons per year or 82 pounds per day.

The following sections describe the proposed project's construction- and operational-related air quality impacts and CO impacts.

Construction Emissions.As discussed above, the EDSP EIRs found that that proposed development would result in significant and unavoidable impacts associated with construction activities. Mitigation Measures 3.11/1.0, 3.11/2.0, 3.11/3.0, and 3.11/4.0, and SM-AQ-1 were identified, but were insufficient to reduce impacts to a less-than-significant level and, therefore, a Statement of Overriding Considerations was adopted for the project.

During construction of the proposed project, construction dust would affect local and regional air quality at various times during build-out period of the project. The dry, windy climate of the area during the summer months combined with the fine, silty soils of the region create a high potential for dust generation. Emissions during the grading phase of construction are primarily associated with exhaust from large earth moving equipment and dust generated by grading activities. Emissions in later stages of construction would primarily be associated with construction employee commute vehicles, asphalt paving, mobile equipment, stationary equipment, and architectural coatings.

The effects of construction activities would be increased dustfall and locally elevated levels of PM_{10} near the construction activity. Depending on the weather, soil conditions, the amount of activity taking place, and nature of dust control efforts, these impacts could affect existing or future residential areas within or near the project.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With implementation of these Basic Best Management Practices for Construction-Related Fugitive Dust Emissions, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROGs and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using the California Emissions Estimator Model (CalEEMod) version 2022.1, consistent with BAAQMD recommendations. The proposed project would include phased construction, which would consist of Phase 1 from June 2024 to June 2026, Phase 2 from June 2025 to June 2027, and Phase 3 from June 2024 to June 2034. Overall, construction of the proposed project is anticipated to last approximately 10 years and is anticipated to be fully improved by 2034. Phase 1 would include 128 residential units, 23,090 square feet of parking lot area, 101,780 square feet of total non-parking asphalt, 26,800 square feet of hardscape, and 51,000 square feet of landscaping on approximately 6.5 acres. Phase 2 would include 110 residential units, 11,790 square feet of parking lot area, 60,400 square feet of total non-parking asphalt, 30,980 square feet of hardscape, and 111,000 square feet of landscaping on approximately 7.2 acres. Phase 3 would include the limited light manufacturing, hotel, retail, and office uses on approximately 130 acres. The construction worker and vendor trips per day during Phases 1 and 2 were provided by the project applicant, which was included in CalEEMod. Cut and fill from project grading would be balanced on-site. This analysis also assumes the use of Tier 2 construction equipment, as required by current CARB OFFROAD regulations. Construction-related emissions are presented in Table D. CalEEMod output sheets are included in Appendix A.

Table D: Project Construction Emissions in Pounds Per Day

Project Construction	**ROG**	**NO_x**	**Exhaust PM_{10}**	**Fugitive Dust PM_{10}**	**Exhaust $PM_{2.5}$**	**Fugitive Dust $PM_{2.5}$**
Average Daily Emissions	14.5	31.2	41.3	0.1	10.4	3.2
BAAQMD Thresholds	54.0	54.0	82.0	BMP	54.0	BMP
Exceed Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: LSA (October 2023).
BMP = Best Management Practices

As shown in Table D, construction emissions associated with the project would be less than significant for ROG, NO_x, $PM_{2.5}$, and PM_{10} exhaust emissions. BAAQMD requires implementation of BAAQMD's Basic Best Management Practices for Construction-Related Fugitive Dust Emissions (best management practices) to minimize construction fugitive dust impacts. The EDSP EIRs identified Mitigation Measure 3.11/1.0 and Supplemental Measure SM-AQ-1 to minimize emission of dust. BAAQMD has since adopted newer and more restrictive dust control measures to reduce construction dust and construction vehicle emissions to which the project applicant must adhere in order to reduce this construction impact to a less-than-significant level. Therefore, Supplemental Mitigation Measure SM-AQ-1, as identified in the Fallon Village SEIR, has been modified, as shown below (with additions in <u>underline</u> and deletions in ~~strikethrough~~), to include BAAQMD's most current best management practices and require that construction equipment meets the California Air Resources Board (CARB) Tier 2 emissions standards equipped with Level 3 diesel particulate filters or equivalent. Mitigation Measures 3.11/2.0 and 3.11/3.0 would still be applicable to the proposed project.

SM-AQ-1: In addition to the measures identified in Mitigation Measure 3.11/1.0 of the East Dublin EIR, the City of Dublin shall:

a) Require construction contractors to water or cover stockpiles of debris, soil, sand or other materials that can be blown by the wind.

b) Require construction contractors to sweep daily (preferably with water sweepers) all paved access road, parking areas and staging areas at construction sites.

c) Require construction contractors to install sandbags or other erosion control measures to prevent silt runoff to public roadways.

d) <u>All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.</u>

e) <u>All haul trucks transporting soil, sand, or other loose material off-site shall be covered.</u>

f) <u>All visible mud or dirt tracked-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.</u>

g) <u>All vehicle speeds on unpaved roads shall be limited to 15 mph.</u>

h) <u>All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible.</u>

i) <u>Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.</u>

j) <u>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 [CCR]). Clear signage shall be provided for construction workers at all access points.</u>

k) <u>All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.</u>

l) <u>A publicly visible sign shall be posted with the telephone number and person to contact at the City of Dublin regarding dust complaints. This person shall respond and take corrective action within 48 hours. BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.</u>

m) <u>During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier</u>

2 emissions standards equipped with Level 3 diesel particulate filters or equivalent. Verification shall be provided to the City for confirmation.

With implementation of Supplemental Mitigation Measure SM-AQ-1, as modified above, and Mitigation Measures 3.11/2.0 and 3.11/3.0, the proposed project would not result in any new or more severe impacts related to construction period emissions compared to those previously identified in the EDSP EIRs.

Operational Emissions. The EDSP EIRs found that proposed development would result in significant and unavoidable impacts associated with operational activities. Mitigation Measures 3.11/5.0, 3.11/6.0, 3.11/7.0, 3.11/8.0, 3.11/9.0, 3.11/10.0, and 3.11/11.0 and SM-AQ-2 and SM-AQ-3 were identified but were insufficient to reduce impacts to a less-than-significant level and, therefore, a Statement of Overriding Considerations was adopted for the project.

Long-term air pollutant emission impacts associated with the proposed project are those related to mobile sources (e.g., vehicle trips), energy sources (e.g., electricity and natural gas), and area sources (e.g., architectural coatings, the use of landscape maintenance equipment, and the use of consumer products).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of PM emissions compared with diesel-powered vehicles.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source emissions associated with the project would include emissions from the use of landscaping equipment and consumer products.

Emission estimates for operation of the project were calculated using CalEEMod. Model results are shown in Table E. Trip generation rates for the project were based on the project's trip generation estimate, as described in Section 18. Transportation/Traffic, which estimates that the proposed project would generate approximately 22,618 average daily trips associated with the proposed residential, limited light manufacturing, hotel, retail, and office uses. In addition, CalEEMod assumes that the proposed project would not include any wood-burning fireplaces. When project-specific data were not available, default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate project emissions.

The primary emissions associated with the project would be regional in nature, meaning that air pollutants would be rapidly dispersed on release or, in the case of vehicle emissions associated with the project; emissions would be released in other areas of the Air Basin. The daily and annual emissions associated with project operational trip generation, energy, and area sources are identified in Table E for ROG, NO_x, PM_{10}, and $PM_{2.5}$.

Table E: Project Operational Emissions

	ROG	NO_x	PM_{10}	$PM_{2.5}$
Proposed Project Emissions				
Pounds Per Day				
Mobile Source Emissions	53.0	46.2	140.2	36.0
Area Source Emissions	105.5	0.8	0.1	0.1
Energy Source Emissions	2.2	39.6	3.0	3.0
Total Project Emissions	**160.7**	**86.6**	**143.4**	**39.2**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**Yes**	**Yes**	**Yes**	**No**
Tons Per Year				
Mobile Source Emissions	9.7	8.4	25.6	6.6
Area Source Emissions	19.2	0.1	<0.1	<0.1
Energy Source Emissions	0.4	7.2	0.6	0.6
Total Project Emissions	**29.4**	**15.8**	**26.2**	**7.2**
BAAQMD Thresholds	10.0	10.0	15.0	10.0
Exceed Threshold?	**Yes**	**Yes**	**Yes**	**No**
EDSP EIRs Emissions				
EDSP EIR (Mobile Source Emissions)	109.5	102.9	78.9	-
Fallon Village SEIR (Mobile Source Emissions)	116.9	116.6	89.9	-
BAAQMD Thresholds	**54.0**	**54.0**	**82.0**	**-**
Exceed Threshold?	**Yes**	**Yes**	**Yes**	**-**

Source: LSA (October 2023).

The results shown in Table E indicate the project would exceed the significance criteria for daily and annual ROG, NO_x, and PM_{10} emissions. As shown in Table E, $PM_{2.5}$ emissions would be below the thresholds. As discussed above, the EDSP EIRs found that proposed development would result in significant and unavoidable impacts associated with operation activities. Mitigation Measures 3.11/5.0, 3.11/6.0, 3.11/7.0, 3.11/8.0, 3.11/9.0, 3.11/10.0, and 3.11/11.0 and SM-AQ-2 and SM-AQ-3 were identified but were insufficient to reduce impacts to a less-than-significant level and, therefore, a Statement of Overriding Considerations was adopted for the project. The EDSP EIRs evaluated emissions estimates using the URBEMIS-2002 emission model, which is now considered outdated and only calculated mobile source emissions; area and energy source emissions were not evaluated. As discussed above, the proposed project would generate approximately 22,618 average daily trips, while buildout of the uses evaluated in the Fallon Village SEIR would generate approximately 45,550 average daily trips. Therefore, although the proposed project's total emissions are higher than the mobile source emissions identified in the Fallon Village SEIR, area and energy source emissions were not analyzed in the EDSP EIRs. If area and energy source emissions were included in the EDSP EIRs, the total operational emissions would have been higher than the proposed project. Emissions associated with area and energy sources are not new information that was not known or could not have been known at the time these previous EIRs were certified. The issue of energy sources (e.g., electricity and natural gas) and area sources (e.g., architectural coatings, the use of landscape maintenance equipment, and the use of consumer products) was widely known prior to the certification of these EIRs. As such, although the proposed project would contribute to the significant and unavoidable impacts identified in the EDSP EIRs, it would not result in operational impacts that are new or more significant than those analyzed in the EDSP EIRs.

Localized CO Impacts.The EDSP EIRs found that the project would generate additional traffic volumes, increasing local levels of carbon monoxide. However, the EDSP EIRs determined that such increases would be below the standard of air quality significance.

Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. BAAQMD's CEQA Air Quality Guidelines include recommended methodologies for screening and quantifying concentrations of localized CO levels for intersections that would be in a project vicinity. A screening level analysis using guidance from the BAAQMD CEQA Air Quality Guidelines was performed to determine the impacts of the project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to BAAQMD's CEQA Air Quality Guidelines, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the proposed project would not conflict with the Alameda County Transportation Commission's congestion management programs. The proposed project would generate approximately 2,068 AM peak hour trips and 2,523 PM peak hour trips. The project's contribution to peak hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards.

Overall, with implementation of Supplemental Mitigation Measure SM-AQ-1, as modified above, and Mitigation Measures 3.11/2.0 and 3.11/3.0, the proposed project would not result in any new or more severe impacts associated with the violation of air quality standards as compared to those identified in the EDSP EIRs.

(c) Expose sensitive receptors to pollutant concentrations

With implementation of mitigation measures identified in the EDSP EIRs, no new impacts or substantially more severe significant impacts associated with exposing sensitive receptors to pollutant concentrations would occur with implementation of the project.

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks. The closest sensitive receptors to the project site include residential uses and Cottonwood Creek School located adjacent to the northern border of the project site.

The proposed project site is located in an urban area in close proximity to existing residential uses that could be exposed to diesel emission exhaust during the construction period. As such, to estimate the potential cancer risk from project construction equipment exhaust (including diesel particulate matter), a construction health risk assessment (HRA), which evaluates construction-period health risk to off-site receptors, was performed for the proposed project, and the analysis is presented below. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence and worksites). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using the CARB exposure methodology with the air dispersion modeling performed using the USEPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and meteorological data.

Table F below identifies the results of the analysis utilizing the CalEEMod outputs, assuming the use of Tier 2 construction equipment, consistent with current minimum CARB standards. Model snapshots of the sources are provided in Appendix B.

Table F: Unmitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

Project Construction	Carcinogenic Inhalation Health Risk in One Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Residential Receptor	19.20	0.054	0.000	0.268
Maximally Exposed School Receptor	17.52	0.045	0.000	0.223
Maximally Exposed Worker Receptor	1.36	0.052	0.000	0.261
Threshold?	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**Yes**	**No**	**No**	**No**

Source: LSA (October 2023).

As shown in Table F, the project's maximum cancer risk for the residential receptor maximally exposed individual (MEI) would be 19.20 in one million and the school receptor risk would be 17.52 in one million, which would exceed the BAAQMD cancer risk threshold of 10 in one million. The worker receptor risk would be lower at 1.36 in one million, which would not exceed the BAAQMD cancer risk threshold of 10 in one million. The chronic hazard index would be 0.054 for the residential receptor MEI, 0.045 for the school receptor MEI, and 0.052 for the worker receptor MEI, which would be below the threshold of 1.0. In addition, the acute hazard index would be nominal (0.000), which would not exceed the threshold of 1.0. The $PM_{2.5}$ concentration would be 0.268 for the residential receptor MEI, 0.223 for the school receptor MEI, and 0.261 for the worker receptor MEI, which would be below the threshold of 0.3 $\mu g/m^3$. However, construction contractors would be required to implement BAAQMD's Basic Construction Mitigation Measures and use construction equipment that meets the CARB Tier 2 emissions standards equipped with Level 3 diesel particulate filters or equivalent as identified in the Fallon Village SEIR and Supplemental Mitigation Measure SM-AQ-1, as modified above.

Table G identifies the results of the analysis with implementation of Supplemental Mitigation Measure SM-AQ-1, as modified above.

Table G: Mitigated Inhalation Health Risks from Project Construction to Off-Site Receptors

Project Construction	**Carcinogenic Inhalation Health Risk in One Million**	**Chronic Inhalation Hazard Index**	**Acute Inhalation Hazard Index**	**Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)**
Maximally Exposed Residential Receptor	2.90	0.003	0.000	0.062
Maximally Exposed School Receptor	2.62	0.003	0.000	0.052
Maximally Exposed Worker Receptor	0.21	0.003	0.000	0.060
Threshold?	**10.0**	**1.0**	**1.0**	**0.30**
Exceed?	**No**	**No**	**No**	**No**

Source: LSA (October 2023).

As shown in Table G, the project's maximum cancer risk for the residential receptor MEI would be 2.90 in one million, the school receptor risk would be 2.62 in one million, and the worker receptor risk would be 0.21 in one million, which would be below the BAAQMD cancer risk threshold of 10 in one million. Therefore, with implementation of modified Supplemental Mitigation Measure SM-AQ-1, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations. With implementation of modified Mitigation Measure SM-AQ-1, no new impacts or substantially more severe significant impacts associated with exposing sensitive receptors to pollutant concentrations would occur.

(d) Odors

During construction, the various diesel-powered vehicles and equipment in use on the site would create localized odors. These odors would be temporary and would not likely be noticeable for extended periods of time beyond the project site. The potential for diesel odor impacts is, therefore, considered less than significant. In addition, the proposed project is consistent with the land uses established in Planned Development Ordinance No. 32-05 and would not include any activities or operations that would generate objectionable odors and once operational, it would not be a source of odors. Therefore, the proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. Therefore, no new impacts or substantially more severe significant impacts associated with odors would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified air quality impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, as modified above, there would be no new or substantially more severe significant impacts to air quality beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

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Biological Resources

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
4.	**BIOLOGICAL RESOURCES. Would the project:**			
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X
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?			X
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?			X
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X
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?			X

Environmental Setting

The following discussion of biological resources within the project site is based on the results of a Biological Resources Assessment, special-status plant survey, listed large brachiopod wet season survey, and arborist report prepared for the proposed project (Appendices C through F, respectively).

The project site consists entirely of undeveloped grazing ranchland and open space. The land uses on nearby properties consist of agricultural, residential, open space, and commercial uses as well. Five habitat types were identified within the study area during the plant surveys: non-native annual grassland, seasonal wetland/pond, drainages, emergent marsh, and riparian woodlands. These habitats are discussed below.

Non-Native Annual Grassland

Most of the project site consists of non-native annual grassland and much of this grassland is currently grazed by cattle. The species include wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum* spp. *leporinum*), and Italian ryegrass (*Festuca perennis*), among others. Common non-native forbs observed during field surveys include black mustard (*Brassica nigra*), Mediterranean linseed (*Bellardia trixago),* yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), filaree (*Erodium* spp.), and bur clover (*Medicago polymorpha*).

Seasonal Wetland/Pond

The seasonal wetlands across the project site are characterized by Italian rye grass (*Festuca perennis),* seaside barley (*Hordeum marinum),* Baltic rush, (*Juncus balticus),* bristly oxtongue (*Helminthotheca echioides),* common toad rush (*Juncus bufonius),* beardless wild rye (*Elymus triticoides),* timothy grass (*Phleum alpinum),* bulrush (*Typha latifolia),* curly dock (*Rumex crispus),* tall flatsedge (*Cyperus eragrostis),* hyssop lossestrife (*Lythrym hyssopifolia),* brass buttons (*Cotula coronopifolia),* soft brome (*Bromus hordeaceus),* prickly lettuce (*Lactuca serriola),* Congdon's tarplant, and rabbit's foot grass.

Drainages

Six drainages exist on the project site. One intermittent channel lies within the riparian woodland on the northwestern corner, four drainages are spread within the hills of the central northern part of the project site, and one drainage is located along the eastern project site boundary. Dominant vegetation within the drainage features consist primarily of salt grass (*Distichilis spicata*), iris leaf rush (*Juncus xiphioides*) and rabbit's foot grass (*Polypogon monspeliensis*) with sporadic yerba mansa (*Anamopsis californica*) and watercress (*Nasturtium officinale*) within the northwestern corner.

Emergent Marsh

The emergent marsh, located in the southwest corner of the project site, contains water year-round and is primarily characterized by a large stand of cattails (*Typha* sp.). The cattail stand covers the entire emergent marsh along with a few scattered willow trees (*Salix* spp.) present along the boundary of Croak Road. Several hydrophytic species are present within the willow undergrowth such as, cutleaf water parsnip (*Berula erecta),* prickly lettuce, and rabbits foot grass.

Riparian Woodland

A group of willow (*Salix sp*) and cottonwood trees (*Populus fremontii*) surround the quarry pond within the northern portion of the project site. Additionally, a dense group of willow, cottonwood, and coast live oak (*Quercus agrifolia*) trees surround the intermittent drainage within the northwestern corner of the site.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to direct habitat loss, indirect habitat loss due to vegetation removal for construction and development activities, and loss or degradation of sensitive habitat. The Eastern Dublin EIR also identified potentially significant impacts related to special-status wildlife, including San Joaquin kit fox, California red-legged frog (CRLF), California tiger salamander (CTS), western pond turtle, tri-colored blackbird, golden eagle, burrowing owl, American badger, special-status invertebrates and others. Mitigation measures were identified to reduce significant impacts. One significant and unavoidable impact was identified related to the cumulative loss or degradation of botanically sensitive habitat, and a Statement of Overriding Considerations was adopted. The following mitigation measures would apply to the proposed project:

MM 3.7/1.0 Direct disturbance or removal of trees or native vegetation cover should be minimized and be restricted to those areas actually designated for the construction of improvements.

MM 3.7/5.0 All areas of disturbance should be revegetated as quickly as possible to prevent erosion. Native trees (preferably those species already on site), shrubs, herbs, and grasses should be used for revegetation of areas to remains as natural open space. The introduction of non-native plant species should be avoided.

MM 3.7/14.0 The City should enact and enforce an erosion and sedimentation control ordinance establishing performance standards to ensure maintenance of water quality and protection of stream channels. The ordinance should regulate grading and development activities adjacent to streams and wetland areas and require revegetation of all ground disturbance immediately after construction to reduce erosion potential. Until such an ordinance is in place, the City shall require project applicants to provide a detailed erosion and sedimentation control plan as part of the project submittal.

MM 3.7/16.0 Existing sensitive habitats shall be avoided and protected where feasible.

MM 3.7/17.0 Construction near drainages shall take place during the dry season.

MM 3.7/19.0 The use of rodenticides and herbicides within the Project area should be restricted to avoid impacts on wildlife. The City shall require any poisoning programs to be done in cooperation with and under supervision of the Alameda County Department of Agriculture.

MM 3.7/20.0 The City shall require development applicants to conduct a pre-construction survey within 60 days prior to habitat modification (clearing construction and road site, etc.) to verify the presence of sensitive species, especially the San Joaquin kit fox, nesting raptors, the red-legged frog, the western pond turtle, the California tiger salamander, the tri-colored blackbird and other species of concern.

MM 3.7/22.0 Maintain a minimum buffer (at least 100 feet) around breeding sites of the red-legged frog, California tiger salamander and the Western pond turtle identified by MM 3.7/20.0.

MM 3.7 /23.0 Maintain a natural open space zone (Golden Eagle Protection Zone) around the golden eagle nest located in the northeast corner of the planning area. Exceptions to this setback will have to be approved by the U.S. Fish and Wildlife Service (USFWS), based on field examinations of the site to determine what constitutes "harassment" of the eagles at this particular location. Construction within this protection zone will not be allowed unless it is determined that the eagles have ceased to use the nest site for two consecutive years as verified by the USFWS.

MM 3.7 /24.0 During the golden eagle reproductive period (July-January), an additional temporal buffer will be established within 250 feet of the Golden Eagle Protection Zone. During this period, construction and development activities will not be allowed within this temporal zone.

MM 3.7 /25.0 Partial mitigation for the loss of useable foraging habitat will be provided by MM 3.7 / 23 which establishes a Golden Eagle Protection Zone. Additional mitigation will be provided by the 571.1 acres of Open Space and 2,672.3 acres of Rural Residential land use of the Project. Combined, the Golden Eagle Protection Zone and the 3,243.4 acres of land projected for open space protection or low intensity development would provide suitable foraging habitat.

MM 3.7/27.0 Maintain a minimum buffer (at least 300 feet) around known or those identified by pre-construction surveys (MM 3.7/20.0) nesting sites of the burrowing owl and breeding sites of the American badger during the breeding season to avoid direct loss of individuals (March – September).

2002 SEIR

The 2002 SEIR determined that implementation of the EDPO project would result in potentially significant supplemental impacts to seasonal wetlands and intermittent streams, sensitive habitats not previously analyzed, special-status plant species, San Joaquin kit fox, California red-legged frog (CRLF), special-status invertebrates, California tiger salamander (CTS), nesting raptors, golden eagle, burrowing owl, nesting passerines, and bat species. Supplemental mitigation measures were identified to reduce these impacts to a less than significant level. The following supplemental mitigation measures are applicable to the proposed project:

SM-BIO-1 (*reference only)*: A Resource Management Plan (RMP) shall be prepared for the Project area for the City of Dublin's review and approval prior to or concurrent with submittal of any land use entitlement requests. The RMP shall include all properties in the Project area and any necessary off-site mitigation lands, and address consistency with local policies, such as the Stream Restoration Program and the Grazing Management Plan and mitigation measures contained in the Eastern Dublin EIR and this SEIR (for the full text of this mitigation see Chapter 3.3 [in the SEIR]).

SM-BIO-2: Plant surveys, as outlined in United States Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) protocols, shall be conducted across the Project area in early spring, late spring, and late summer to confirm presence or absence of special-status plant species. Results of these surveys shall be addressed in the RMP (SM-BIO-1) and in project-level environmental review of all subsequent development applications in the Project area.

SM-BIO-3: Once presence is determined for a special-status plant species, areas supporting the species should be avoided to the extent feasible.

SM-BIO-4: If a special-status plant species cannot be avoided, then the area containing the plant species must be measured and one of the following steps must be taken to ensure replacement on a 1:1 ratio (by acreage):

a) Permanently preserve, through use of a conservation easement or other similar method, an equal amount of acreage either within the Project area or off-site that contains the plant; or

b) Harvest seeds from the plants to be lost or use seeds from another source within the Tri-valley area and seed an equal amount of area suitable for growing the plant either within the Project area or off-site. Such area shall be preserved and protected in perpetuity. If the plants fail to establish after a five-year period, then step "a" above must be implemented.

   Prior to submittal of a Stage 2 development plan or tentative map, the developer shall submit a written report to the City for its review and approval demonstrating how the developer will comply with this mitigation measure, including the steps it will take to ensure that transplanting or seeding will be successful.

SM-BIO-5: To the extent feasible, implementation of the Project through subsequent preparation of Stage 2 development proposals on a property-by-property basis shall be designed to avoid and minimize adverse effects to waters of the United States (which include seasonal wetlands and intermittent streams) within the Project area. Examples of avoidance and minimization include (1) reducing the size of future individual development projects within the Project area, (2) design future development projects within the Project area so as to avoid and/or minimize impacts to waters of the United

States, and (3) establish and maintain wetland or upland vegetated buffers to protect open water such as streams. In order to protect the particularly sensitive Arroyo willow riparian woodland and red-legged frog habitat found in the Fallon Road drainage from Fallon Road upstream to its terminus, future development projects within the Project area either shall completely avoid this drainage or limit impacts to bridge crossings (as opposed to fill) or other such minimally impacting features.

SM-BIO-6: To the extent that avoidance and minimization are not feasible and wetlands, intermittent streams or other waters will be filled, such impacts shall be mitigated at a 2:1 ratio (measures by acreage) within the Project area if feasible, through the creation, restoration or enhancement of wetlands, intermittent streams or other waters. Such mitigation area shall be preserved and protected in perpetuity. Prior to submittal of a Stage 2 development plan or tentative map for any property within the Project area, the property owner shall submit a written report to the City for its review and approval demonstrating how the owner will comply with this mitigation measure.

SM-BIO-7: If mitigation within the Project area is not feasible, then the developer shall mitigate the fill of wetlands or other waters at a 2:1 ratio (measured by acreage) at an off-site location acceptable to the City. Such mitigation area shall be preserved and protected in perpetuity. Prior to submittal of a Stage 2 development plan or tentative map, the property owner shall submit a written report to the City for its review and approval demonstrating how the owner will comply with this mitigation measure.

SM-BIO-8: Botanically sensitive habitats shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan, as outlined in Mitigation Measure BIO-SM-1 above.

SM-BIO-9: Future development of properties within the Project area shall comply with the amended Eastern Dublin San Joaquin Kit Fox Protection Plan which reflects the latest protocols for kit fox habitat evaluations, presence/absence surveys, pre-construction surveys and precautionary construction measures.

SM-BIO-10: San Joaquin kit fox habitat shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan, as outlined in Mitigation Measure BIO-SM-1 above.

SM-BIO-11: Focused surveys following USFWS protocol shall be conducted in habitat considered suitable for CRLF on properties within the Project area which have not already been surveyed. The current protocol (USFWS 1997b) requires that two daytime and two nighttime surveys be performed over a suitable four-day period. Results of these surveys shall be submitted to the City for review.

SM-BIO-12: Specific CRLF habitat areas, including the drainage upstream and east of the current Fallon Road alignment shall be included in and protected and enhanced by implementation of the Resource Management Plan, as outlined in Mitigation Measure BIO-SM-1 above.

SM-BIO-13: To the extent feasible, development on individual properties within the Project area shall avoid all areas of identified suitable CRLF aquatic and dispersal habitat. Specifically, development should avoid aquatic habitat and provide a 300 to 500-foot buffer on each side of any stream which provides CRLF habitat. Limited permanent development may occur within this buffer zone (such as a trail through the length of the buffer zone, or a bridge crossing across the buffer zones) so long as it will have only minor impacts on the habitat. Limited temporary development activity may occur within this buffer zone to create trails, install bridges, etc. and to allow for grading activities along the edge of the buffer zone, so long as such activity will have only minor impacts on the habitat.

SM-BIO-14: If avoidance is infeasible, then mitigation lands providing similar or better habitat for CRLF at a 3:1 replacement ratio or suitable ratio determined by the USFWS, shall be preserved and protected in perpetuity. This mitigation, to be proposed in a mitigation and monitoring plan submitted to the City, shall be required prior to submittal of the Stage 2 Development Plans and tentative maps for any specific property within the Project area. In selecting off-site mitigation lands, preference shall be given to preserving large blocks of habitat rather than many small parcels, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas. If the identified mitigation lands have been approved by the City, the following guidelines [outlined in SM-BIO-15] implemented prior to and during construction would reduce impacts to individual CRLF and preserved CRLF habitat.

SM-BIO-15: The following construction-related CRLF avoidance and protection measures shall be followed for all future development activity in the Project area, on a property-by-property basis:

- Prior to construction, a map shall be prepared to delineate upland areas from preserved wetland areas.
- The wetland construction boundary shall be fenced to prohibit the movement of CRLF into the construction area and control siltation and disturbance to wetland habitat. Following installation of fencing, its property location shall be verified by a qualified biologist. The biologist shall ensure that at no time during construction is vegetation removed inside of the fenced area. If construction necessitates the removal of vegetation within the fenced area, additional mitigation will be required. Additionally, the biologist shall walk the length of the fence once each construction day to ensure the CRLF are not trapped within the enclosure. The biologist shall walk the length of the fence more than once a day in areas where CRLF are most abundant.

- Pre-construction surveys within the construction zone shall be conducted by a qualified biologist with appropriate permits to handle CRLF. If no CRLF are detected during these surveys then construction activities may proceed. If CRLF are found within the construction disturbance zone, they shall immediately be moved passively, or captured and moved, to suitable upstream sites.
- All construction employees shall participate in an endangered species/special-status habitat education program to be presented by a qualified biologist prior to construction activities. The program shall cover such topics as identifying wetland habitat and areas used by CRLF, identification by CRLF by photos, the state and federal Endangered Species Acts, and the consequence of violating the terms of these acts.
- All construction adjacent to wetlands shall be regularly monitored to ensure that impacts do not exceed those included within the protect standards of the mitigations. Work performed within 500 feet of aquatic habitat shall be monitored by the biologist, who shall document pre-project and post-project conditions to ensure compliance.
- During construction, the biologist shall be on site whenever construction within any aquatic habitats is to occur. Any construction activity within ordinary high water shall be photo documented by the biologist. In addition, a biologist with the appropriate permits to relocate CRLF shall be available for construction as needed.

SM-BIO-16: Special-status invertebrate habitat shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan, as outlined in Mitigation Measure BIO-SM-1 above.

SM-BIO-17: The following vernal pool habitat surveys and mitigation shall be implemented for each property within the Project area:

- Surveys of potential habitat for special status invertebrates are required. If suitable habitat is identified, then such habitat shall be surveyed to determine whether it is occupied by special-status invertebrates. If impacts to occupied habitat will occur (including direct impact as a result of habitat destruction, and indirect impact due to disturbance of areas within 250 feet of occupied habitat), the following measures shall be followed:
    a) Preservation: For every acre of habitat directly impacted at least two vernal pool credits shall be dedicated within a USFWS-approved mitigation bank or, in accordance with USFWS evaluation of site-specific conservation values, three acres of vernal pool habitat may be preserved within the Project area or off-site as approved by the USFWS.

b) Creation: For every acre of habitat indirectly impacted, at least one vernal pool credit shall be dedicated within a USFWS-approved mitigation bank, or, in accordance with USFWS evaluation of site-specific conservation values, two acres of vernal pool habitat may be created and monitored within the Project area or on off-site as approved by the USFWS.

- Vernal pool habitat and associated upland areas which are preserved on site shall be preserved and managed in perpetuity.
- All avoided habitat on site shall be monitored by a qualified biologist during the time of construction. The monitoring biologist shall have authority to stop all activities that may result in destruction or take of listed invertebrate species or destruction of their habitat. Resumption of construction shall occur after appropriate corrective measures have been taken. The biologist shall report any unauthorized impacts to USFWS.
- Fencing shall be placed and maintained around any and all preserved vernal pool habitat.

All on-site construction personnel shall receive instruction regarding the presence of listed species and their habitat maintained around any and all preserved vernal pool habitat.

SM-BIO-18: California tiger salamander habitat shall be included in and shall be protected and enhanced by implementation of a Resource Management Plan as outlined in Mitigation Measure SM-BIO-1.

SM-BIO-19: If avoidance is infeasible, mitigation lands, providing similar or better aquatic and upland habitat for California tiger salamander (CTS) at a 1:1 ratio shall be set aside in perpetuity. Upland habitat shall be mitigated by preserving upland on-site, or if necessary, by preserving currently occupied upland tiger salamander habitat off-site. Aquatic habitat shall be mitigated by creating an equal number (or acreage) of new aquatic California tiger salamander breeding areas within the preserved upland habitat. This mitigation, included in a mitigation and monitoring plan, shall be submitted to the City prior to submittal of Stage 2 development plans and tentative maps. In selecting off-site mitigation lands, preference shall be given to preserving large blocks of habitat rather than many small parcels, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas.

SM-BIO-20: A qualified biologist shall conduct pre-construction surveys for nesting raptors. If an active nest is found the following mitigation measures shall also be implemented.

SM-BIO-21: If construction must occur during the nesting season, all potential nesting trees within the footprint of development should be removed prior to the nesting season to prevent occupied nests from being present when construction begins.

SM-BIO-22: Construction should occur between August 1 and February 1 to avoid disturbance of nesting raptors during the nesting season. This construction window could be adjusted if monitoring efforts determine that nesting was completed before August 1.

SM-B1O-23: If removal of nesting trees is infeasible and construction must occur within the breeding season, a nesting raptor survey shall be performed by a qualified biologist prior to tree disturbance.

SM-BIO-24: All active nests shall be identified by flagging and a buffer zone, depending on the species, shall be established around the nesting tree. Buffer zones shall be no smaller than 200 feet.

SM-B1O-25: If construction is scheduled when young birds have not yet fledged, an exclusion zone around the nest shall be established or construction shall be delayed until after the young have fledged as determined by a qualified biologist.

SM-BIO-26: Nesting raptor habitat shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan as outlined in Mitigation Measure SM-BI0 1.

SM-BIO-27: The territory of the golden eagle nesting pair shall be included in and protected and enhanced by implementation of a Resource Management Plan, as outlined in Mitigation Measure SM-BI0-1. The protected golden eagle foraging territory affects areas in the northern portion of the Project area designated for Rural Residential/Agricultural uses. Development standards and uses for these areas shall incorporate the following measures:

- Homesites in this portion of the Project area shall be located in valley bottoms adjacent to existing or planned residential development.
- Permitted agricultural uses shall be limited to grazing to maintain suitable golden eagle foraging habitat.
- Rodent control in this portion of the Project area shall be prohibited.

SM-BIO-28: If construction is scheduled during the nesting season (February 1 - August 31), preconstruction survey should be conducted on the entire Project area and within 150 meters (500 feet) of the Project area prior to any ground disturbance. To avoid take of over-wintering birds, all burrows should be surveyed 30 days prior to ground disturbance between the months of September 1 and January 31. If ground disturbance is delayed or suspended for more than 30 days after the preconstruction survey, the site should be resurveyed.

SM-BIO-29: If over-wintering birds are present no disturbance should occur within 150 feet of occupied burrows. If owls must be moved away from the disturbance area, passive relocation techniques, following CDFG 1995 guidelines, should be used rather than trapping. If no over-wintering birds are observed, burrows may be removed prior to the nesting season.

SM-BlO-30: Maintain a minimum buffer (at least 250 feet) around active burrowing owl nesting sites identified by pre-construction surveys during the breeding season to avoid direct loss of individuals (February 1- September 1).

SM-BIO-31: If removal of unoccupied potential nesting burrows prior to the nesting season is infeasible and construction must occur within the breeding season, a nesting burrowing owl survey shall be performed by a qualified biologist within 30 days prior to construction. Owls present on site after February 1 will be assumed to be nesting on site or adjacent to the site. All active burrows shall be identified.

SM-BIO-32: All active nesting burrows shall have an established 250-foot exclusion zone around the burrow.

SM-BIO-33: If construction is scheduled during summer, when young are not yet fledged, a 250-foot exclusion zone around the nest shall be established or construction shall be delayed until after the young have fledged, typically by August 31.

SM-BIO-34: When destruction of occupied burrows is unavoidable, existing unsuitable burrows should be enhanced (enlarged or cleared of debris) or new burrows created (by installing artificial burrows) at a 2:1 ratio on protected lands, as provided for below.

SM-BIO-35: A minimum of 6.5 acres of foraging habitat per pair or unpaired resident bird, shall be acquired, and permanently preserved and protected. The protected lands shall be adjacent to occupied burrowing owl habitat and at a location acceptable to CDFG.

SM-BIO-36: The project proponent shall provide funding for long-term management and monitoring of the protected lands. The monitoring plan should include success criteria, remedial measures, and an annual report to CDFG.

SM-BIO-37: Burrowing owl habitat shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan as outlined in Mitigation Measure BIO-SM-1.

SM-BIO-38: If construction is scheduled to occur during the nesting season (February 1- August 15), all potential nesting sites and structures (i.e., shrubs and tules) within the footprint of development should be removed prior to the beginning of the nesting season. However, because the removal of grassland habitat is infeasible, mitigation for impacts to California horned lark are addressed more particularly in Mitigation Measures SM-BI0-39 to SM-BI0-41, below.

SM-BIO-39: If removal of nesting trees and shrubs within the footprint of development is infeasible and construction must occur within the breeding season, a nesting bird survey should be performed by a qualified biologist within 30 days prior to construction. These surveys shall cover grassland habitat for potential nesting California horned lark. Birds present on site after February 1 will be assumed to be nesting on site or adjacent to the site.

SM-BIO-40: All active nests shall be identified by flagging and a buffer zone, depending on the species, shall be established around the nest site. Buffer zones can range between 75 feet to 100 feet.

SM-BIO-41: If construction is scheduled during summer, when young have not yet fledged, an exclusion zone around the nest shall be established or construction shall be delayed until after the young have fledged, typically by July 15.

SM-BIO-42: Habitat for nesting passerines shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan as outlined in SM-B10-1.

SM-BI0-43: A qualified bat biologist shall conduct occupancy surveys of the Project area to determine whether any mature trees, snags or suitable buildings that would be removed during future project construction provide hibernacula or nursery colony roosting habitat.

SM-BI0-44: If presence is observed, removal of roost habitat should be conducted at specific times of the year. Winter roosts are generally occupied between October 15 through January 30 and maternity colonies are generally occupied between February 15 and July 30. If bats are using roost sites that need to be removed, the roosting season of the colony shall be determined, and the removal shall be conducted when the colony is using an alternate roost.

SM-BI0-45: Habitat for these bat species shall be included in and shall be protected and enhanced by implementation of the Resource Management Plan as outlined in Mitigation Measure SM-B10-1.

Fallon Village SEIR

The Fallon Village SEIR determined that although the Fallon Village Project proposed a similar type and density of development analyzed in the Eastern Dublin EIR and 2002 SEIR, due to changes in the project design and identification of new sensitive habitats not identified in the EDSP EIRs, new impacts to biological resources, including California tiger salamander, California red-legged frog, burrowing owl, and western pond turtle were identified. Supplemental mitigation measures were identified to reduce these impacts to a less-than-significant level. The following supplemental mitigation measures are applicable to the proposed project:

SSM-BIO-1 (revised). If special-status plants cannot be avoided, then the area containing the plant that is to be impacted, and the approximate number of plants to be impacted, must be determined, and the following steps must be taken:

a) Harvest seeds from the plants to be lost, or use seeds from another source within the in Livermore and Amador valleys, and their surrounding watersheds, and seed an area suitable for supporting the plant, either within the Project area or off-site, at a level sufficient to replace the impacted individuals at a 1:1 ratio on an individual plant and basis, and at a ratio no less than 0.5:1 on an occupied habitat basis. The mitigation site shall be preserved and protected in perpetuity. If the mitigation site fails to support at least as many plants as were impacted within a five-year period, then step "b" below must be implemented.

b) Permanently preserve, through use of a conservation easement or other similar method, an equal amount of acreage either within the Project area or off-site that contains the plant.

   Prior to submission of a Stage 2 development plan or tentative map, the developer shall submit a written report to the City for its review and approval demonstrating how the developer will comply with this mitigation measure, including the steps it will take to ensure that transplanting or seeding will be successful.

SSM-BIO-2 (revised) (burrowing owl). During the breeding season (February 1-August 31) prior to submittal of Stage 2 development proposals for a particular parcel, or during a subsequent breeding season but prior to the initiation of construction, a survey shall be conducted according to CDFG protocols to determine whether Burrowing Owls are present, and if present, the number of nesting pairs of Burrowing Owls present on the parcel.

SSM-BIO-3 (revised) (burrowing owl). Pre-construction surveys for burrowing owls shall be conducted by a qualified biologist prior to any ground disturbance between September 1 and January 31. If ground disturbance is delayed or suspended for more than 30 days after the survey, the site should be re-surveyed. If no over-wintering birds are present, burrows should be removed prior to the nesting season. If over-wintering birds are present, no disturbance should occur within 150 feet of occupied burrows. If owls must be moved away from the disturbance area during this period, passive relocation measures must be prepared according to current CDFG burrowing owl guidelines, approved by CDFG, and completed prior to construction.

SSM-BIO-4 (revised) (burrowing owl). If construction is scheduled during the nesting season (February 1-August 31), pre-construction surveys should be conducted on the entire site-specific Project area and within 500 feet of such Project area prior to any ground disturbance. A minimum buffer (at least 250 feet) shall be maintained during the breeding season around active burrowing owl nesting sites identified in pre-construction surveys to avoid direct loss of individuals. Owls present on site after February 1 will be assumed to be nesting on or adjacent to the site unless evidence indicates otherwise. All active burrows shall be identified. If construction around active nests is scheduled to occur when nests are active (i.e., if they contain, or are assumed to contain, eggs or un-fledged young), a 250-foot exclusion zone around the nest shall be established or construction shall be delayed until after the young have fledged, typically by August 31. If owls are present during the early part of the breeding season, and evidence indicates that they have not yet begun nesting, they may be passively relocated from the site if authorized by CDFG.

SSM-BIO-5 (revised) (burrowing owl). If destruction of occupied (breeding or non-breeding season) burrows, or any burrows that were found to be occupied during pre-construction surveys, is unavoidable, a strategy will be developed to replace such burrows by enhancing existing burrows or creating artificial burrows at a 2:1 ratio on permanently protected lands adjacent to occupied burrowing owl habitat, and will include permanent protection of a minimum of 6.5 acres of burrowing owl habitat per pair or unpaired resident owl. A plan shall be developed and approved by CDFG describing creation or enhancement of burrows, maintenance of burrows and management of foraging habitat, monitoring procedures and significance criteria, funding assurance, annual reporting requirements to CDFG, and contingency and remediation measures.

Supplemental Mitigation Measure SM-BI0-1 (loss or degradation of botanically sensitive habitats). Impacts to central coast riparian scrub habitat shall be mitigated through the restoration or enhancement of riparian habitat at a 3:1 ratio (on an acreage basis), preferably within the proposed aquatic and buffer zone or corridor zone management areas on-site. If mitigation within the Project area is not feasible, then the developer shall mitigate impacts to central coast riparian scrub through the restoration or enhancement of riparian habitat at a 3:1 ratio (measured by acreage) at an off-site location acceptable to the City. Any riparian mitigation areas shall be preserved and protected in perpetuity. Restored habitat shall be monitored for a period of five years including preparation of an annual report each year.

Supplemental Mitigation Measure SSM-BI0-2 (California red-legged frog). If avoidance is infeasible, then mitigation lands providing similar or better habitat for CRLF shall be preserved and protected in perpetuity. Mitigation will be required at a 3:1 replacement ratio for essential aquatic habitat (including verified aquatic breeding habitat) and associated upland habitat within 100 m of essential aquatic habitat, and at a 1.5:1 replacement ratio for dispersal habitat as defined herein (Figure 3.3-D Exhibit 4.7.4). Alternately, the latter ratio may be reduced at the discretion of the City if additional essential aquatic habitat is provided. The amount of reduction shall be proportional to the amount of additional essential habitat provided, up to a maximum reduction of fifty percent. Because aquatic breeding habitat and perennial water bodies providing summer refugia are expected to limit CRLF population size in the dry eastern

Alameda/Contra Costa region more than the availability of suitable upland habitat, flexibility in this mitigation requirement (i.e., to allow for the creation of ponds to serve as partial mitigation for impacts to upland habitat) provides an opportunity to create greater benefit to CRLF populations on a landscape level. This mitigation shall be proposed in a mitigation and monitoring plan submitted to the City. In selecting off-site mitigation lands, preference shall be given to preserving large blocks of habitat rather than many small parcels, selecting mitigation land within the Livermore and Amador valleys, and their surrounding watersheds, to account for local loss of proposed critical habitat, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas.

Supplemental Mitigation Measure SSM-B10-3 (California tiger salamander). To compensate for the permanent loss of up to 1.31 acres of aquatic CTS breeding habitat, developers of individual parcels will create and/or enlarge suitable breeding ponds at a 2:1 ratio (mitigation to impact, on an acreage basis), in or adjacent to areas currently supporting CTS and with sufficient surrounding upland habitat to provide a high likelihood of establishment and persistence of a breeding population. In selecting off-site mitigation lands, preference shall be given to preserving one large block of habitat rather than many small parcels, selecting mitigation land within the Livermore and Amador valleys, and their surrounding watersheds, to account for local loss of proposed critical habitat, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas. Land selected for mitigation shall be permanently preserved through use of a conservation easement or similar method and shall be managed for use by CTS by a conservation entity. This mitigation shall be proposed in a mitigation and monitoring plan submitted to the City for approval.

Supplemental Mitigation Measure SSM-BIO-4 (California tiger salamander). To compensate for the permanent loss of up to 658.3 acres of upland CTS habitat, developers of individual parcels will acquire, preserve, and manage suitable upland habitat at a 1:1 ratio (mitigation to impact, on an acreage basis), in or adjacent to areas currently supporting CTS and within 2200 feet of a suitable breeding pond. Alternately, this ratio may be reduced (i.e., to less than 1:1 mitigation for lost upland habitat), at the discretion of the City, if additional aquatic breeding habitat (beyond that required by SM-BIO-11) is provided. The amount of reduction shall be proportional to the amount of additional essential habitat provided, up to a maximum reduction of fifty percent. Because aquatic breeding habitat is expected to limit CTS population size in the dry eastern Alameda/Contra Costa region more than the availability of suitable upland habitat, flexibility in this mitigation requirement (i.e., to allow for the creation of breeding ponds to serve as partial mitigation for impacts to aestivation habitat) may benefit CTS populations on a landscape level. This mitigation requirement may be combined with SM-BIO-11 from the 2002 SEIR so that the overall mitigation results in creation/restoration and preservation of breeding ponds (to mitigate impacts to aquatic breeding habitat according to SM-BIO-11) and preservation of associated upland habitat (to mitigate impacts to upland habitat according to SM-BIO-12). In selecting off-site mitigation lands, preference shall be given to preserving one large block of habitat rather than many small parcels, selecting mitigation land within the in Livermore and Amador valleys, and their surrounding watersheds, to account for local loss of proposed critical habitat, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas. Land selected for mitigation shall be permanently preserved through use of a conservation easement or similar method and shall be managed for use by CTS by a conservation entity. This mitigation shall be proposed in a mitigation and monitoring plan submitted to the City for approval.

Project Impacts and Mitigation Measures

The *Dublin 580 Fallon East: CEQA Bio Mitigation Measures Status and Implementation Plan*[9] (CEQA Bio Mitigation Measures Status and Implementation Plan) (Appendix G) outlines the measures that will be implemented by the project applicant in compliance with the mitigation requirements identified in the EDSP EIRs and listed above. Additionally, it was prepared to satisfy SM-BIO-1, identified in the 2002 SEIR, which requires a Resource Management Plan be prepared for the project area prior to or concurrent with submittal of any land use entitlement requests. The Resource Management Plan for East Dublin Properties (East Dublin Properties RMP) was prepared in 2004 and includes the project site. The CEQA Bio Mitigation Measures Status and Implementation Plan addresses applicable mitigation measures for the development of the proposed project that are consistent with the East Dublin Properties RMP.

(a) Substantial adverse effect on candidate, sensitive, or special status species

Special-status species are defined as follows:

- Species that are listed, formally proposed for listing, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA);
- Species that are listed, or designated as candidates for listing, as rare, threatened, or endangered under the California Endangered Species Act (CESA);
- Plant species on California Rare Plant Rank (CRPR) Lists 1A, 1B, and 2 in the CNPS Inventory of Rare and Endangered Plants;
- Animal species designated as Species of Special Concern or Fully Protected by the California Department of Fish and Wildlife (CDFW);
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA guidelines; and

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9 WRA, Environmental Consultants. 2024. *Dublin 580 Fallon East: CEQA Bio Mitigation Measures Status and Implementation Plan.* February 22.

- Species considered being a taxon of special concern by the relevant local agencies.

Special Status Plant Species

Based on habitat types and nearby California Natural Diversity Database (CNDDB) occurrences, a total of 12 special status plant species were determined to have a potential to occur on the project site. Nine of these species were found to be absent from the project site based on the results of the 2017 and 2022 plant surveys. Three special status plants were observed on the project site during the August 2022 survey - Congdon's tarplant (*Centromadia parryi ssp. congdonii*), which is a CNPS List 1B species, saline clover (*Trifolium hydrophilum*), and San Joaquin spearscale (*Extriplex joaquiniana*). All three of these species are CNPS List 1B species. Because these species are present on the project site, development of the proposed project would impact special-status plant species.

Consistent with Mitigation Measure SM-BIO-2, identified in the 2002 SEIR, a rare plant survey has been prepared for the proposed project (Appendix D). In addition, the proposed project would be required to implement Mitigation Measures SM-BIO-3 and SM-BIO-4, as identified in the 2002 SEIR, as well as SSM-BIO-1 as identified in the Fallon Village SEIR to mitigate impacts to special status plant species. These measures require permanent preservation of areas that contain special-status plants or replacement planting.

As discussed in the CEQA Bio Mitigation Measures Status and Implementation Plan, several special status plant surveys identifying and mapping sensitive plan populations have been completed for the project site. Most of these sensitive populations occur within the proposed grading footprint and cannot be avoided. In order to minimize impacts to special status plant species, a Mitigation Plan consistent with the requirements of SM-BIO-4, SSM-BIO-1, and the Eastern Alameda County Conservation Strategy (EACCS) would be prepared and implemented. The Mitigation Plan would include the preservation of on- and off-site mitigation measures in perpetuity, and/or seed harvest with subsequent establishment of an equal area for each population at a 1:1 ratio on an individual plant and basis, and at a ratio no less than 0.5:1 on an occupied habitat basis within 5 years, preserved in perpetuity. On-site mitigation opportunities may include deed-restricted and preserved creek, wetland, and upland habitat potentially suitable to establish populations of the rare plants impacted by the proposed project. Potential off-site mitigation would include compensatory mitigation on parcels within the same regional watershed and the purchase of mitigation credits from the N3 Ranch[10] mitigation bank or other agency-approved alternative mitigation bank or turnkey mitigation site.

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10 The N3 Ranch is an approximately 50,000-acre private property located south of the City of Livermore in Alameda, San Joaquin, Santa Clara, and Stanislaus counties. It is a suitable mitigation site for mitigating the proposed project's impacts to jurisdictional waters of the U.S and State, as well as a location for species-specific mitigation.

Overall, implementation of these measures would ensure impacts to special-status plant species are reduced to less-than-significant levels.

Special-Status Wildlife

A focused review of literature and data sources was conducted in order to determine which special-status wildlife species had potential to occur in the vicinity of the project site. Current agency status information was obtained from USFWS[11] for species listed as Threatened or Endangered, as well as Proposed and Candidate species for listing, under the federal Endangered Species Act (ESA), and from CDFW[12] [13] for species listed as Threatened or Endangered by the state of California under the California Endangered Species Act (CESA) or listed as "species of special concern" by CDFW. A list of special-status wildlife species with potential to occur in the project vicinity is provided in the Biological Resources Assessment (Appendix C). Based on the results of the database search, literature review, and the field survey, 35 special-status wildlife species were evaluated for the project area. Of these species, 21 species were determined to be present or potentially present on the project site due to the presence of suitable habitat and are discussed in detail due to their status and their close proximity of occupied habitat. These species are further discussed below.

Foraging or Nesting Birds. A total of 17 bird species were identified as having potential to occur on the project site. Three species - red-tailed hawk, American kestrel, and Cooper's hawk were all observed during the August 2022 survey and potentially utilize the project site for foraging and/or nesting. Nine bird species including the tricolored blackbird, burrowing owl, loggerhead shrike, great horned owl, white-tailed kite, western screech owl, red-shouldered hawk and barn owl were all identified to have a high potential to occur on the site in a nesting and foraging capacity. The northern harrier and California horned lark were identified as having a moderate potential to be present on the project, while the sharp-shinned hawk, golden eagle, ferruginous hawk, and the American peregrine falcon have a potential to use the project site for foraging but are unlikely to nest on the project site.

The proposed project has the potential to impact bird species, either directly through the removal of nests and foraging habitat or indirectly from noise or human presence during construction of the proposed project. Breeding seasons vary from year to year depending on the species, weather, and other conditions, but nesting birds could be disturbed anytime from February through August. Within the project area, birds may nest in trees, shrubs, grasslands, bare ground, and on manmade structures and equipment. Breeding birds are most likely to abandon nests early in the nest cycle. If the young birds are forced to fledge early, they could be subject to predation or starvation, which could result in reproductive failure. Construction-

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11 United States Fish and Wildlife Service (USFWS). 2022a. Endangered and threatened plant and animal species. Accessed on September 2, 2022. https://www.fws.gov/endangered/

12 California Department of Fish and Wildlife (CDFW). 2022a. State and federally listed Endangered, Threatened, and Rare plants of California. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline

13 California Department of Fish and Wildlife (CDFW). 2022b. Special animals. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109406&inline

related activities could result in loss or abandonment of an active burrowing nest through direct disturbance of an occupied burrow or through noise, vibration, or visual disturbance. In addition, construction-related activities could result in harm to wintering burrowing owls, should they occur in or near the construction area.

Implementation of Mitigation Measures SM-BIO-38 through SM-BIO-42, identified in the 2002 SEIR, which require a preconstruction nesting bird survey be conducted during the nesting bird season and establishment of buffer zones around nest sites would reduce potential impacts to nesting bird species to a less than significant level. Additionally, implementation of Mitigation Measures 3.7/23.0 and 3.7/25.0 identified in the Eastern Dublin EIR, and SM-BIO-20 through SM-BIO-27, identified in the 2002 SEIR, would reduce potential impacts to white-tailed kite, golden eagle, and other raptor species to less than significant levels, by requiring pre-construction surveys, establishment of buffer/exclusion zones, and protection of habitat through the Resource Management Plan.

The proposed project would also be required to implement Mitigation Measures SM-BIO-28 through SM-BIO-37, identified in the 2002 SEIR, which require preconstruction burrowing owl surveys, the establishment of various exclusionary buffers during construction, details requirements for replacing or enhancing burrows and foraging habitat, and requires funding for long-term management and monitoring of the protected lands. In addition, SSM-BIO-2, SSM-BIO-3, SSM-BIO-4, and SSM-BIO-5 identified in the Fallon Village SEIR, which also require preconstruction burrowing owl surveys and establishment of buffers, would also be implemented to mitigate impacts to burrowing owls. Implementation of these measures would ensure impacts to burrowing owls are reduced to less-than-significant levels by requiring pre-construction surveys, establishment of buffer/exclusion zones, and protection of habitat through the RMP.

As discussed in the CEQA Bio Mitigation Measures Status and Implementation Plan, available documentation for the project site, including CDFW's CNDDB, the Biological Resources Assessment, and unpublished results from site visits by biologists over the past years, indicates that the project site has not been occupied by burrowing owl since 2002. Consistent with SSM-BIO-2, burrowing owl surveys would be conducted on the project site prior to project construction. If burrowing owl is found to occupy the project site, a Burrowing Owl Mitigation Plan would be prepared in coordination with CDFW, and SSM-BIO-3 through SSM-BIO-5 would be implemented.

Overall, implementation of these measures would ensure impacts to foraging and nesting birds, including burrowing owl, are reduced to less-than-significant levels.

Pallid Bat, Yuma myotis and Other Bat Species. Given the presence of suitable on-site habitat, the pallid bat and Yuma myotis have a moderate potential to occur on the project site in a foraging and roosting capacity. The Townsend's big-eared bat has a low potential to occur on the site due to the nearby human disturbance. Although no evidence of bats was identified during the site survey, the riparian trees and large eucalyptus and oak trees could provide roosting habitat, while the wetlands and drainages could provide foraging opportunities for bats. Implementation of Mitigation Measures SM-BIO-43 through SM-BIO-45, identified in the 2002 SEIR, which require that a preconstruction survey be conducted and removal of potential roosting habitat be limited, would reduce potential impacts to bat species to a less than significant level.

California tiger salamander and California red-legged frog. Two amphibian species, the California tiger salamander (CTS) and the California red legged frog (CRLF), have been observed on the project site during various surveys. Both species have been documented within five miles of the project site, including a large population of CRLF just north of the project site within the Jordan Ranch ponds and drainage channel. The northern half of the project site is located within USFWS-designated critical habitat for CRLF; USFWS-designated critical habitat for CTS is located 2 miles northeast of the project site.

CRLF have been observed within the project site and just adjacent to the project site within the ditch along Croak Road. The quarry pond provides suitable breeding habitat for CTS, and CTS were identified during the field survey of the project site in March 2022. The seasonal wetlands and drainages on the project site contain suitable CRLF breeding and dispersal habitat and the multiple ground squirrel burrow complexes provide suitable upland refuge for both species. CRLF and CTS are present on-site and are likely to continue to utilize the site for breeding, foraging and dispersal. Development of the proposed project would result in the loss of breeding, foraging and upland habitat for CRLF and CTS. To mitigate potential impacts to CTS and CRLF, the proposed project would be required to implement Mitigation Measures 3.7/20.0 through 3.7/22.0, as identified in the Eastern Dublin EIR, SM-BIO-11, SM-BIO-12, SM-BIO-13, SM-BIO-14, SM-BIO-15, SM-BIO-18 and SM-BIO-19, as identified in the 2002 SEIR, and Supplemental Mitigation Measure SM-BIO-2, Supplemental Mitigation Measure SM-BIO-8 and Supplemental Mitigation Measure SM-BIO-9, as identified in the Fallon Village SEIR.

As discussed in the CEQA Bio Mitigation Measures Status and Implementation Plan, the proposed project would mitigate unavoidable impacts to CTS habitat at a 1:1 replacement ratio, pursuant to SM-BIO-19 and consistent with the EACCS, by preserving upland habitat on-site or currently occupied upland CTS habitat off-site. Further, aquatic habitat would be mitigated by creating an equal number (or acreage) of new aquatic CTS breeding areas within the preserved upland habitat, if feasible. Additionally, a CWA Section 404 permit application has been submitted for the proposed project, which requires consultation with USFWS (Endangered Species Act [ESA] Section 7 consultation) defining the adequate compensatory habitat mitigation ratio, acceptable mitigation lands, and/or mitigation credits, as well as avoidance and minimization measures to minimize incidental take of this species. The proposed project would also obtain an Incidental Take Permit from CDFW (California Fish and Game Code Section 2081 et seq.), which would define adequate compensatory mitigation. With implementation of all measures required by the USFWS/United States Army Corps of Engineers (Corps) through ESA Section 7 consultation, and California Fish and Game Code Section 2081 et seq., the requirements of SM-BIO-19 would be achieved concurrently.

In addition, as discussed in the CEQA Bio Mitigation Measures Status and Implementation Plan, the proposed project would mitigate unavoidable impacts to CRLF habitat at a 3:1 replacement ratio or suitable ratio determined by the USFWS through ESA Section 7 consultation, pursuant to SM-BIO-14 and consistent with the EACCS, including minimizing indirect impacts to CRLF and CRLF habitat by implementing best management practices such as erosion control, fencing, lighting, noise reduction, and invasive species management; providing habitat restoration, enhancement, creation, and preservation; and monitoring and reporting the effectiveness of mitigation and the status of the CRLF population and habitat. With implementation of all measures required by the USFWS/Corps through ESA Section 7 consultation, and consistency with the EACCS, the requirements of SM-BIO-14 would be achieved concurrently.

With implementation of these mitigation measures, impacts to CTS and CRLF would be reduced to a less-than-significant level.

Alameda Whipsnake and Western Pond Turtle The Alameda whipsnake was identified by the CNDDB as occurring within five miles of the project site; however, after an assessment of the site, it was concluded that the site does not provide habitat to support Alameda whipsnake. Due to the distance of the CNDDB occurrence and the abundance of dispersal barriers, Alameda whipsnake is presumed absent from the project site.

The CNDDB has listed western pond turtle as occurring within five miles of the project site, with the closest occurrence located 0.75 mile east of the project site. The permanent water located within the intermittent drainage in the northwest corner of the project site provides suitable habitat for western pond turtle; therefore, the western pond turtle has a moderate potential to occur on the project site. Development of the proposed project would result in the loss of habitat for western pond turtles. In addition, grading and other construction activities could result in mortality or harm of individual western pond turtles. The proposed project would be required to implement Mitigation Measures 3.7/20.0 through 3.7/22.0, as identified in the Eastern Dublin EIR. Implementation of these measures would reduce potential direct impacts to western pond turtle to a less-than-significant level by requiring pre-construction surveys for western pond turtle and establishment of a buffer around identified breeding sites for western pond turtle. With implementation of these mitigation measures, impacts to western pond turtles would be reduced to a less-than-significant level.

Vernal Pool Fairy Shrimp and Longhorn Fairy Shrimp. The vernal pool fairy shrimp and longhorn fairy shrimp were identified by the CNDDB as occurring within five miles of the project site. The location of the vernal pool fairy shrimp occurrence (Occurrence #99; 2000) is located 4.2 miles northeast of the project site within an alkali sink. The location of the longhorn fairy shrimp occurrence (Occurrence #24; 2018), is located 4.8 miles east of the project site. Suitable habitat in the form of seasonal wetlands/ponds occur on the project site; however, after wet and dry season protocol surveys were conducted in 2018 and 2022 with negative findings, these species are presumed absent. A listed branchiopod survey report was prepared in 2022 as a separate document with no listed vernal pool branchiopods observed on the project site. No impacts to special-status invertebrates would occur. Therefore, no mitigation measures, as identified in the EDSP EIRs would apply.

For the reasons identified above, with implementation of the mitigation measures identified in the EDSP EIRs, no new impacts or substantially more severe significant impacts to special-status species, beyond those identified in the EDSP EIRs, would occur.

(b) Substantial adverse effect on any riparian habitat or other natural community

The project site consists entirely of undeveloped grazing ranchland and open space. As previously discussed, five habitat types were identified within the project site during the plant surveys, including seasonal wetland/pond, drainages, emergent marsh, and riparian woodlands. The willows and Fremont cottonwoods that surround the quarry pond within the northern portion of the project site and the intermittent drainage within the northwestern corner of the project site qualify as riparian associated trees as they are growing among several wetland features and are species that are associated with the interface between land and water. These riparian trees would be regulated by CDFW. Implementation of the proposed project would require removal of these trees to accommodate proposed development. In addition, as described further below, the proposed project could also permanently impact jurisdictional waters including seasonal wetlands and other waters present on the project site.

Implementation of Mitigation Measures SM-BIO-5 through SM-BIO-8, as identified in the 2002 SEIR and Supplemental Mitigation Measure SM-BIO-1, as identified in the Fallon Village SEIR, would reduce potential impacts to sensitive natural communities to a less-than-significant level by requiring Stage 2 development proposals be designed to avoid and minimize adverse effects to waters of the United States, detailing the requirements for the creation, restoration or enhancement of wetlands, intermittent streams or other waters if avoidance and minimization is infeasible, implementing the Resource Management Plan, and detailing requirements for either a conservation easement or mitigation site if impacts to special-status plants cannot be avoided.

As discussed in the CEQA Bio Mitigation Measures Status and Implementation Plan, the proposed project has been designed to avoid and minimize adverse effects of waters of the United States (WOTUS) to the extent feasible, pursuant to SM-BIO-5. Specifically, the size of the proposed grading footprint has been reduced to allow of deed-restricted preservation of approximately 10.4 acres of waters and wetlands, including streams and associated riparian habitat and upland buffers. These avoidance areas include avoidance of the riparian woodland lining the drainage in the northwest corner of the property, along Fallon Road.

The proposed project also includes preservation of on-site willow riparian woodland occurring on the northwest corner of the project site and the widening and daylighting of portions of the downstream reaches of the perennial stream along Fallon Road, a portion of which currently flows through closed culvert pipes. To further address impacts to riparian habitat, a creek enhancement and mitigation design plan has been prepared for Jordan Creek as part of a separate and distinct project [14], which is located at the northwest corner of the project site and extends off-site in a northeast direction.

Additionally, the proposed project would obtain authorization from the Corps, Regional Water Quality Control Board (RWQCB), CDFW, and USFWS as applicable. The permitting programs administered by these agencies (including compliance with California Fish and Game Codes 1602 and 2081, the CWA, Porter Cologne Water Quality Control Act, and State and Federal ESAs) would require the proposed project to avoid, minimize and compensate for potential impacts to all aquatic resources and special-status species and their habitats, including CRLF as previously discussed. With implementation of the agency-required avoidance, minimization and compensatory mitigation measures for the proposed project, the requirements of SM-BIO-5 would be achieved concurrently.

With implementation of these mitigation measures and regulatory requirements, no new impacts or substantially more severe significant impacts related to sensitive natural communities, beyond those identified in the EDSP EIRs, would occur.

(c) Substantial adverse effect on wetlands

As detailed in the Biological Resources Assessment prepared for the project site in October 2022, the project site contains wetlands and waters that could be considered jurisdictional by the Corps, RWQCB, and the CDFW. As described above, the project site supports four linear drainages that flow from north to south across the central northern portion of the project site. An additional linear drainage flows north to south along the eastern project site boundary. Water from an intermittent drainage in the northwestern corner of the project site enters a culvert, which flows under the project site and ultimately discharges into a roadside ditch adjacent to the project site. The roadside ditch and culvert eventually overflow onto the project site, creating a large emergent wetland. A complex of seasonal wetland depressions occurs within the southern portion of the project site and along the southern boundary. Additional wetlands were observed along the fringe of the quarry pond located in the northeastern corner of the project site. All of these features could be considered jurisdictional waters/wetlands by the Corps and Regional Water Quality Control Board (RWQCB) due to their hydric soils, dominant hydrophytic vegetation and hydrological conditions. In addition, as described above, riparian woodland surrounds the quarry pond and intermittent drainage in the northern portion of the project site. All of these features would be impacted by the proposed project.

The 2002 SEIR identified potentially significant impacts to seasonal wetlands and intermittent streams and included mitigation measures to reduce these impacts to a less-than-significant level. Consistent with Mitigation Measures SM-BIO-6 and SM-BIO-7, identified in the 2002 SEIR, the proposed project would be required to mitigate impacts to wetlands at a 2:1 ratio through

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[14] ENGEO Incorporated. 2023. *GH PacVest Property Mitigation Creek, Dublin, California, Jordan Creek Geomorphic Basis of Design Report.* October 11. Revised October 20.

the creation, restoration or enhancement of wetlands, intermittent streams or other waters either on-site (SM-BIO-6) or off-site (SM-BIO-7).

As discussed in the CEQA Bio Mitigation Measures Status and Implementation Plan, the proposed project would mitigate unavoidable impacts to creeks and wetlands at a minimum ratio of 2:1 (measured by acre), pursuant to SM-BIO-6 and SM-BIO-7 and consistent with the EACCS. EACCS mitigation measures related to wetlands, intermittent streams and other waters are designed to protect and enhance the ecological functions and values of these aquatic resources. Consistent with the EACCS, the proposed project's mitigation would establish performance standards and success criteria. Mitigation of impacts on creeks and wetlands would be achieved through a combination of on-site creation/preservation, in combination with compensatory mitigation on parcels within the same regional watershed and obtaining credits from N3 Ranch mitigation or other agency-approved alternative mitigation bank or turnkey mitigation site.

Additionally, the proposed project would obtain authorization from the Corps, RWQCB, CDFW, and USFWS as applicable. The permitting programs administered by these agencies (including compliance with California Fish and Game Codes 1602 and 2081, the CWA, Porter Cologne Water Quality Control Act, and State and Federal ESAs) would require the proposed project to compensate for potential impacts to all aquatic resources and are expected to require compensatory mitigation for loss of aquatic resources at a ratio of 2:1 or higher. With implementation of the agency-required compensatory mitigation measures for the proposed project, the requirements of SM-BIO-6 and SM-BIO-7 would be achieved concurrently.

With implementation of these mitigation measures and regulatory requirements, which require compensatory mitigation for loss of wetlands, no new impacts or substantially more severe significant impacts related to wetlands, beyond those identified in the EDSP EIRs, would occur.

(d) Interfere or impede the movement of migratory fish or wildlife or adversely affect nursery sites

The majority of the project site consists entirely of undeveloped grazing ranchland and open space. Much of this grassland is currently dominated by native annual grasses. As described above, the project site supports four linear drainages that flow from north to south across the central northern portion of the project site and an additional linear drainage flows north to south along the eastern project site boundary. An intermittent drainage associated with riparian woodland is located in the northwestern corner of the project site. The intermittent drainage enters a culvert, which flows under the project site and ultimately discharges into a roadside ditch adjacent to the project site. The roadside ditch and culvert eventually overflow onto the project site, creating a large emergent wetland.

CRLF have been observed within the project site and just adjacent to the project site within the ditch along Croak Road. The seasonal wetlands and drainages on the project site contain suitable CRLF breeding and dispersal habitat and the multiple ground squirrel burrow complexes provide suitable upland refuge for both species. In addition, CRLF and CTS may disperse across the project site to breeding habitat off-site. CRLF and CTS are present on-site and are likely to continue to utilize the site for breeding, foraging, and dispersal. Development of the proposed project could impact dispersal of the CRLF and CTS across the project site to breeding habitat off-site. To mitigate potential impacts to CTS and CRLF, the proposed project would be required to implement Mitigation Measures 3.7/20.0 and 3.7/22.0, as identified in the Eastern Dublin EIR, SM-BIO-11, SM-BIO-12, SM-BIO-13, SM-BIO-14, SM-BIO-15, SM-BIO-18 and SM-BIO-19, as identified in the 2002 SEIR, and Supplemental Mitigation Measure SM-BIO-2, Supplemental Mitigation Measure SM-BIO-8 and Supplemental Mitigation Measure SM-BIO-9, as identified in the Fallon Village SEIR. These mitigation measures require pre-construction surveys for CRLF and CTS, the establishment of habitat buffers, and details measures to be taken if avoidance is infeasible. With implementation of these mitigation measures, impacts to CTS and CRLF would be reduced to a less-than-significant level.

In addition, structures present on the project site could support bat maternity roosts and vegetation on or adjacent to the project site could provide nesting habitat for some species of native birds protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code. Implementation of the mitigation measures identified above would reduce potential impacts to nesting birds and bat roosts to a less than significant level by requiring preconstruction surveys, establishment of buffers around active nest/roost sites, and avoidance of these sites during project construction. Overall, with implementation of the aforementioned mitigation measures, no new impacts or substantially more severe significant impacts related to wildlife movement or use of wildlife nursery sites, beyond those identified in the EDSP EIRs, would occur.

(e) Conflict with local policies or ordinance include tree preservation

Heritage trees and approved street trees are protected under the Dublin Municipal Code, specifically Sections 7.56 (Street Trees) and 5.60 (Heritage Trees).

As defined in the Dublin Municipal Code, approved street trees include:

1. Any tree planted within any street right-of-way or adjacent easement, which conforms to the approved streetscape master plan;

2. Any existing tree within the right-of-way or adjacent easement, which conforms to the established species and location in any given area, and which was planted as a required street tree under the provisions of any improvement agreement, or as otherwise approved by the City; or

3. Any tree of the approved species and in an acceptable location, which was or may be planted as a replacement.

Heritage trees include any of the following:

1. Any oak, bay, cypress, maple, redwood, buckeye and sycamore tree having a trunk or main stem of twenty-four (24) inches or more in diameter measured at four (4) feet six (6) inches above natural grade.

2. A tree required to be preserved as part of an approved development plan, zoning permit, use permit, site development review, or subdivision map;

3. A tree required to be planted as a replacement for an unlawfully removed tree.

For private development projects, a permit is required from the City for the removal of any Heritage tree and removal/pruning of any approved street tree. In addition, for any property containing one or more Heritage trees, a plan to protect Heritage trees must be prepared and submitted to the City prior to the issuance of a demolition, grading, or building permit.

As described in the Preliminary Arborist Report, 105 trees representing seven species were identified on the project site, 96 trees within the project boundaries and an additional nine trees located along Croak Road near the intersection with Dublin Boulevard. Within the survey area, Fremont cottonwood (31 trees) and red willows (22 trees) were the most common species and represent 50 percent of the trees assessed. Of the 105 trees, three trees have been identified for potential preservation, including two red willow trees and a single Western Sycamore tree. The single Western Sycamore tree, which may qualify as a Heritage tree per the City of Dublin Municipal Code, would be retained as part of the proposed project pursuant to the City's Heritage Ordinance. However, the Preliminary Arborist Report prepared for the project site noted that due to the trunk damage and low health rating of the Western Sycamore tree, the tree will continue to decline and eventual collapse. The remaining 102 trees would be removed to accommodate proposed development. New trees would be planted as part of the proposed project, which would replace any trees to be removed. Compliance with the City's Heritage Tree Ordinance, including retaining the Western Sycamore tree which may qualify as a Heritage tree per the City of Dublin Municipal Code, would ensure potential impacts related to tree removal would be less than significant and the no conflict with a tree preservation ordinance would occur. Therefore, for the reasons described above, no new impacts or substantially more severe significant impacts related to conflicts with local policies or ordinance protecting biological resources, beyond those identified in the EDSP EIRs, would occur.

(f) Conflict with adopted habitat conservation or natural community conservation plans

The project site is located in Conservation Zone 4 of the East Alameda County Conservation Strategy (EACCS). The City of Dublin utilizes the EACCS as guidance for environmental permitting for public projects, and private development projects are encouraged to use the EACCS as a resource. However, the EACCS is neither a Habitat Conservation Plan nor a Natural Community Conservation Plan, but is a document intended to provide guidance during the project planning and permitting process to ensure that impacts are offset in a biologically effective manner. With implementation of mitigation measures identified above, the project would be consistent with the EACCS. The project site is not subject to any other adopted habitat conservation plan or natural community conservation plan. Therefore, the proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Plan, or other approved local, regional, or State habitat conservation plan. For the reasons described above, no new impacts or substantially more severe significant impacts related to conflicts with adopted habitat conservation or natural community conservation plans, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified biological resources impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to biological resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Olberding Environmental Inc. 2022a. Preliminary Arborist Report for the Dublin Fallon East Property, City of Dublin, Alameda County, California. May.

Olberding Environmental Inc. 2022b. Biological Resources Analysis Report for the Dublin Fallon East Property, City of Dublin, Alameda County, California. October.

Olberding Environmental Inc. 2022c. Special-Status Plant Survey Report for the Dublin Fallon East Property, City of Dublin, Alameda County, California. October.

Olberding Environmental Inc. 2022d. Listed Large Brachiopod Wet Season Survey 90-Day Report for the Dublin Fallon East Property, City of Dublin, Alameda County, California. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

WRA, Environmental Consultants. 2024. Dublin 580 Fallon East: CEQA Bio Mitigation Measures Status and Implementation Plan. February 22.

Cultural Resources

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
5. CULTURAL RESOURCES. Would the project:			
a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines section 15064.5?			X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5?			X
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			X

Environmental Setting

CEQA defines a “historical resource” as a resource which meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources (California Register);
- Listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k);
- Identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code; or
- Determined to be a historical resource by a project's lead agency (PRC Section 21084.1 and State CEQA Guidelines Section 15064.5[a]).

The California Register defines a “historical resource” as a resource that meets one or more of the following criteria: (1) associated with events that have made a significant contribution to the broad patterns or local or regional history of the cultural heritage of California or the United States; (2) associated with the lives of persons important to local, California, or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation. Under CEQA, historical resources can include precontact (i.e., Native American) archaeological deposits, historic-period archaeological deposits, historic buildings, and historic districts.

As described in the cultural resources study[15] prepared for the proposed project by Peak and Associates Inc. on May 27, 2022, a record search was conducted through the Northwest Information Center (NWIC) of the California Historical Resources Information System on February 23, 2022, to identify previous archaeological site records and cultural resource studies within the project site and vicinity. The NWIC, an affiliate of the Office of Historic Preservation (OHP), is the official State repository of cultural resources records and reports for Alameda County. The search encompassed the project site and surrounding 0.25-mile radius.

One prehistoric period resource, CA-ALA-508/H (P-01-00214) was recorded in the western portion of the project site in 1988. The site area was used as a pasture and corral in the historic era, and a light scatter of historic period artifacts were present. In May 2009, a program of backhoe trenching was conducted in which 20 trenches were excavated within the reported site area. Of the 20 trenches, 18 were entirely sterile. One trench contained historic period glass fragments. One trench yielded five fragments of a sandstone metate (or mealing stone). The materials from the site observed in 1988 were no longer present at the site. It was concluded that the site was a low-density surface site with no significant subsurface cultural deposits. As referenced in the cultural resources study prepared by Peak and Associates Inc., numerous other surveys with negative results have been conducted in the project site radius. A complete list of these surveys is provided as Appendix 2 of the cultural resources study.

A request was submitted to the Native American Heritage Commission (NAHC) to search the Sacred Lands File (SLF) for Native American cultural resources that may be impacted by the proposed project. The NAHC maintains the SLF database and is the official State repository of Native American sacred-site location records in California. Cody Campagne, NAHC Cultural Resources Analyst, responded to the SLF search request on April 8, 2022, stating that the results were negative and that there were no known Native American cultural resources in the project site. The letter noted, however, that "the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area." In response to a more recent search request, Cody Campagne, NAHC Cultural Resources Analyst, responded on November 3, 2023, stating that the results were negative and that there were no known Native American cultural resources in the project site.

A survey of the project site was conducted from March 8 to 10, 2022. The project site has historically been and is currently used for cattle pasture, and includes remnants of corrals, fencing, and debris from removed dwellings and outbuildings. The portion of the project site east of Croak Road contained the remains of a mine on the north side, and associated equipment and debris radiating outward throughout the north half of the parcel. The age of this operation was determined to be modern. At the former house and building sites depicted on the USGS maps, no structures remain, but various household and building materials were present and may be associated with the former buildings. Brick, terracotta pipe fragments, aqua glass fragments, concrete chunks and windows glass were visible on the surface in all the

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15 Peak, Melinda A., Peak & Associates, Inc. 2022. *Cultural Resource Assessment for the Chen Anderson Project, City of Dublin, Alameda County, California.* May 27.

building areas. Old lumber and steel hardware was scattered and piled near one location. Two fire hydrants of unknown age and good condition remain near the locations of the two previous buildings east of Croak Road.

Remains of a corral and loading chute, water trough, and associated cattle-tending equipment were identified along the west boundary of the project site. The age of this collection could not be determined due to the wide variety in age of materials and equipment; however, the cultural resources study did not identify the collection as meeting the definition of a historical resource. No other historical or prehistoric resources were encountered.

In summary, no prehistoric or historic cultural resources were found to be present on the project site. However, archaeological cultural resources could still be encountered during construction at the project site.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to the disruption or destruction of identified and unidentified prehistoric resources, and disruption or destruction of identified and unidentified historic resources. Mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following mitigation measures would apply to the proposed project:

> **MM 3.9/1.0** All locations of prehistoric resources will need a program of mechanical and/or hand subsurface testing to determine the presence or absence of midden deposits associated with the surface indictors of aboriginal presence.
>
> **MM 3.9/2.0** All locations containing either midden components or concentrations of cultural materials located on the surface will be recorded on State of California site survey forms. The borders of any midden deposits or concentrations of cultural materials (other than single isolated artifact discoveries) will be staked so that accurate location maps can be produced by professional survey teams.
>
> **MM 3.9/3.0** If it can be demonstrated that these recorded and mapped locations will be impacted in any manner by future construction or indirectly impacted as a result of increased access to the area, a plan of evaluative testing of each resource will have to be devised in order to prepare responsive mitigation measures. Evaluative testing will consist of the collection and analysis of any surface concentrations of cultural materials, and the hand excavation and analysis of the scientific content of any midden components discovered during present or absence testing.
>
> **MM 3.9/4.0** The City shall retain the services of a qualified archaeologist to develop a protection program for prehistoric sites which contain either a surface or subsurface deposit of cultural materials or information which qualify under Appendix K of CEQA as

"significant" and which are located in areas of the project site where development will significantly alter the current conditions of the prehistoric resource.

MM 3.9/5.0 The discovery of historic or prehistoric remains during grading and construction will result in the cessation of such activities until the significant and extent of those remains can be ascertained by a certified archaeologist.

MM 3.9/6.0 The City of Dublin will require the following series of actions as part of the application process for development in eastern Dublin: site sensitivity determination; detailed research and field reconnaissance by a certified archaeologist; development of a mitigation plan pursuant to the policies of the EDSP and current CEQA guidelines.

MM 3.9/7.0 All properties with historic resources, which may be impacted by future development shall be subjected to in-depth archival research to determine the significance of the resources prior to any alteration.

2002 SEIR

Cultural resources were addressed in the Initial Study for the 2002 SEIR. No potentially significant impacts or mitigation measures were identified.

Fallon Village SEIR

The Fallon Village SEIR determined that although the Fallon Village Project proposed a similar type and density of development analyzed in the Eastern Dublin EIR and 2002 SEIR, due to changes in the project design and identification of new historic resources not identified in the EDSP EIRs, new impacts to cultural resources, including potential impacts on unknown prehistoric resources on the Fallon Enterprises, Jordan and Chen Properties, potential impacts to the historic Fallon House and at the historic Croak Ranch Homestead could occur. Supplemental mitigation measures were identified to reduce potential impacts to cultural resources on these properties to a less-than-significant level. The following supplemental mitigation measures apply to the proposed project:

SSM-CUL-3. Prior to approval of a Stage 2 Development Plan for the Jordan and Chen properties, a detailed cultural resources assessment of combined historic/ prehistoric site at the 4J Ranch site (CA-Ala-508/H) shall be conducted to determine if the site is eligible for the California Register of Historical Resources. All mitigation measures identified in that study shall be incorporated into the Stage 2 Development Plan approval conditions.

Project Impacts and Mitigation Measures

(a) Historic resources

For a cultural resource to be considered a historical resource (i.e., eligible for listing in the CRHR), it generally must be 50 years or older. Under CEQA, historical resources can include precontact (i.e., Native American) archaeological deposits, historic-period archaeological deposits, historic buildings, and historic districts. CEQA requires agencies considering projects that are subject to discretionary action to consider the potential impacts on cultural resources that may occur from project implementation (see CEQA Guidelines Section 15064.5).

As described above, no prehistoric or historic cultural resources were found on the project site. However, it cannot be entirely ruled out that archaeological cultural resources could be encountered during construction at the project site. Should archaeological deposits be encountered during project ground disturbance, a substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). If such resources are encountered, implementation of MM 3.9/5.0 and MM 3.9/6.0 identified in the Eastern Dublin EIR would reduce any potential impacts to archaeological and/or Native American resources to a less-than-significant level, by requiring a site sensitivity determination, detailed research, and field reconnaissance by a certified archaeologist, development of a mitigation plan pursuant to the policies of the EDSP and current CEQA guidelines and cessation of construction activities if unanticipated historic or prehistoric remains are uncovered during ground disturbing activities. Therefore, with adherence to MM 3.9/5.0 and MM 3.9/6.0 identified in the Eastern Dublin EIR, no new impacts or substantially more severe significant impacts to historic resources, beyond those identified in the EDSP EIRs, would occur.

(b) Archaeological resources

Pursuant to CEQA Guidelines Section 15064.5(c)(1), "When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource." Archaeological sites that do not qualify as historical resources shall be assessed to determine if they qualify as "unique archaeological resources" pursuant to California Public Resource Code Section 21083.2. Archaeological deposits identified during project construction (if any) shall be treated by the City—in consultation with a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archeology—in accordance with MM 3.9/5.0 and MM 3.9/6.0 identified in the Eastern Dublin EIR. These measures, which require a site sensitivity determination, detailed research, and field reconnaissance by a certified archaeologist, development of a mitigation plan pursuant to the policies of the EDSP and current CEQA guidelines and cessation of construction activities if unanticipated historic or prehistoric remains are uncovered during ground disturbing activities would reduce potential impacts to any archaeological resources discovered during project construction to a less-than-significant level. Therefore, with adherence to MM 3.9/5.0 and MM 3.9/6.0 identified in the Eastern Dublin EIR and described above, no new or substantially more severe significant impacts to archaeological resources, beyond those identified in the EDSP EIRs, would occur .

(c) Human remains

Based on previous archaeological investigation and analysis and summarized above, there is a low potential for the disturbance of archaeological cultural resources or human remains.

However, in the event that human remains are encountered at any time during project work, State 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 PRC Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be Native American, the County Coroner shall notify the NAHC within 24 hours. The NAHC shall determine and notify a Most Likely Descendant (MLD) per PRC Section 5097.98. With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. The MLD's recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment.

Compliance with Section 7050.5 of the California Health and Safety Code and Public Resources Code Section 5097.98 regarding the treatment of human remains, which detail measures to be taken if unanticipated human remains are uncovered during construction of the project, would ensure that potential impacts to human remains would be less than significant. With adherence to applicable regulatory requirements, no new or substantially more severe significant impacts to human remains, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified cultural resources impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to cultural resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

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Peak & Associates, Inc. 2022. Cultural Resource Assessment for the Chen Anderson Project, City of Dublin, Alameda County, California. May 27.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Energy

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
13.	**ENERGY. Would the project:**			
a)	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X
b)	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X

Environmental Setting

The project site is located within Fallon Gateway of the EDSP. Commercial and industrial land within Fallon Gateway, east of Fallon Road, is required to incorporate the following sustainability practices:

- Build off the City's Complete Streets Policy and incorporate complete streets concepts within the private development's circulation system to ensure strong bicycle, pedestrian and transit connections within and between private developments and connections to the City's streets and existing and future transit hubs.
- Strong bicycle and pedestrian connections per the vision and goals of the City's Bicycle and Pedestrian Master Plan.
- Electric vehicle charging stations within each development.
- Transportation Demand Management (TDM) measures to reduce the demand of single occupancy vehicles, such as transit subsidy programs, shuttles, showers/lockers, bike share programs, parking, mobility and micromobility hubs.
- Buildings and related private infrastructure to help with electric grid management, by incorporating load shifting technologies, solar panels, battery storage and micro-grids.
- Reduce consumption of materials through reuse or recycling of all municipal solid waste materials back into nature or the marketplace in a manner that protects human health and the environment toward zero-waste goals.
- Incorporate smart cities technology infrastructure, and fiber-optic communications infrastructure.

- Street infrastructure for private drive aisles and streets and public streets certified as Greenroads.org Gold level or greater, ASCE Envision Rating of Gold or greater or similar equivalent.
- Design and construct buildings that meet the requirements to achieve Leadership in Energy and Environmental Design (LEED) Gold status or above.

Electricity

Electricity is a man-made resource. The production of electricity requires the consumption or conversion of energy resources (including water, wind, oil, gas, coal, solar, geothermal, or nuclear resources) into energy. Electricity is used for a variety of purposes (e.g., lighting, heating, cooling, and refrigeration, and for operating appliances, computers, electronics, machinery, and public transportation systems).[16] In 2022, California consumed approximately 287,826 gigawatt-hours (GWh) or 287,826,110,475 kilowatt-hours (kWh).[17] Of this total, Alameda County consumed 10,395 GWh or 10,395,384,395 kWh.[18]

Natural Gas

Natural gas is a non-renewable fossil fuel. Fossil fuels are formed when layers of decomposing plant and animal matter are exposed to intense heat and pressure under the surface of the Earth over many years. Natural gas is a combustible mixture of hydrocarbon compounds (primarily methane) that is used as a fuel source. Natural gas is found in naturally occurring reservoirs in deep underground rock formations. Natural gas is used for a variety of uses (e.g., heating buildings, generating electricity, and powering appliances such as stoves, washing machines and dryers, gas fireplaces, and gas grills).[19] In 2022, California consumed approximately 11,711 million therms or 11,710,641,194 therms, while Alameda County consumed approximately 377 million therms or approximately 377,309,788 therms.[20]

Fuel

Petroleum is also a non-renewable fossil fuel. Petroleum is a thick, flammable, yellow-to-black mixture of gaseous, liquid and solid hydrocarbons that occurs naturally beneath the earth's surface. Petroleum is primarily recovered by oil drilling. It is refined into a large number of consumer products, primarily fuel oil and gasoline. Gasoline is the most used transportation fuel in California, with 97 percent of all gasoline being consumed by light-duty cars, pickup trucks, and sport utility vehicles. Based on fuel consumption obtained from EMFAC2021, vehicle

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16 California Energy Commission, 2022. 2022 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation (accessed October 2023).

17 California Energy Commission, 2023. Energy Consumption Data Management Service. Electricity Consumption by County. Website: www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed October 2023).

18 Ibid.

19 U.S. Energy Information Administration. 2022. Natural Gas Explained-Use of Natural Gas. Website: https://www.eia.gov/energyexplained/natural-gas/use-of-natural-gas.php (accessed October 2023).

20 California Energy Commission, 2023. Energy Consumption Data Management Service. Gas Consumption by County. Website: www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed October 2023).

trips in Alameda County in 2023 are anticipated to consume 155.9 million gallons of diesel fuel and 553.9 million gallons of gasoline.

Previous CEQA Documents

Eastern Dublin EIR

At the time the Eastern Dublin EIR was prepared, the Environmental Checklist Form (Appendix G of the CEQA Guidelines) did not include energy. Therefore, the Eastern Dublin EIR did not specifically analyze impacts to energy. Because the EDSP EIRs have been certified, the determination of whether energy impacts need to be analyzed for this project is governed by the law on supplemental or subsequent EIRs (Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163). Utilities and service systems impacts and mitigation measures, some of which are related to the demand for energy of additional service systems, were identified and found that the demand for utility extensions and consumption of non-renewable natural resources would result in a significant and unavoidable impact. The following mitigation measures would apply to the proposed project:

> **MM 3.4/46.0** Site Planning, Building Design, and Landscaping. The City shall require project applicants to demonstrate that specific site planning, building design, and landscaping measures have been incorporated into their projects to conserve the use of energy during construction and long-term operation. Such measures might include orientation of lots; buildings and windows; protection of solar access; active and passive solar applications; use of energy efficient materials; and function of landscaping. These measures will be incorporated into an energy conservation plan and shall be reviewed and approved by the City as part of specific development proposals.

2002 SEIR

A review of potential utilities impacts, including energy supply, was conducted as part of the 2002 SEIR. The 2002 SEIR determined that no additional utilities/energy supply impacts would occur beyond those identified at the time the Eastern Dublin EIR was certified. However, the 2002 SEIR identified the following supplemental mitigation measures that would be applicable to the proposed project:

> **SM-UTS-1** Require discretionary City review prior to the installation and use of distributed generators, including emergency generators.

> **SM-UTS-2** Prior to approval of future subdivision maps or Site Development Review applications (as may be applicable) by the City of Dublin, project developers shall submit "will serve" letters from PG&E indicating that adequate electricity and natural gas services are available to serve the proposed development project.

Fallon Village SEIR

No additional impacts or mitigation measures were identified in the Fallon Village SEIR.

The City of Dublin adopted a Statement of Overriding Considerations for the significant and unavoidable impact described above, which includes the project.

Project Impacts and Mitigation Measures

(a) Wasteful consumption of energy resources

The EDSP EIRs determined that development of the EDSP area would result in a significant and unavoidable impact due to the consumption of non-renewable natural resources, including energy consumption. Mitigation measures are identified in the EDSP EIRs to minimize this impact but were insufficient to reduce impacts to a less-than-significant level and, therefore, a Statement of Overriding Considerations was adopted for the project. Since preparation of the EDSP EIRs, the California Building Energy Efficiency Standards contained in Title 24 in the California Code of Regulations have been revised and updated to include more stringent requirements to prevent the unnecessary consumption of energy. Any future development on the project site would be required to comply with these standards. In addition, Chapter 7.94, Green Building, of the City of Dublin Municipal Code encourages sustainable construction in the following categories: planning and design, energy efficiency, water efficiency and conservation, materials conservation and resource efficiency and environmental quality. Furthermore, commercial and industrial land within Fallon Gateway, east of Fallon Road, is required to incorporate the sustainability practices, as described above.

(b) Conflict with local plan for renewable energy

The proposed project does not contain any features that would conflict with or obstruct a State or local plan for renewable energy or energy efficiency and is required to comply with state and local energy regulations, as described above.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified energy impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to energy resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

California Energy Commission, 2023. California Gasoline Data, Facts, and Statistics. Website: https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-gasoline-data-facts-and-statistics#:~:text=Gasoline%20is%20the%20most%20used,of%20Tax%20and%20Fee%20Administration%20 (accessed October 2023).

California Energy Commission, 2022. 2022 Total System Electric Generation. Website: https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/2022-total-system-electric-generation (accessed October 2023).

California Energy Commission, 2023. Energy Consumption Data Management Service. Electricity Consumption by County. Website: www.ecdms.energy.ca.gov/elecbycounty.aspx (accessed October 2023).

California Energy Commission, 2023. Energy Consumption Data Management Service. Gas Consumption by County. Website: www.ecdms.energy.ca.gov/gasbycounty.aspx (accessed October 2023).

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

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Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Geology and Soils

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
6. GEOLOGY AND SOILS. Would the project:			
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:			
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?			X
ii) Strong seismic ground shaking?			X
iii) Seismic-related ground failure, including liquefaction?			X
iv) Landslides?			X
b) Result in substantial soil erosion or the loss of topsoil?			X
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?			X
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?			X
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?			X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X

Environmental Setting

The following discussion is based on the results of the Preliminary Geotechnical Investigation prepared for the proposed project (Appendix H).

The project site is located within the Coast Range Geomorphic Province of Northern California. This province is generally characterized by northwest-trending mountain ranges and intervening valleys, which reflect the dominant northwest structural trend of the bedrock in the region.

The hill front along the northern portion of the project site is mapped as underlain by Plio-Pleistocene Livermore Gravels or nonmarine sedimentary units of the Tassajara Formation. Bedrock bedding is shown generally striking northwest and dipping steeply (85 degrees) to the southwest. At the base of slopes crossing the middle of the site, transitional slopes (mid-level terraces) are mapped as Pleistocene alluvial fan deposits and Holocene floodplain deposits further south extending into the valley portion of the site.

The Calaveras Fault separates the lowlands of the Dublin Valley from the hill areas to the west. The nearest active fault to the project site is the Mount Diablo Thrust, which is located approximately two miles from the site. This fault is considered capable of a moment magnitude earthquake of 6.7. Other active faults in the vicinity of the project site include the Hayward-Rodgers Creek, San Andreas, and Greenville faults, which are all considered active faults. The project site is not located within a State-designated Alquist-Priolo Earthquake Fault Zone.

The project site ranges in elevation from approximately 355 feet above mean sea level (msl) in the south to approximately 576 feet above msl to the north. The southern portion of the project site is relatively level, transitioning to gently sloping hills in the northern portion.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to earthquake ground shaking, alteration of landforms, expansive soils, landslide and slope stability, and erosion and sedimentation. With the exception of the primary effects associated with seismic ground shaking, which was determined to be significant and unavoidable and, therefore, a Statement of Overriding Considerations was adopted for the project. All other impacts related to geology and soils would be reduced to less than significant with implementation of mitigation measure identified in the Eastern Dublin EIR. The following mitigation measures would apply to the proposed project:

> **MM 3.6/1.0** The primary effects of ground shaking to structures and infrastructures can be reduced to a generally acceptable level below failure/loss of life by using modern seismic design for resistance to lateral forces in construction. Building in accordance with Uniform Building Code and applicable County and City code requirements should reduce the potential for structural failure, major structural damage, and loss of life. However, some structural damage may occur, and it is possible that some residences/structures and infrastructures will not be safe for occupation/use after a large earthquake.

MM 3.6/2.0 In relatively flat areas which can be developed with minimal grading (the southern portion of the Project site and along Tassajara and Cottonwood Creeks):

- Locate improvements off (setback from) unstable and potentially unstable landforms such as landslides, colluvium filled swales, creek banks, and steep hill slopes.
- Remove, stabilize or reconstruct potentially unstable landforms, or
- Employ modern design, including appropriate foundation design and applicable codes and policies, in the construction of improvements that must be located on potentially unstable landforms or in areas underlain by alluvium with shallow groundwater levels which could be locally susceptible to liquefaction.

MM 3.6/4.0 Engineered retention structures and surface and subsurface drainage improvement should be uses as appropriate to improve the stability of sidehill fills and potentially unstable materials, particularly colluvium not entirely removed by grading.

MM 3.6/5.0 Seismically induced fill settlement can be substantially reduced if fills are properly designed with keyways and subsurface drainage, and are adequately compacted (i.e., minimum 90 percent relative compaction as defined by the American Society for Testing and Materials (ASTM) test method D1557).

MM 3.6/6.0 Design roads, structural foundations, and underground utilities to accommodate estimated settlement without failure, especially across transitions between fills and cuts. Potentially unstable stock pond embankments should be removed in development areas, unless they are reconstructed to current earthquake design standards.

MM 3.6/7.0 Final design of improvements in the Project site should be made in conjunction with a design-level geotechnical investigations and the reports should be submitted to the City of review prior to issuing any permits. These investigations should incorporate stability analysis of both natural slopes that could impact planned improvements, and planned engineered (cut and fill) slopes, assuming saturated conditions and earthquake shaking. Significant slopes should achieve a minimum factor of safety against failure of 1.5 for static conditions (where 1.0 is failure) and 1.2 under design pseudo-static earthquake loading. A displacement analysis should be performed for critical slopes to confirm the effectiveness of mitigation measures.

MM 3.6/14.0 The potential impact of expansive soils and rock with respect to Project improvements can be significantly reduced, or in many cases prevented by the recognition and characterization of site-specific conditions, and the formulation of appropriate design-level geotechnical investigation conducted for each specific proposed project.

MM 3.6/15.0 The potential for shrink and swell of expansive soils and rock can be reduced by controlling moisture and by treatment through measures listed below. Subsurface drainage alone is not generally effective against the effects of regional wet/drought cycles. Required measures for a specific project should be based on the recommendation of the project geotechnical consultant and approved by the City and include:

- Moisture conditioning prior to construction;
- Construction of surface and subsurface drainage to control infiltration after construction;
- Lime treatment, which can be used to produce non-expansive fill.

MM 3.6/16.0 The potential effects of expansive soil can be reduced by appropriate foundation and pavement design, including those design elements listed below.

- Adjustable foundation systems are not generally effective against the effects of regional wet/drought cycles and are considered undesirable because the systems require periodic maintenance, and their use should be discouraged. Appropriate design criteria should be developed by the project geotechnical consultant and approved by the City:
- Founding structural foundations below the zone of seasonal moisture change;
- Use of structurally supported floors; and
- Removal and replacement with non-expansive fill beneath structure slabs and asphaltic concrete.

MM 3.6/27.0 The potential impacts of short-term construction-related erosion and sedimentation can be reduced by timing grading activities to avoid the rainy season as much as possible, and by implementing one or more of the following interim control measures, which are designed to prevent concentration of runoff, control runoff velocity, and trap silt. Required measures for a specific project will be determined by the City and be a requirement of the grading permit.

- Water bars;
- Mulch-and-net blankets on exposed slopes;
- Straw bale dikes;
- Temporary culverts and swales;
- Sediment traps; and/or
- Silt fences.

MM 3.6/28.0 The potential impacts of long-term erosion and sedimentation can be reduced by the appropriate design, construction, and continued maintenance of surface and subsurface drainage of one or more of the following long-term control measures.

- Required measures for a specific project should be based on the recommendations of the project geotechnical consultants and approved by the City.
- Construction of sediment catch basins at strategic locations to prevent off site sedimentation from existing and/or potential on site sources;
- Design and construction of storm sewer systems that incorporate the cumulative effects of project buildout;
- Creek bank stabilization and repair of existing gullies;
- Revegetation and continued maintenance of graded slopes;
- Construction of drainage ditches or cut and fill slopes and/or natural slopes above developed areas;
- Closed downspout collection systems for individual structures;
- Design of cut and fill slopes to minimize, as much as possible, natural low velocity sheet flow runoff; and
- Periodic homeowner/landowner maintenance.

2002 SEIR

Geology and soils were addressed in the Initial Study for the 2002 SEIR. No potentially significant impacts or mitigation measures were identified.

Fallon Village SEIR

The Fallon Village SEIR determined that although the Fallon Village Project proposed a similar type and density of development analyzed in the Eastern Dublin EIR and 2002 SEIR, due to proposed changes in grading policies and an increase in the proposed urbanized area, new impacts related to geology and soils could occur. Potentially significant impacts related to soil hazards/landslides and increased development were identified. Supplemental mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following supplemental mitigation measures are applicable to the proposed project:

SM GEO-1 (potential soil hazards due to alteration in the extent of Project grading). Prior to construction, design level geotechnical report(s) and corrective grading plan(s) depicting the locations and depths of landslide repairs, keyways and subsurface drains is required. The corrective grading plans shall identify appropriate mitigation for graded slopes. In order to stabilize slopes where unstable geologic materials extend at beyond proposed development area, geotechnical corrective grading may extend beyond the limits of improvements and into open space areas. Grading in open space areas shall be limited to excavations that remove unstable soils and landslide debris and backfilling excavations with compacted, drained engineer fills. To provide stable construction slopes, the back slopes of excavated areas may extend up slope and beyond the limits of mapped slides. The corrective measures used will be typical and configured to conform at natural slope contours with materials and compaction at the approval of a geotechnical engineer. This may vary from original grade within repair envelope due to geotechnical and slope drainage considerations.

Project Impacts and Mitigation Measures

(a) Seismic hazards

Potential impacts related to seismic hazards are described below.

Fault Rupture. The project site is not located within or adjacent to an Alquist-Priolo Earthquake Fault Zone. Therefore, the project would have no impact related to fault rupture.

Ground Shaking. The project site and the entire San Francisco Bay Area are located in a seismically active region subject to strong seismic ground shaking. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake and is normally the major cause of damage in seismic events. The extent of ground-shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The magnitude of a seismic event is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. The intensity of an earthquake is a subjective measure of the perceptible effects of a seismic event at a given point. The Modified Mercalli Intensity (MMI) scale is the most commonly used scale to measure the subjective effects of earthquake intensity. It uses values ranging from I to XII.

Mapping has been compiled by the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) for the likely shaking intensities in the Bay Area that would have a 10 percent chance of occurring in any 50-year period. A large earthquake (magnitude 6.7 or greater) on one of the major active faults in the region would generate severe (MMI 8) ground shaking at the project site.

The most significant adverse impact associated with strong seismic shaking is potential damage to structures and improvements. The risk of ground shaking impacts is reduced through adherence to the design and materials standards set forth in building codes. The City of Dublin has adopted the 2022 CBC (Title 24, Part 2 of the California Code of Regulations), which provides for stringent construction requirements on projects in areas of high seismic risk. The design and construction for the proposed project would be required to conform with, or exceed, current best standards for earthquake resistant construction in accordance with the most recent CBC adopted by the City and with the generally accepted standards of geotechnical practice for seismic design in Northern California, consistent with Mitigation Measure 3.6/1.0, identified in the Eastern Dublin EIR. In addition, the proposed project would be designed and constructed in accordance with the site-specific grading and construction techniques identified in the Preliminary Geotechnical Exploration to reduce impacts related to seismic ground shaking to a less-than-significant level. With adherence to regulatory requirements and mitigation measures identified in the EDSP EIRs, no new impacts or substantially more severe significant impacts related to ground shaking, beyond those identified in the EDSP EIRs, would occur.

Liquefaction. Liquefaction is the transformation of loose, fine-grained sediment to a fluid-like state similar to quicksand. This phenomenon occurs due to strong seismic activity and lessens the soil's ability to support a structural foundation. The primary factors affecting the possibility of liquefaction in soil are: (1) intensity and duration of earthquake shaking; (2) soil type and relative density; (3) overburden pressures; and (4) depth to groundwater. Soil most susceptible to liquefaction is clean, loose, fine-grained sands and non-plastic silts that are saturated.

The California Geological Survey (CGS) has mapped Seismic Hazard Zones that delineate areas susceptible to liquefaction and/or landslides that require proposed new developments in these areas to conduct additional investigation to determine the extent and magnitude of potential ground failure. According to mapping by CGS, portions of the project site are mapped as a liquefaction hazard zone. The proposed project would be designed and constructed consistent with the most current earthquake resistance standards for Seismic Zone 4 in the CBC and the site-specific recommendations identified in the Preliminary Geotechnical Exploration, which includes specifications for site preparation, such as grading and compaction requirements and foundation design criteria. In addition, implementation of mitigation measures MM 3.6/2.0, MM 3.6/4.0, MM 3.6/5.0, MM 3.6/6.0, and MM 3.6/7.0, identified in the Eastern Dublin EIR and described above would reduce potential impacts associated with these hazards to less than significant by requiring minimal grading and avoidance of unstable landforms, use of retention structures to improve slope stability, adequate compaction of fill material, accommodation of estimated settlement, and implementation of site-specific geotechnical recommendations. With adherence to regulatory requirements and mitigation measures identified in the EDSP EIRs, no new impacts or substantially more severe significant impacts related to liquefaction, beyond those identified in the EDSP EIRs, would occur.

Landslide. Portions of the project site are also mapped by the CGS as a landslide zone. However, as described in the Preliminary Geotechnical Exploration, no known landslides are located within the project site with the exception of over steepened slopes within the former quarry. Therefore, the landslide risk is considered low. Therefore, no new impacts or substantially more severe significant impacts related to landslide, beyond those identified in the EDSP EIRs, would occur.

(b) Erosion/topsoil loss

The potential for soil erosion exists during the period of earthwork activities and between the time when earthwork is completed and new vegetation is established or hardscape is installed. Exposed soils could be entrained in stormwater runoff and transported off the project site. Construction specifications require the preparation of a Stormwater Pollution and Prevention Plan (SWPPP) prior to any ground disturbance activities as required by the National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Construction (Order 2009-009-

DWQ). The SWPPP would provide the details of the erosion control measures to be applied on the project site during the construction period, including Best Management Practices (BMPs) for erosion control that are recognized by the RWQCB. Additional details regarding the SWPPP are provided in Section 9, Hydrology and Water Quality. In addition, the proposed project would be required to comply with Mitigation Measure 3.6/27.0 and Mitigation Measure 3.6/28.0 identified in the Eastern Dublin EIR, to reduce short- and long-term erosion and sedimentation associated with project construction and operation. Compliance with regulatory requirements and implementation of the mitigation measures identified in the EDSP EIRs would ensure impacts related to erosion and loss of topsoil would be reduced to a less than significant level. Therefore, no new impacts or substantially more severe significant impacts related to erosion or loss of topsoil, beyond those identified in the EDSP EIRs, would occur.

(c-d) Soil stability

Expansive soils are characterized by the potential for shrinking and swelling as the moisture content of the soil decreases and increases, respectively. Shrink-swell potential is influenced by the amount and type of clay minerals present and can be measured by the percent change of the soil volume. According to the Preliminary Geotechnical Exploration, expansive clay soils were identified near the surface throughout the project site.

The proposed project would be designed and constructed consistent with the most current earthquake resistance standards for Seismic Zone 4 in the CBC and the site-specific recommendations identified in the Preliminary Geotechnical Exploration, which include specifications for site preparation, such as compaction requirements and foundation design criteria. Therefore, the project site is not anticipated to become unstable as a result of the proposed project, or potentially result in on- or off-site landslides, liquefaction, lateral spreading or settlement. In addition, implementation of mitigation measures MM 3.6/2.0, MM 3.6/4.0, MM 3.6/5.0, MM 3.6/6.0, and MM 3.6/7.0, identified in the Eastern Dublin EIR and described above would reduce potential impacts associated with unstable soils to a less-than-significant level by requiring minimal grading and avoidance of unstable landforms, use of retention structures to improve slope stability, adequate compaction of fill material, accommodation of estimated settlement, and implementation of site-specific geotechnical recommendations. Therefore, no new impacts or substantially more severe significant impacts related to soil stability, beyond those identified in the EDSP EIRs, would occur.

(e) Soil capability to support wastewater disposal, including septic

The proposed project would connect to the existing wastewater conveyance system. On-site treatment and disposal of wastewater is not proposed for the project; therefore, the proposed project would have no impacts associated with soils incapable of supporting alternative wastewater disposal systems. Therefore, no new impacts or substantially more severe significant impacts, beyond those identified in the EDSP EIRs, would occur.

(f) Paleontological/unique geological resources

No paleontological resources or unique geologic features are known to exist within the project site and ground disturbance for the proposed project is not expected to extend deep enough to affect native soils or to impact scientifically important paleontological resources. If such resources are encountered during ground-disturbing activities, implementation of Mitigation Measure 3.9/5.0, as identified in the Eastern Dublin EIR and listed in Section 5. Cultural Resources, which requires work stoppage in the event of discovery, would reduce any potential impacts to paleontological resources to a less-than-significant level. With implementation of this mitigation measure, no new impacts or substantially more severe significant impacts to paleontological resources, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified geology and soils impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to geology and soils beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

California Geological Survey. 2019. California Earthquake Hazards Zone Application. Website: maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed November 2023).

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

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Greenhouse Gas Emissions

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
7.	**GREENHOUSE GAS EMISSIONS. Would the project:**			
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X
b)	Conflict with applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X

Previous CEQA Documents

Since certification of the Eastern Dublin EIR, 2002 SEIR, and Fallon Village SEIR, the issue of the contribution of greenhouse gasses to climate change has become a more prominent issue of concern as evidenced by passage of Assembly Bill 32 in 2006 and Senate Bill 32 in 2016.

Because the EDSP EIRs have been certified, the determination of whether greenhouse gasses and climate change need to be analyzed for this project is governed by the law on supplemental or subsequent EIRs (Public Resources Code Section 21166 and CEQA Guidelines Sections 15162 and 15163). Greenhouse gasses and climate change are not required to be analyzed under those standards unless it constitutes “new information of substantial importance, which was not known and could not have been known at the time the EDSP EIRs were certified as complete” (CEQA Guidelines Section 15162(a)(3)).

Greenhouse gas and climate change impacts were not analyzed in the EDSP EIRs; however, these impacts are not new information that was not known or could not have been known at the time these previous EIRs were certified. The issue of climate change and greenhouse gasses was widely known prior to the certification of these EIRs. The United Nations Framework Convention on Climate Change was established in 1992. The regulation of greenhouse gas emissions to reduce climate change impacts was extensively debated and analyzed throughout the early 1990s. The studies and analyses of this issue resulted in the adoption of the Kyoto Protocol in 1997.

Therefore, the impact of greenhouse gasses on climate change was known at the time of the certification of the EDSP EIRs. Under CEQA standards, it is not new information that requires analysis in a supplemental EIR or Negative Declaration. No supplemental environmental analysis of the project's impacts on this issue is required under CEQA.

Project Impacts and Mitigation Measures

(a-b) Generate greenhouse gas (GHG) emissions or conflict with GHG plans or regulations.

As discussed above, no additional environmental analysis is required under CEQA Section 21166 and CEQA Guidelines Section 15162.

Source(s)

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Hazards and Hazardous Materials

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
8.	**HAZARDS AND HAZARDOUS MATERIALS. Would the project:**			
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X
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?			X
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?			X
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X
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?			X
f)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X
g)	Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X

Environmental Setting

The project site consists almost entirely of undeveloped grazing ranchland and open space. The land uses on nearby properties are largely agricultural, with residential, open space, and commercial.

Phase I Environmental Site Assessments (ESAs) have been prepared for the three properties that comprise the project site, referred to as the Anderson, EBJ and Chen Parcels. The findings of these Phase I ESAs are summarized as follows:

- **Anderson Property.** This property encompasses the approximately 49 acres of the project site located east of Croak Road. As described in the ESA prepared for this property,[21] this portion of the project site consists of a rural residential compound and pastureland used for cattle grazing. Review of historical records indicates that this portion of the project site has consisted of a rural residential compound and pastureland since at least 1940. Several structures were observed within the project site during the site reconnaissance in 2016, including a dilapidated single-family house and five barns/sheds. These structures were subsequently demolished in 2017. Additional site improvements consist of bee boxes, fencing, wooden power poles and two fire hydrants. The site reconnaissance and records review did not find documentation or physical evidence of soil, groundwater or soil gas impairments associated with the use or past use of the portion of the project site. However, given the age of the structures on the project site, it is possible that asbestos-containing materials (ACM) or lead-based paint (LBP) materials are present within the structures.

- **EBJ Property.** This property includes approximately 0.84 acre along the southern boundary of the project site, just west of Croak Road. As described in the ESA prepared for this property,[22] this portion of the project site is currently vacant, undeveloped land. Review of historical aerials indicates that this portion of the project site was developed with structures in the late 1950s and remained developed until at least 1968. Based on review of the historical aerials, a service station may have been present from the late 1950s to the late 1960s. Due to lack of readily available information, it is unclear if an underground storage tank(s) remain on the project site and/or if contamination is present.

- **Chen Property.** This property encompasses the approximately 135 acres of the project site located between Fallon Road and Croak Road. As described in the ESA prepared for this property,[23] this portion of the project site consists of undeveloped pastureland used for cattle grazing. Review of historical records indicates that this portion of the project site consisted of a rural residential compound from at least 1939 to 1973. Two metal storage tanks were observed during the site reconnaissance conducted for the ESA. The two tanks, which appeared heavily rusted and had several punctures, were located near a debris pile in the northwest portion of this property, near Croak Road. The original contents of the tanks are unknown and it was not clear if the tanks were used as aboveground tanks (ASTs) or underground tanks (USTs). The site reconnaissance and records review did not find

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21 ENGEO Incorporated. 2016a. Phase I Environmental Site Assessment, Anderson Property, 3457 Croak Road, Dublin, California. November 8.

22 ENGEO Incorporated. 2018. Phase I Environmental Site Assessment, EBJ Parcel-Dublin, Dublin, California. August 10.

23 ENGEO Incorporated. 2016b. Phase I Environmental Site Assessment, Chen Property, Fallon Road – APN 985-27-2, Dublin, California. November 8.

documentation or physical evidence of soil, soil gas, or groundwater impairments associated with the use or past use of this portion of the project site.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR did not include a discussion of hazards and hazardous materials as an identified environmental topic area; however, the Eastern Dublin EIR did discuss the potential for hazardous materials releases as part of the analysis of solid waste disposal and fire protection. Mitigation measures identified for solid waste disposal are included in Section 18, Utilities and Service Systems. The Eastern Dublin EIR did identify potentially significant impacts related to wildfire and fire hazards. Mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following mitigation measures, as modified, would apply to the proposed project:

MM 3.4/9.0 Incorporate ~~Dougherty Regional Fire Authority (DRFA)~~[24] Alameda County Fire District recommendations on project design relating to access, water pressure, fire safety and prevention into the requirements for development approval. Require that the following DRFA design standards are incorporated where appropriate:

- Use of non-combustible roof materials in all new construction.
- Available capacity of 1,000 gallons per minute (gpm) at 20 pounds per square inch (PSI) fire flow from project fire hydrants on public water mains. For groupings of one-family and small two-family dwellings not exceeding two stories in height, the fire flow requirements are a minimum of 1,000 gpm. Fire flow requirements for all other buildings will be calculated based on building size, type of construction, and location.
- A buffer zone along the backs of homes which are contiguous with the wildland area. This buffer zone is to be landscaped with irrigated (wet banding) or equivalent fire-resistive vegetation.
- Compliance with DRFA minimum road widths, maximum street slopes, parking recommendations, and secondary access road requirements.
- Require residential structures outside the DRFA's established response time and zone to include fire alarm systems and sprinklers.

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24 The Dougherty Regional Fire Authority (DRFA) was a Joint Powers Authority between the City of Dublin and the City of San Ramon to provide fire services for these two communities. DRFA had three fire stations - two in Dublin and one in San Ramon. DRFA was dissolved in 1997 with the Alameda County services being contracted to Alameda County Fire District and the small portion of San Ramon served by DRFA being annexed into the San Ramon Valley Fire District.

2002 SEIR

Hazards and hazardous materials were addressed in the Initial Study for the 2002 SEIR. No potentially significant impacts or mitigation measures were identified.

Fallon Village SEIR

The Fallon Village SEIR determined that because the Fallon Village Project proposed several land uses changes, including converting the former "Future Study Area" land use designation to non-residential land uses, new impacts to related to hazards and hazardous materials could occur. Potentially significant impacts were identified including the potential for hazards from release of hazardous materials into the atmosphere from demolition of existing buildings and remediation of potentially contaminated sites. Supplemental mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following supplemental mitigation measures are applicable to the proposed project:

> **SM-HAZ-1.** Prior to the demolition of any structures identified in the Environmental Site Assessments as potentially containing ACM or LBP, Project developer(s) shall undertake comprehensive asbestos and LBP surveys of those structures and implement appropriate ACM and LBP handling and disposal methods based on those surveys. As recommended in the ENGEO 2005 report, an environmental professional shall be present during demolition and pre-grading activities to inspect for potential environmental contaminants.
>
> **SM HAZ-2 (potential for soil/groundwater contamination and exposure hazards from existing hazardous materials).** As identified in the Environmental Site Assessments for each property, all observed hazardous or potentially hazardous materials and potential containers of those materials shall be removed from the properties by licensed waste contractors prior to building demolition. If no building demolition is required, this removal shall be completed prior to any grading activities on an individual site. The contents of potential hazardous material containers shall be identified and disposed of accordingly, including specific methods to preclude airborne release of materials. All dumped scrap and miscellaneous material and equipment shall be removed from the site prior to any on-site development activities. If recommended in the ESA (i.e., Mandeville, Anderson, and Fallon Enterprises properties), an environmental professional shall view the property during demolition and pre-grading activities to ensure compliance with this measure.
>
> **SM-HAZ-3a (potential for soil/groundwater contamination from subsurface contamination).** A Phase II ESA shall be conducted for the former gas station site north and west of Croak Road to obtain information with regard to operation, demolition, and removal of the former gasoline service station in order to better assess the likelihood of this use having a detrimental impact to soils and water quality at the EBJ Partners site and adjacent sites. This Assessment shall be completed and approved by the Alameda County Fire Department prior to any demolition or site grading, whichever is first. Additionally, a limited subsurface investigation shall be conducted for the EBJ parcel and

adjacent areas of the Anderson and Chen/Tseng properties to better assess whether impacts to soil and shallow groundwater have resulted from the former gas station.

SM-HAZ 3f (potential for soil/groundwater contamination from subsurface contamination). Upon development of each site, all existing wells shall be abandoned under permit from Zone 7 Water Agency and in accordance with all applicable regulations.

SM-HAZ 3g (potential for soil/groundwater contamination from subsurface contamination). When, or prior to, the existing structures are demolished, all existing septic systems and associated leach fields shall be pumped out and removed under permit from the Alameda County Health Department.

Project Impacts and Mitigation Measures

(a) Routine transport, use, or disposal of hazardous materials

The proposed project would demolish the existing structures on the project site and construct residential, general commercial/campus office and park uses. These types of land uses typically do not involve transport, use, or disposal of significant quantities of hazardous materials. However, the proposed GC/CO uses could include limited light manufacturing, hotel, retail, and office uses as permitted under the City's GC/CO designation that may involve the use, handling, and storage of commercially available hazardous materials associated with building maintenance, on-site vehicle use, and landscaping. These materials would likely include fuels, paints, flammable liquids, pesticides, and herbicides. However, hazardous materials stored and used at the site would be required to be managed in accordance with applicable local, State, and federal hazardous materials regulations that would reduce risks associated with leakage, explosions, fires, or the escape of harmful gases. The proposed project would generate quantities of hazardous materials similar in nature, type, and volume to the uses anticipated to be used as part of other foreseeable residential and commercial development projects identified in the EDSP EIRs. Therefore, no new impacts or substantially more severe significant impacts related to the routine transport, use, or disposal of hazardous materials, beyond those identified in the EDSP EIRs, would occur.

(b) Upset/accident

The Fallon Village SEIR identified potentially significant impacts related to the potential for an accidental release of hazardous materials associated with historic uses on the project site, including existing structures present on the project site that could contain ACM or LBP and potential contamination associated with the former gas station located at the corner of Croak Road and Collier Canyon Road. However, the Fallon Village SEIR determined that implementation of Supplemental Mitigation Measures SM-HAZ-1, SM-HAZ-2, SM-HAZ-3a, SM-HAZ-3a, SM-HAZ-3f and SM-HAZ-3g would reduce these impacts to a less-than-significant level through pre-construction environmental investigations for hazardous materials, implementation of appropriate ACM and LBP handling and disposal methods, appropriate removal of septic systems, and appropriate abandonment of existing wells. Since certification of the Fallon Village SEIR, the existing structures on the project site have been removed; therefore, no impacts associated with the exposure of construction workers and others to ACM and LBP would occur. Implementation of the mitigation measures identified in the EDSP EIRs would ensure that impacts related to the potential for an accidental release of hazardous materials would be less than significant.

During construction, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported and used at the project site. Management of these materials at the project site would be subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. Compliance with the Construction General Permit would require preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce the risk of spills or leaks from reaching the environment. The SWPPP would also include a Spill Response Plan to address minor spills of hazardous materials. Compliance with SWPPP requirements would ensure that potential significant hazards associated with routine transport, use, or disposal of hazardous materials during and after construction would be less than significant. Therefore, no new impacts or substantially more severe significant impacts related to the accidental release of hazardous materials, beyond those identified in the EDSP EIRs, would occur.

(c) Near school

The nearest schools to the project site are Cottonwood Creek K-8 School, which abuts the project to the north, and Kolb Elementary School, which is approximately 0.75 mile to the northwest. As described in Section 8.b, the proposed project would be required to implement Supplemental Mitigation Measures SM-HAZ-1, SM-HAZ-2, SM-HAZ-3a, SM-HAZ-3f, and SM-HAZ-3g, which require pre-construction environmental investigations for hazardous materials, appropriate removal of septic systems, and appropriate abandonment of existing wells. With implementation of the mitigation measures identified in the EDSP EIRs, no new impacts or substantially more severe significant impacts related to release of hazardous materials in proximity to existing schools beyond those identified in the EDSP EIRs, would occur.

(d) Hazardous materials list

Government Code Section 65962.5 states that the California Department of Toxic Substances shall compile and maintain annually a list of hazardous waste facilities subject to corrective action as part of the Health and Safety Code. This list is commonly referred to as the Cortese List. The project would not be located on a RWQCB Leaking Underground Tank Cleanup Site (LUST) or any other Cleanup Program Sites (formerly known as spills, leaks, investigations, and cleanups or SLIC). These two components comprise the State Cortese List of known hazardous materials sites compiled pursuant to Government Code Section 65962.5. Therefore, no new impacts or substantially more severe significant impacts related to listing on a hazardous materials site compiled pursuant to Government Code Section 65962.5, beyond those identified in the EDSP EIRs, would occur.

(e) Proximity to a public airport

The Livermore Municipal Airport, a public utility airport operated by the City of Livermore, is located approximately 0.65-mile southeast of the project site. The entire project site is located within the Airport Influence Area (AIA) and the southern portion of the site, designated for GC/CO and P/PR uses, is located within the Airport Protection Area (APA). The majority of the project site (except the northwest corner) is located within Airport Safety Zone 6 as designated in the Livermore Municipal Airport Land Use Compatibility Plan (ALUCP). No restrictions on residential development shall apply to the portions of Zone 6 that extend beyond the boundary of the APA. New residential land use designations, or the intensification of existing residential land uses, are prohibited within the APA. Nonresidential land uses may be allowed within the APA provided they are consistent with the criteria set forth in the ALUCP.

The project site is also located within the City's Airport Overlay Zoning District, which is coterminous with the AIA, as established by the Livermore Municipal Airport ALCUP. All permitted and conditionally permitted uses set forth in a PD Zoning District that was adopted and in effect prior to August 2012 are considered Existing Land Uses consistent with the ALUCP and do not require review by the Airport Land Use Commission (ALUC), unless changes to the existing land use results in an increase of non-conformity with ALUCP policies or the change would increase the intensity or density of use.

As outlined in the project description, the project proposes a 0.6 floor area ratio (FAR) for the GC/CO portions of the project site, which is an increase from the 0.35 FAR allowed in the EDSP and Fallon Village Stage 1 PD. The EDSP and Stage 1 PD allow an FAR of 0.20-0.80 for GC/CO uses. However, the EDSP (EIR) and Fallon Village SEIR evaluated a maximum 0.28 FAR for GC/CO uses. Although the density of the proposed general commercial uses would be greater than previously analyzed in the EDSP EIRs, the types of uses (GC/CO) would be the same as those approved in the EDSP EIRs and are consistent with the uses allowed within the APA and outlined in the ALUCP. Further, the mass and height of proposed buildings would not be significantly different than those approved in the EDSP EIRs. No hazardously tall structure or other hazards to aviation are anticipated to be proposed as part of the project or as part of the Stage 2 Development Plan for the GC/CO uses. Therefore, based on the foregoing analysis, the proposed project would not result in development of an incompatible land use within the ALUCP, would not add structures of a height such that it would create a hazard or obstruction, and would not result in the addition of a characteristic that would create a hazard to air navigation. Therefore, no new impacts or substantially more severe significant impacts related to proximity to a public airport, beyond those identified in the EDSP EIRs, would occur.

(f) Impair implementation of an emergency response plan or emergency evacuation plan

The Tri-Valley Local Hazard Mitigation Plan was developed in compliance with State requirements and also meets the requirements of the Federal Emergency Management Agency (FEMA) as the City's local hazard mitigation plan. The Tri-Valley Local Hazard Mitigation Plan provides a uniform hazard mitigation strategy for the Tri-Valley area, addressing a range of hazards including, but not limited to, earthquakes, floods and wildland fire. The City of Dublin also has an adopted Comprehensive Emergency Management Plan and a Local Hazard Mitigation Plan to assess hazards and mitigate risks prior to a disaster event.

The project would subdivide the 192-acre site into 11 parcels to accommodate proposed development of up to 238 residential units and up to 3,299,670 square feet of general commercial/campus office uses. The proposed project would be designed to provide adequate access to the site for fire/police/emergency medical service personnel in the event of an emergency at the project site. Development of the project site requires the construction of the Central Parkway Extension, Croak Road Extension, and Dublin Boulevard Extension to serve the residential development and general commercial/campus office development. In the event of an emergency on the site, employees and residents could exit the site via the Croak Road Extension, the proposed Central Parkway Extension, and the future Dublin Boulevard Extension. Once off the project site, employees and residents could access I-580 to exit the City and region. The proposed project would not interfere with an adopted emergency response plan or emergency evacuation plan. Because the proposed project would not substantially alter or block the adjacent roadways, the proposed project would not be expected to impair the function of nearby emergency evacuation routes. Therefore, no new impacts or substantially more severe significant impacts related to implementation of an adopted emergency response plan or emergency evacuation plan, beyond those identified in the EDSP EIRs, would occur.

(g) Expose people or structures to wildland fires

A wildland fire is a fire occurring in a suburban or rural area which contains uncultivated land, timber, range, brush, or grasslands. Wildland fires are primarily a concern in areas where there is a mix of developed and undeveloped lands. The project site is not identified as an area of moderate, high, or very high fire hazard severity for the Local Responsibility Area. It is identified as an area of moderate fire hazard severity for the State Responsibility Area, as mapped by the California Department of Forestry and Fire Protection (CAL FIRE). The proposed project would be constructed in accordance with the requirements of the CBC, California Fire Code, and the City's Wildfire Management Plan. In addition, consistent with the City's entitlement process and Mitigation Measure 3.5/9.0 in the Eastern Dublin EIR, project plans would be reviewed by the Alameda County Fire Department to ensure that required fire protection elements are incorporated into final building plans, including provision of adequate water supply and pressure, and use of appropriate landscape and building materials. Therefore, no new impacts or substantially more severe significant impacts related to wildland fires, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified hazards and hazardous materials impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to hazards and hazardous materials beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

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Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Hydrology and Water Quality

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
9. HYDROLOGY AND WATER QUALITY. Would the project:			
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X
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:			X
(i). Result in substantial erosion or siltation on- or off-site;			X
(ii). Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X
(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			X
(iv). Impede or redirect flood flows?			X
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X

Environmental Setting

The project site is located within the Alameda Creek watershed which drains to the San Francisco Bay. The 660-square-mile Alameda Creek watershed is the largest watershed in the Bay Area, extending from Mount Hamilton north to Mount Diablo, east to the Altamont Hills and west to San Francisco Bay. The project site is located within the jurisdiction of Zone 7 of the

Alameda County Flood Control and Water Conservation District (Zone 7). The northern portion of the site is hilly and transitions to relatively flat areas immediately adjacent to I-580.

The project site is located within the San Francisco Bay Hydrologic Region. The San Francisco Bay RWQCB Basin Plan identifies the project as being within the Livermore Valley groundwater basin (Basin ID 2-10). As defined in Department of Water Resources (DWR) Bulletin 118 Update 2003 (California's Groundwater), the Livermore Valley Groundwater Basin (DWR Basin 2-10) extends from the Pleasanton Ridge east to the Altamont Hills and from the Livermore Uplands north to the Tassajara Uplands. The Geotechnical Update (ENGEO, 2004) prepared for the EDPO Project indicates that groundwater depths range from 14 to 40 feet. The Water Quality Report prepared for the Dublin Boulevard – North Canyons Parkway Extension Project confirms that groundwater levels are 20 to 25 feet below grade with higher groundwater levels (10 feet below grade) occurring in the area northwest of the existing I-580/Fallon Road interchange. Shallower groundwater may be present along major drainages, in colluvium-filled swales, and associated with existing stock ponds.

As described above, the project site supports four linear drainages that flow from north to south across the northern portion of the project site. Water from an intermittent drainage in the northwestern corner of the project site enters a culvert, which flows under the project site and ultimately discharges into a roadside ditch adjacent to the project site. The roadside ditch and culvert eventually overflow onto the project site, creating a large emergent wetland. A complex of ten seasonal wetland depressions occurs within the southern portion of the project site and along the southern boundary. Two small wetlands were also identified in the southeastern corner and along the southwestern boundary of the project site. Three other wetlands were observed along the fringe of the quarry pond located in the northeastern portion of the project site. All of these features are considered jurisdictional waters/wetlands by the Corps and RWQCB due to their hydric soils, dominant hydrophytic vegetation and hydrological conditions. In addition, as described above, riparian woodland surrounds the quarry pond and intermittent drainage in the northern portion of the project site. All of these features would be impacted by the proposed project.

Based on the Flood Insurance Rate Maps (FIRMs) published by the Federal Emergency Management Agency (FEMA) (06001C0328G and 06001C0329G, dated August 3, 2009), the project site is not located within a 500-year or 100-year flood plain.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to the overdraft of potential flooding, reduced groundwater recharge, and non-point sources of pollution. Mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following mitigation measures would apply to the proposed project:

> **MM 3.5/44.0** Require drainage facilities that will minimize any increased potential or erosion or flooding.

MM 3.5/45.0 Require channel improvements consisting of natural creek bottoms and side slopes with natural vegetation where possible to meet Policy 9.7 above.

MM 3.5/46.0 Storm Drainage Master Plan. Require a Master Drainage Plan be prepared for each development application prior to development approval. The plan shall include:

- Hydrologic studies of entire related upstream watersheds.
- Phase approach and system modeling.
- Documentation of existing conditions.
- Design-level analysis of the impacts of proposed development of the existing creek channels and watershed areas.
- Detailed analysis of effects of development on water quality of surface runoff.
- Detailed drainage design plans for each phase of the proposed project.
- Design features to minimize runoff flows within existing creeks/channels in order to alleviate potential erosion impacts and maintain riparian vegetation.

MM 3.5/47.0 Flood Control. Require development in the Planning Area to provide facilities to alleviate potential downstream flooding due to project development. These facilities shall include:

- Retention/detention facilities as appropriate to control peak runoff discharge rates.
- Energy dissipators at discharge locations to prevent channel erosion, as per Zone 7 guidelines. Energy dissipators should be designed to minimize adverse effects on biological resources and the visual environment; in particular, widespread use of riprap should be avoided.

MM 3.5/49.0 Plan facilities and select management practices in the EDSP EIR area that protect and enhance water quality.

MM 3.5/50.0 Zone 7 supports ongoing groundwater recharge program from the Central Basin.

MM 3.5/51.0 Develop community-based programs to educate local residents and businesses on methods to reduce non-point sources of pollution. Coordinate such programs with current Alameda County programs. Such programs include:

- Increased availability of liquid recycling centers (i.e., oil, greases, etc.) to reduce potential for dumping into storm drains.

- Programs that educate the public that catch basins and storm drains flow to creeks, to potable groundwater basins, and to the San Francisco Bay, including a potential program to paint labels at each catch basin and storm drain to alert people to these facts.

2002 SEIR

Hydrology and water quality were addressed in the Initial Study for the 2002 SEIR. No potentially significant impacts or mitigation measures were identified.

Fallon Village SEIR

The Fallon Village SEIR identified two potentially significant impacts associated with an increase in impervious surfaces, resulting in increased stormwater runoff, which may not comply with the most recent surface water quality standards and hydromodification standards and, as a result, could add pollutants to nearby bodies of water. Supplemental mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following supplemental mitigation measures are applicable to the proposed project:

> **SM- SD-1 (changed surface water quality standards).** The Stage 1 Development Plan shall require that the water quality source control and hydrologic design recommendations of the report prepared by ENGEO, Inc. (February 28, 2005) be implemented for all individual development projects within the Project area.
>
> **SM- SD-2 (changed surface water quality hydromodification standards).** Development within the Project area shall comply with the hydromodification provisions of the Alameda County Clean Water Program as approved by the RWQCB and administered by the City of Dublin. If no Alameda County Clean Water Program permit has been adopted at the time individual development proposals are approved by the City the applicant may be required to submit hydrology and hydrologic analyses to identify specific increases in storm water runoff into downstream receiving waters. Such reports will be reviewed by both the City of Dublin and Zone 7 Water Agency. Development projects will also be required to pay the then-current Zone 7 Special Drainage Area fee (SDA7-1) in effect at the time of development.

Project Impacts and Mitigation Measures

(a) Violate water quality or waste discharge requirements or degrade surface or groundwater quality

Construction activities associated with the proposed project would cause disturbance of soil during excavation work, which could adversely impact water quality. Contaminants from construction vehicles and equipment and sediment from soil erosion could increase the pollutant load in runoff being transported to receiving waters during development. Although surface runoff from the site would likely decrease with the proposed project (due to proposed stormwater treatment measures), runoff from the proposed landscaped areas may contain residual pesticides and nutrients (associated with landscaping) and sediment and trace metals (associated with atmospheric deposition) during operation of the project. Implementation of mitigation measures MM 3.6/27.0 and MM 3.6/28.0, as described in Section 6, Geology and Soils, would ensure that potential water quality impacts associated with project construction are reduced to a less-than-significant level. The project would be required to comply with these mitigation measures.

In addition, because the project would result in the disturbance of greater than one acre of soil, project implementation is required to comply with the Construction General Permit, which requires preparation of a SWPPP and implementation of BMPs to reduce the discharge of construction-related stormwater pollutants. A SWPPP must include a detailed description of controls to reduce pollutants and outline maintenance and inspection procedures. Typical sediment and erosion BMPs include protecting storm drain inlets, establishing and maintaining construction exits and perimeter controls to avoid tracking sediment off-site onto adjacent roadways. A SWPPP also defines proper building material staging and storage areas, paint and concrete washout areas, describes proper equipment/vehicle fueling and maintenance practices, measures to control equipment/vehicle washing and allowable non-stormwater discharges, and includes a spill prevention and response plan. Compliance with the requirements of the Construction General Permit and implementation of mitigation measures MM 3.6/27.0 and MM 3.6/28.0 ensure that the proposed project would result in less-than-significant impacts to water quality during construction.

As the site is currently largely undeveloped, the proposed project would increase the total amount of impervious surface on the project site. The increase in impervious surface could result in increased stormwater runoff (both flow rate and volume) from the project site relative to pre-project conditions, which may result in hydromodification impacts (i.e., increased potential for erosion of creek beds and banks, silt pollution generation, or other adverse impacts on beneficial uses due to increased erosive force). Hydromodification is the alteration of the natural flow of water through a landscape, and often takes the form of creek channel erosion. Hydromodification is one of the leading sources of impairment in streams, lakes, and estuaries.

The proposed project is subject to the conditions of the Municipal Regional Permit (MRP) (Order No. R2-2022-0018 NPDES Permit No. CAS612008). The C.3 Stormwater Technical Guidance updated in February 2021 as per the Alameda County Clean Water Program, outlines low impact development (LID) provisions that MRP permit holders can use during planning of development activities to manage and reduce occurrences of stormwater runoff pollutant discharges. These LID methods aim to preserve existing natural landscapes to minimize imperviousness and water quality impacts.

The proposed project would be considered a “regulated project” under the MRP. Provision C.3 of the MRP requires new development and redevelopment projects that would replace more than 5,000 square feet of existing impervious surfaces to include post-construction stormwater control in project designs, including measures for site design, source control, runoff reduction, stormwater treatment, and baseline hydromodification management. Under the C.3

requirements, preparation and submittal of a Stormwater Control Plan (SCP) would be required for the project site. The purpose of a SCP is to detail the design elements and implementation measures necessary to meet the post-construction stormwater control requirements of the MRP. In particular, SCPs must include LID design measures, which reduce water quality impacts by preserving and recreating natural landscape features, minimizing imperviousness, and using stormwater as a resource, rather than a waste product. The proposed project would also be required to prepare a Stormwater Facility Operation and Maintenance Plan to ensure that stormwater control measures are inspected, maintained, and funded for the life of the project. Compliance with the C.3 requirements of the MRP would ensure that operation-period impacts to water quality would be less than significant.

The proposed project would include bioretention facilities and storm drains on each MH Density Residential and GC/CO parcel for stormwater quality control. Proposed bioretention and storm drain facilities would discharge to existing/proposed storm drainpipes. Proposed storm drainage facilities would conform to the Alameda County C.3 Stormwater Technical guidelines and requirements.

In addition, Mitigation Measure 3.5/46.0, identified in the Eastern Dublin EIR, which requires preparation of a storm drainage plan for the proposed project, and Mitigation Measure SM-SD-2, identified in the Fallon Village SEIR, which requires compliance with Alameda County C.3 requirements, would ensure that potential impacts associated with stormwater runoff would be reduced to a less-than-significant level.

Because the proposed project would be required to comply with applicable State and local regulations and mitigation measures identified in the EDSP EIRs, no new impacts or substantially more severe significant impacts related to water quality violations, wastewater discharges, or water quality degradation, beyond those identified in the EDSP EIRs, would occur.

(b) Substantially decrease or interfere with groundwater supplies

Although the proposed project would result in a net increase in impervious surface coverage compared to the existing condition, the proposed project would include the use of LID methods, including stormwater quality basins and storm drains throughout the site that would retain and clean stormwater on-site before discharging it into the municipal stormwater system, consistent with Provision C.3 of the MRP. Further, only the southernmost portion of the project site is located within the Livermore Valley groundwater basin; therefore, the increase in impervious surfaces on the project site would not substantially decrease or interfere with groundwater recharge.

The proposed project would connect to the existing water lines within the vicinity of the project site and would not require the use of groundwater. Due to the depth of groundwater and the shallow excavations required for project construction, dewatering is not anticipated during construction activities. Therefore, the proposed project would not substantially decrease or interfere with groundwater supplies. This impact would be less than significant. As such, no new impacts or substantially more severe significant impacts related to groundwater supplies, beyond those identified in the EDSP EIRs, would occur.

(c) Substantially alter existing drainage patterns re: erosion/siltation, re: flooding, or degrade water quality

The proposed project would create new landscaped areas and impermeable surfaces, which would alter the existing drainage pattern of the project site. However, as discussed above, the proposed project would be required to comply with the C.3 requirements of the MRP, standard City development requirements related to stormwater, and mitigation measures identified in the Eastern Dublin EIR and Fallon Village SEIR, including Mitigation Measure 3.5/47.0, which requires preparation of a flood control plan for the proposed project.

As noted in Section 8.b and 9.a, the proposed project would be required to prepare a SWPPP as required by the Construction General Permit and consistent with mitigation measures MM 3.6/27.0 and MM 3.6/28.0, identified in the Eastern Dublin EIR, to reduce short- and long-term erosion and sedimentation associated with project construction and operation.

Required compliance with applicable regulations, implementation of City policies, and the mitigation measures identified in the EDSP EIRs, would reduce potential impacts of the project related to changes in drainage patterns to a less-than-significant level. Therefore, no new impacts or substantially more severe significant impacts related to drainage patterns, beyond those identified in the EDSP EIRs, would occur.

(d) Flood hazard, seiche, or tsunami

As described above, the project site is not located within a flood hazard area mapped by FEMA, or a mapped tsunami inundation area for Alameda County, and no seismically induced seiche waves have ever been documented in the San Francisco Bay area. Additionally, the proposed project would implement various design features to ensure contaminants would be contained. No impact would occur. Therefore, no new impacts or substantially more severe significant impacts related to flood hazard, seiche or tsunami, beyond those identified in the EDSP EIRs, would occur.

(e) Water Quality

The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan)[25] is the master policy document that establishes the water quality objectives and strategies needed to protect designated beneficial water uses in the San Francisco Bay region. The State Water Board and the Regional Water Board enforce compliance with the water quality objectives of the Basin Plan through the issuance of NPDES permits. As noted above, the proposed project would implement various design features to ensure the proposed project would have a less-than-significant impact related to water quality, including multiple bioretention basins and storm drains throughout the site that would retain and clean stormwater on-site before discharging it

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25 California Regional Water Quality Control Board San Francisco Bay Region. 2017. *Water Quality Control Plan for the San Francisco Bay Basin*. May 4.

into the municipal stormwater system, consistent with Provision C.3 of the MRP, with which all projects in the City of Dublin must comply.

The southernmost portion of the project site is located within the Livermore Valley groundwater basin. The sustainable Groundwater Management Act designated the Zone 7 Water Agency as the exclusive Groundwater Sustainability Agency (GSA) for the Livermore Valley Groundwater Basin (DWR Basin No. 2-10) and DWR designated the Livermore Valley Groundwater Basin as a medium-priority basin. Zone 7 submitted the 2016 Alternative Groundwater Sustainability Plan (AGSP) for the Livermore Valley groundwater basin to DWR, which approved the AGSP in 2019. In December 2021, Zone 7 submitted the 2021 Update of the AGSP for review by DWR. As described above, the proposed project would not interfere with groundwater recharge in the vicinity of the project site. The proposed project would not conflict with or obstruct the implementation of a sustainable groundwater management plan. Therefore, no new impacts or substantially more severe significant impacts related to water quality, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified hydrology and water quality impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to hydrology and water quality resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

California, State of. 201. California Official Tsunami Inundation Maps – Alameda County. Website: https://www.conservation.ca.gov/cgs/tsunami/maps/alameda (accessed September 13, 2023).

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Federal Emergency Management Agency. n.d. FEMA Flood Map Service Center (map). Website: https://msc.fema.gov/portal/search?AddressQuery=Dublin%2C%20CA (accessed September 13, 2023).

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Land Use and Planning

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
10. LAND USE AND PLANNING. Would the project:			
a) Physically divide an established community?			X
b) Cause a significant environmental impact due to a conflict with any applicable land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X

Environmental Setting

The project site consists almost entirely of undeveloped grazing ranchland and open space. The land uses on nearby properties are largely agricultural, with residential , open space, and commercial.

The project site has General Plan land use designations of Medium High Density Residential (13.5 acres), and General Commercial/Campus Office (126.3 acres), Parks/Public Recreation-Community Park (7.2 acres), Open Space (44.9 acres), and Public/Semi Public (2.5 acres). The Medium High Density Residential designation allows attached residential units and typically includes detached, zero-lot line, duplex, townhouse, and garden apartment development at a density of 14.1 to 25.0 units per gross residential acre. The General Commercial/Campus Office designation provides flexibility in permitting a range of regional and community-serving retail and office uses. Mixed use projects incorporating retail, service, and office uses are encouraged. An FAR between 0.2 and 0.8 is allowed as specified in the EDSP. The Open Space designation includes areas dedicated as open space on subdivision maps, slopes great than 30 percent, stream protection corridors, woodlands, and grazing lands. The Public/Semi Public designation has a maximum FAR of 0.5 and allows for a combination of non-park public facilities (public schools, libraries, city offices buildings, etc.) and semipublic facilities (childcare centers, youth centers, senior centers).

The project site is zoned Planned Development (PD) Ordinance No. 32-05 and No.13-08. The intent of the PD zoning district is to create a more desirable use of the land, a more coherent and coordinated development, and a better physical environment than would otherwise be possible under a single zoning district or combination of zoning districts. A PD district is established through an adopted Development Plan, which establishes regulations for the use, development, improvement, and maintenance of the property within the PD district and consists of two stages. The project site is governed by the Stage 1 Development Plan adopted as part of the Fallon Village Project.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified less than significant impacts related to the substantial alteration to existing land use, on-site project land use conflicts, conversion of non-urban lands, and potential conflicts with land uses to the south, east and north. A potentially significant impact was identified related to potential conflicts with land uses to the west, which was determined to be less than significant with implementation of Mitigation Measure 3.1/1.0, which requires the City to coordinate with the Army regarding future development proposals in the vicinity of the Camp Parks Reserve Forces Training Area (RFTA).

2002 SEIR

Land use and planning was addressed in the Initial Study for the 2002 SEIR. No potentially significant impacts or mitigation measures were identified.

Fallon Village SEIR

The Fallon Village SEIR determined that the expansion of the EDSP planning boundary and the designation of land uses resulting from the Fallon Village project would be consistent with the City's General Plan. No supplemental impacts related to land use and planning were identified.

Project Impacts and Mitigation Measures

(a) Physically divide an established community

The physical division of an established community typically refers to the construction of a feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The project would subdivide the 192-acre site into 11 parcels to accommodate proposed development of up to 238 residential units, up to 3,299,670 square feet of general commercial/campus office uses to include limited light manufacturing, hotel, retail, and office uses on approximately 126.3 acres. The proposed project would also include a 7.2 acre Community Park and 42.6 acre Natural Community Park.

Primary access into the residential neighborhoods would be via Pandora Way within the Jordan Ranch development and an east/west private street off of Croak Road. Primary access to the GC/CO parcels would be provided by the proposed Dublin Boulevard Extension. Croak Road north of Dublin Boulevard would be widened and provide additional access to the GC/CO parcels. The proposed project would not result in the realignment or closure of any existing roads. Therefore, the proposed project would not result in the physical division of an established community or adversely affect the continuity of land uses in the vicinity. The proposed project would provide pedestrian connections to adjacent development as well as hiking and walking trails within the proposed Park/Public Recreation lands. Therefore, no new impacts or substantially more severe significant impacts related to division of an established community, beyond those identified in the EDSP EIRs, would occur.

(b) Conflict with land use plan, policy, or regulation

The project would subdivide the 192-acre site into 11 parcels to accommodate proposed development of up to 238 residential units and up to 3,299,670 square feet of general commercial/campus office uses to include limited light manufacturing, hotel, retail, and office uses. The proposed project would be consistent with the Medium High Density Residential land use designation in that number and type of residential units proposed is consistent with the density allowed under the City of Dublin General Plan, the EDSP, and subsequent planning entitlements. In addition, the proposed residential development would be compatible with the mix and intensity of uses located to the north of the project site, which generally consist of residential and public uses associated with the Jordan Ranch and Francis Ranch communities.

As outlined in the project description, the project proposes a 0.6 floor area ratio (FAR) for the GC/CO parcels. The EDSP and PD-1 allow an FAR of 0.20-0.80 for GC/CO uses. However, the EDSP EIR and Fallon Village SEIR evaluated a maximum 0.28 FAR for the GC/CO uses. The EDSP provides discretion to the City Council to approve a higher FAR if the proposed uses meet one or more of the following criteria:

- Unique project characteristics which result in reduced impacts relative to other uses in the same area (e.g., lower traffic generation);
- Unique project building requirements (e.g., warehouse uses that have large land coverage requirements but low employment densities); or
- Extraordinary benefits to the City.

The General Plan/Specific Plan Amendment would eliminate the Public/Semi-Public land use which would enable the applicant to utilize the full 6.5-acre site designated Medium/High Density Residential for residential units. While this would not increase the overall number of units on the site, it would enable them to spread those units across a larger area, resulting in a lower density product type.

The Housing Element identifies the Public/Semi-Public portion of the site as an opportunity site that can accommodate 74 lower-income units and is subject to the “No Net Loss” provisions. There is a site at the Transit Center that is already identified as an opportunity site in the Housing Element. This site has a surplus of units that can serve as an opportunity site to accommodate these 74 units. As a condition of approval for the proposed project, the City will require that these 74 units be transferred to another site (e.g., the Transit Center site) that can accommodate them. With this condition of approval, the proposed project would not conflict with the City’s Housing Element or State housing law.

The conversion of Open Space to Parks/Public Recreation helps address the City’s parkland deficit by providing an additional 42.6 +/- acres of Natural Community Parkland to accommodate a future nature park designed for low impact use and maintenance, with hiking and walking trails. As part of the proposed Development Agreement terms, the Applicant would dedicate this land to the City to address the City's parkland deficit of approximately 50 acres.

As part of the project entitlements, the City would grant a General Plan/Specific Plan Amendment, Stage I Development Plan amendment to allow for the increased FAR, and Planned Development Rezone with a Stage 2 Development Plan for the MH Density Residential uses. The proposed General Plan/Specific Plan Amendment would eliminate the Public/Semi-Public land use designation on the project site and amend the land use designation on 42.6 acres from Open Space to Parks/Public Recreation.

With approval of the proposed General Plan/Specific Plan Amendment, Stage I Development Plan amendment and Planned Development Rezone, the proposed project would not conflict with any applicable land use plans, policies, or regulations. Therefore, no new impacts or substantially more severe significant impacts related to conformity with land use plans, beyond those identified in the EDSP EIRs, would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified land use and planning impacts, nor result in new significant impacts.

There are no applicable regulatory requirements or mitigation measures identified in the EDSP EIRs that are applicable to land use and planning and there would be no new or substantially more severe significant impacts to land use and planning beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Mineral Resources

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
11. MINERAL RESOURCES. Would the project:			
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?			X
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?			X

Environmental Setting

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil-bearing rock, but excluding geothermal resources, natural gas and petroleum. Rock, sand, gravel and earth are also considered minerals by the Department of Conservation when extracted by surface mining operations.

Neither the State Geologist nor the California Department of Mines and Geology (CDMG) have classified any areas in the City as containing mineral deposits that are either of Statewide significance or the significance of which requires further evaluation.

Previous CEQA Documents

None of the EDSP EIRs indicate that significant mineral resource deposits exist on the project site. Therefore, no impacts related to mineral resources were identified.

Project Impacts and Mitigation Measures

(a-b) Loss of known or identified mineral resource.

The project site is not located in a designated mineral resource area. Therefore, the proposed project would not result in the loss of a known mineral resource that would be of value to the region and residents of the state or the loss of availability of any known locally important mineral resource recovery site. Therefore, no new impacts or substantially more severe significant impacts related to mineral resources would occur.

Conclusion

Because the City does not have any mineral areas, there would be no impact, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Noise

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
12.	**NOISE. Would the project result in:**			
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?			X
b)	Generation of excessive ground borne vibration or ground borne noise levels?			X
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?			X

Environmental Setting

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem where the motion may not be discernible, but there is less adverse reaction without the effects associated with the shaking of a building. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by occupants as motion of building surfaces, the rattling of items on shelves or hanging on walls, or a low-frequency rumbling noise, otherwise referred to as ground-borne noise. Typically, sources that have the potential to generate ground-borne noise are likely to produce airborne noise impacts that mask the radiated ground-borne noise. The rumbling noise is caused by the vibrating walls, floors, and ceilings radiating sound waves. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earthmoving equipment) and occasional traffic on rough roads. Problems with ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 feet of the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 feet. When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. For most projects, it is assumed that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, construction of the project could result in ground-borne vibration that could be perceptible and annoying.

To assess existing noise levels, LSA conducted noise monitoring to establish the existing ambient noise environment at the project site. Two long-term (24-hour) noise measurements were conducted at the project site from November 9, 2023, to November 10, 2023. The existing measured noise levels at the project site range from approximately 62.2 dBA CNEL to 63.1 dBA CNEL. Local vehicle traffic on Central Parkway and occasional aircraft noise was reported as the primary noise source. Construction noise on Croak Road also contributed to the noise levels in the vicinity of the project site. Noise measurement sheets are provided in Appendix I. Figure 8 shows the long-term noise monitoring locations.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified that impacts related to the exposure of existing and proposed development to airport noise would be less than significant. The Eastern Dublin EIR also found that impacts related to exposure of proposed housing to future roadway noise, exposure of existing and proposed residences to construction noise, and noise conflicts due to the adjacency of diverse land uses permitted by plan policies supporting mixed-use development would be less than significant with implementation of mitigation measures identified in the Eastern Dublin EIR. In addition, the Eastern Dublin EIR identified that impacts associated with exposure of existing residences to future roadway noise and exposure of proposed residential development to noise from future military training activities at Camp Parks RFTA and the County jail would be significant and unavoidable. The City of Dublin adopted a Statement of

Overriding Considerations for this significant and unavoidable impact. The following mitigation measures would apply to the proposed project:

MM 3.10/1.0 Require that an acoustical study be submitted with all residential development projects located within the future Community Noise Equivalent Level (CNEL) 60 contour. The goal of the acoustical study is to show how the interior noise level will be controlled to a CNEL of 45 dB as required by Title 24, Pat II. The Title 24 goal of CNEL 45 should be applied to single-family housing.

MM 3.10/2.0 Require that development projects provide for noise barriers or berms near existing residences to control noise in outdoor use spaces. One possibility is the construction of solid fences around outdoor use areas. The noise control for existing residences should be evaluated on a case-by-case basis.

MM 3.10/4.0 Developers shall submit to the City a Construction Noise Management Program that identifies measures to be taken to minimize impacts on existing planning area residents. The program will include a schedule for grading and other major noise-generating activities that will limit these activities to the shortest possible number of days. Hours of construction activities shall be limited in keeping with Dublin ordinances. The Program for construction vehicle access to the site shall minimize construction truck traffic through residential areas. If construction traffic must travel through residential areas, then a mitigation plan should be developed. The Program may include barriers, berms or restrictions on hours.

MM 3.10/5.0 In order to minimize the impact of construction noise, all operations should comply with local noise standards relating to construction activities. When construction occurs near residential areas, then it should be limited to normal daytime hours to minimize the impact. Stationary equipment should be adequately muffled and located as far away from sensitive receptors as possible.

MM 3.10/6.0 Noise management plans shall be prepared and reviewed as part of development application for all mixed-use projects in which residential units would be combined with commercial, office, or other urban non-residential uses. The objective of the noise management plan would be to provide a high-quality acoustic environment for residents and nonresidential tenants/ owners by taking steps to minimize or avoid potential noise problems. The plan would be prepared by a qualified acoustical consultant. The plan would take into account the concerns of residents, nonresidential tenants/ owners, and maintenance personnel. The plan should be prepared at an early stage of the design process. Ideally, the acoustical consultant should provide input to the architect at a preliminary site plan stage, to make maximum use of detailed site planning to avoid noise conflicts.

2002 SEIR

A review of potential impacts related to the exposure of proposed and existing housing to noise levels in excess of standards established in the General Plan, exposure of future commercial, office and industrial uses to noise levels in excess of standards established in the General Plan, and exposure of people to or generation of excessive ground borne vibration or ground borne noise levels was conducted as part of the 2002 SEIR. The 2002 SEIR determined that no additional noise impacts would occur beyond those identified at the time the Eastern Dublin EIR was certified. However, the 2002 SEIR identified the following supplemental mitigation measures that would be applicable to the proposed project:

> **SM-NOISE-1** Require a noise insulation plan for general commercial (including any proposed office-type uses) and industrial land uses to be submitted for all such development projects located within the future CNEL 70 dBA contour. The plan shall show how interior noise levels would be controlled to acceptable levels. The acceptable level will depend on the type of use as set forth in the noise insulation plan. Interior noise levels could be controlled adequately by using sound-rated windows in windows closest to the streets and the freeway.
>
> **SM-NOISE-2** Except for local deliveries, restrict heavy truck traffic to designated arterial roadways and truck routes within the Project area and limit the hours of local deliveries to daytime hours as established by the City.

Fallon Village SEIR

No additional impacts were identified in the Fallon Village SEIR. However, the Fallon Village SEIR identified the following supplemental mitigation measures that would be applicable to the proposed project:

> **SM-NOISE-1 (aircraft flyovers).** All occupants of the residential dwellings within the proposed Project shall receive written notification at the time of sale, rental or lease of the potential for aircraft overflights of the Fallon Village Project area. Written notices shall be approved by the Dublin Community Development Director.
>
> **SM-NOISE-2 (future roadway noise affecting proposed residential development).** An acoustical study must be prepared for the project. The study shall show how the project will meet an indoor goal of 45 dBA CNEL. In addition, the study must show how noise in outdoor areas will meet the level of a CNEL of 60 dBA (CNEL of 65 dBA at City's discretion). Based on preliminary site development information it is likely that the project can meet the indoor goal with regular double-glazed windows (no special sound rating). A noise barrier may be required if backyards or other primary outdoor use spaces are located adjacent to either Croak Road or Upper Loop Road.
>
> **SM-NOISE-3 (compatibility of school and neighborhood park with future roadway noise).** The design of the elementary school and neighborhood park shall consider noise reduction measures to comply with City exterior noise exposure limits including but not

limited to appropriate siting of improvements, use of noise barriers and similar noise reduction techniques as may be needed.

SM-NOISE-4 (noise from Upper Loop Road affecting existing residences). Noise from Upper Loop Road is expected to generate a CNEL in excess of 60 dBA. The existing homes along the existing alignment of Fallon Road are currently exposed to an L_{dn} of about 56 to 59 dBA. It is unlikely but possible that the noise from Upper Loop Road would cause noise levels to increase by more than 6 dBA at these existing homes. However, an evaluation of noise from Upper Loop Road on existing dwellings shall be made and if it is found that the road would increase noise by more than 6 dBA in backyards of those existing homes, then appropriate noise mitigation measures (i.e., roadway alignment or noise barrier) shall be included in the new roadway design

Project Impacts and Mitigation Measures

(a) Generate noise exceeding standards

The short-term construction and long-term noise impacts associated with the proposed project are described below.

Short-Term Construction Noise Impacts. Project construction would result in short-term noise impacts on the nearby sensitive receptors. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone. The duration of noise impacts generally would be from one day to several days depending on the phase of construction. The level and types of noise impacts that would occur during construction are described below.

Table H lists typical construction equipment noise levels (L_{max}) recommended for noise impact assessments, based on a distance of 50 feet between the equipment and a noise receptor, obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model. Construction-related short-term noise levels would be higher than existing ambient noise levels currently in the project area but would no longer occur once construction of the project is completed.

Two types of short-term noise impacts could occur during construction of the proposed project. The first type involves construction crew commutes and the transport of construction equipment and materials to the site, which would incrementally raise noise levels on roadways leading to the project site. Two main categories of trips would be generated by construction activities: (1) worker commute trips; and (2) haul/delivery truck trips. Heavy equipment would not be hauled to/from the project site daily; it would be hauled in at the beginning of construction and hauled out upon completion of construction.

The second type of short-term noise impact is related to noise generated during site preparation and the construction of the proposed project. The proposed project would include phased construction, and would be undertaken in discrete steps, each of which would have its own mix of equipment, and consequently its own noise characteristics. These various sequential phases would change the character of the noise generated on the project site. Therefore, the noise levels would vary as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase.

Table H lists the maximum noise levels from the Highway Construction Noise Handbook recommended for noise impact assessments for the loudest anticipated construction that would be used for the project based on a distance of 50 feet between the equipment and a noise receptor. Typical operating cycles for these types of construction equipment may involve one to two minutes of full power operation followed by three to four minutes at lower power settings.

Table H: Typical Maximum Construction Equipment Noise Levels (Lmax)

Type of Equipment	Acoustical Usage Factor	Suggested Maximum Sound Levels for Analysis (dBA L_{max} at 50 ft)
Air Compressor	40	80
Backhoe	40	80
Crane	16	85
Dozers	40	85
Excavator	40	85
Forklift	20	85
Generator	50	80
Grader	40	85
Loader	40	80
Paver	50	85
Roller	20	85
Scraper	40	85
Skid Steer Loader	40	80
Tractor	40	84
Trencher	50	82
Water Truck	40	84

Source: *Highway Construction Noise Handbook* (FHWA 2006).
dBA = A-weighted decibel
FHWA = Federal Highway Administration
ft = foot/feet
HP = horsepower
L_{max} = maximum noise level

Each piece of construction equipment operates as an individual point source. Utilizing the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

Table I shows the composite noise levels of the two loudest pieces of equipment for each construction phase, at a distance of 50 feet from the construction area.

Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq\ (at\ distance\ X) = Leq\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA while halving the distance would increase noise levels by 6 dBA.

Table I: Equipment Noise by Construction Phase

Construction Phase	Loudest Equipment	Composite Noise Level at (dBA L_{eq} at 50 ft)
Site Preparation	Dozer	88
	Tractor	
Grading	Excavator	88
	Grader	
	Dozer	
	Scraper	
	Tractor	
Building Construction	Crane	86
	Forklift	
	Generator	
	Tractor	
	Welder	
Paving	Paver	86
	Paving Equipment	
	Roller	
Architectural Coating	Air Compressor	74

Sources: Compiled by LSA Associates, Inc. (2023). *Construction Noise Handbook* (FHWA 2006).
dBA = A-weighted decibel
FHWA = Federal Highway Administration
ft = foot/feet
L_{max} = maximum noise level

The closest sensitive receptors to the project site include a residence located approximately 200 feet north of Parcel 7 of the project site, measured from the center of the parcel, resulting in short-term noise levels of approximately 74 dBA L_{eq} at the closest residence.

Construction equipment would operate at various locations throughout the project site and construction activities at any one receptor location would occur for a limited duration. While construction-related short-term noise levels have the potential to be higher than existing ambient noise levels in the project area, the noise impacts would no longer occur once project construction is completed.

As compared to the EDSP EIRs, the proposed project would generate similar noise levels during construction and would implement the previously required mitigation measures, MM 3.10/4.0 and MM 3.10/5.0, to reduce construction related impacts to a less-than-significant level. With implementation of these mitigation measures, the proposed project would not result in any new or more severe impacts compared to those identified in the EDSP EIRs.

Long-Term Off-Site Traffic Noise Impacts.The EDSP EIRs identified the sources of major noise affecting the EDSP area to be vehicular traffic stemming from I-580. The proposed project is estimated to generate an average daily traffic (ADT) volume of 22,618. The EDSP EIRs identified a potentially significant impact for future roadway noise as a result of build out of the EDSP, which includes the proposed project. Implementation of mitigation measures within the EDSP EIRs would reduce this impact to a less than significant level.

Long-Term Off-Site Operation-Related Noise Impacts.DMC Section 8.36.060(C)(3) states that for lots 5,000 square feet or larger, mechanical equipment that generates noise when located within a required setback as allowed by this subsection, and within 10 feet of an existing or potential residence, or an existing paved patio area on adjoining property, shall be enclosed as necessary to reduce noise at the property line to a maximum of 50 dBA at any time. As such, this analysis evaluates whether noise impacts associated with the long-term operation of the project comply with the 50 dBA L_{eq} standard. Stationary noise generated by the proposed project includes heating, ventilation, and air conditioning (HVAC) equipment, parking lot activities, and truck delivery and truck unloading activities.

*Parking Lot and Loading Activities.*Of the on-site stationary noise sources during operation of the project, noise generated by delivery truck activity would generate the highest maximum noise levels. Typical parking lot activities, such as people conversing or doors slamming, would generate noise levels of approximately 60 dBA to 70 dBA L_{max} at 50 feet, while delivery truck loading and unloading activities would generate noise levels of 75 dBA L_{max} at 50 feet based on measurements previously conducted by LSA.

The proposed commercial uses could include loading activities, which could generate potential noise sources that could affect noise-sensitive receptors in the project site vicinity. However, as discussed above, the closest off-site sensitive receptors to proposed commercial uses includes the residence located approximately 500 feet north of the closest commercial parcel of the project site. At this distance, loading and unloading activities would result in maximum noise levels generate a noise level of 55 dBA L_{max}. However, peak noise levels from loading and unloading would be intermittent and when averaged over one hour, these sources would not exceed the City’s 50 dBA L_{eq} standard for residential land uses.

*Mechanical Equipment.*In addition, adjacent off-site land uses would be potentially exposed to stationary-source noise impacts from HVAC equipment proposed with the project. The project is expected to have HVAC units serving each building, which could operate 24 hours per day. One HVAC unit would generate a noise level of 72 dBA L_{eq} at 3.3 feet, based on manufacturer testing of typical equipment for such uses. At 50 feet, the noise level associated with the operation of the proposed HVAC equipment would be below the City's 50 dBA L_{eq} exterior noise standard for mechanical equipment. Because the proposed HVAC system would be greater than 50 feet from nearby sensitives receptors, as described above, the proposed project would not 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 any other applicable standards.

Land Use Compatibility.The EDSP EIRs evaluated the noise compatibility of future development and found that depending on the location of new land uses that may be constructed, future noise levels within some portions of the Project Area could be incompatible with such uses. Therefore, the EDSP EIRs identified mitigation measures MM 3.10/1.0, MM 3.10/3.0, MM 3.10/6.0 and supplemental measures SM-NOISE-1, SM-NOISE-2 (future roadway noise affecting proposed residential development), SM-NOISE-3 (compatibility of school and neighborhood park with future roadway noise), and SM-NOISE-4 (noise from Upper Loop Road affecting existing residences) to reduce future roadway noise and exposure of proposed residential development to noise.

The City sets forth normally acceptable noise level standards for land use compatibility and interior noise exposure of new development. The normally acceptable exterior noise level for residential land uses is up to 60 dBA CNEL. Exterior noise levels of 61 to 70 dBA CNEL are considered conditionally acceptable when a detailed analysis of noise reduction requirements is made and needed noise insulation features are included in the design. Exterior noise levels between 71 and 75 dBA CNEL are considered normally acceptable and noise levels over 75 dBA CNEL are considered clearly unacceptable. The normally acceptable interior noise level for residential land uses is 45 dBA CNEL.

The noise environment at the project site is dominated by vehicle traffic noise on the roadways surrounding the project site, occasional aircraft noise, and background construction noise. The measured noise levels at the project site range from approximately 62.2 dBA CNEL to 63.1 dBA CNEL. Based on the City's noise and land use compatibility standards, this noise level is considered conditionally acceptable for residential land uses. Therefore, the proposed project would be required to comply with MM 3.10/6.0, and SM-NOISE-2 (future roadway noise affecting proposed residential development). MM 3.10/1.0, which requires an acoustical study be submitted with all residential development projects located within the CNEL 60 contours would not apply because the project is outside of the CNEL 60 contours.

MM 3.10/6.0 requires preparation of noise management plans for all mixed-use projects in which residential units would be combined with commercial, office, or other urban non-residential uses. SM-NOISE-1, identified in 2002 SEIR, requires a noise insulation plan be prepared for general commercial uses within the future CNEL 70 dBA contour that demonstrates how interior noise levels would be controlled to acceptable levels. SM-NOISE-2 (future roadway noise affecting proposed residential development) requires an acoustical study be prepared to show how residential development will meet indoor noise levels of 45 dBA CNEL and outdoor noise levels of 60 dBA CNEL.

With implementation of MM 3.10/6.0, SM-NOISE-1, and SM-NOISE-2 (future roadway noise affecting proposed residential development), the proposed project would achieve an acceptable interior and exterior noise level in accordance with the land use compatibility guidelines of the Noise Element of the City's General Plan and, therefore, there would be no impact. MM 3.10/3.0, SM-NOISE-3 (compatibility of school and neighborhood park with future roadway noise), and SM-NOISE-4 (noise from Upper Loop Road affecting existing residences) would not be applicable to the proposed residential units based on their location.

For the reasons outlined above, with adherence to the aforementioned mitigation measures, no new impacts or substantially more severe significant impacts related to noise in excess of established standards, beyond those identified in the EDSP EIRs, would occur.

(b) Generate excessive ground borne vibration or ground borne noise

Construction of the proposed project could result in the generation of groundborne vibration. This construction vibration impact analysis assesses the potential for building damage using vibration levels in peak particle velocity (in/sec PPV). The criteria for environmental impacts resulting from ground-borne vibration are based on the maximum levels for a single event. The guidelines within the Federal Transit Administration (FTA) Manual have been used to determine vibration impacts (refer to Table J, below).

Table J: Construction Vibration Damage Criteria

Building Category	PPV (in/sec)
Reinforced concrete, steel, or timber (no plaster)	0.50
Engineered concrete and masonry (no plaster)	0.30
Non-engineered timber and masonry buildings	0.20
Buildings extremely susceptible to vibration damage	0.12

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018), Table 12-3.
FTA = Federal Transit Administration PPV = peak particle velocity
in/sec = inches per second

The FTA Manual guidelines show that a vibration level of up to 0.2 in/sec PPV is considered safe for non-engineered timber and masonry buildings and would not result in any construction vibration damage. Therefore, in order to be conservative, the 0.2 in/sec PPV threshold has been used when evaluating vibration impacts at the nearest structures to the site.

Table K shows the PPV values at 25 feet from a construction vibration source. Bulldozers and other heavy-tracked construction equipment (except for vibratory rollers) generate approximately 0.089 in/sec PPV of groundborne vibration when measured at 25 feet.

Table K: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV (in/sec) at 25 feet
Vibratory Roller	0.210
Hoe Ram	0.089
Large Bulldozer	**0.089**
Caisson Drilling	0.089
Loaded Trucks	0.076
Jackhammer	0.035
Small Bulldozer	0.003

Sources: *Transit Noise and Vibration Impact Assessment* (FTA 2018).
in/sec = inches per second PPV = peak particle velocity

Construction vibration, similar to vibration from other sources, would not have any significant effects on outdoor activities (e.g., those outside of residential buildings in the project vicinity). While vibration from construction activity was not assessed in the EDSP EIRs, the proposed project is expected to include the use of heavy equipment similar to a large bulldozer. The distance to the nearest buildings for vibration impact analysis is measured between the nearest off-site buildings and the project disturbance areas because vibration impacts occur normally within the buildings. The formula for vibration transmission is provided below.

$$PPV_{equip} = PPV_{ref} \text{ x } (25/D)^{1.5}$$

The closest structure to the project site for the vibration analysis[26] includes the residence located approximately 20 feet north of Parcel 7 of the project site. At this distance, the closest structure would experience vibration levels of approximately 0.124 in/sec PPV with the use of heavy equipment at the property line. Based on this analysis, vibration levels would not exceed any of the established guidelines considered for damage potential. In addition, short-term construction impacts related to ground-borne vibration or ground-borne noise would be minimal and temporary in nature and would cease upon construction.

Once operational, increased traffic on I-580 and project area roadways also could increase groundborne vibration caused by the passage of heavy trucks or equipment along nearby streets. As such, implementation of SM-NOISE-2 was identified to reduce groundborne vibration from increased levels of heavy traffic to less than significant by restricting heavy truck traffic to certain roadways/routes within the EDSP area and limiting deliveries to daytime hours. With implementation of SM-NOISE-2, the proposed project would result in less-than-significant operational vibration impacts. Therefore, with implementation of this mitigation measure, no new impacts or substantially more severe significant impacts related to groundborne vibration, beyond those identified in the EDSP EIRs, would occur.

[26] For vibration, the analysis is conducted based on the distance between the perimeter of construction (edge of parcel) to the nearest adjacent structure, which for this project is 20 feet. For construction noise analyses, the distance is measures from the center of the parcel to the nearest surrounding use.

(c) Excessive noise level near an airport

The project site is located approximately 0.65-mile northwest of the Livermore Municipal Airport. Aircraft noise is occasionally audible at the project site; however, no portion of the project site lies within the 60 dBA CNEL noise contours of this airport nor does any portion of the project site lie within two miles of any other airfield or heliport. Therefore, the proposed project would not result in the exposure of people residing or working in the project area to excessive noise levels and there would be no impact. Therefore, no new impacts or substantially more severe significant impacts related to excessive noise near an airport would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified noise impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant noise impacts beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Sources

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Population and Housing

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
13. POPULATION AND HOUSING. Would the project:			
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?			X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X

Environmental Setting

According to the City of Dublin General Plan, in 2010, Dublin's total population was estimated at 46,036 and represented 17 percent of the 269,437 residents in the Tri-Valley area. Data from the 2020 U.S. Census indicates that Dublin's total population has grown to 72,589 and 24,426 housing units. The project site is currently undeveloped.

Previous CEQA Documents

Eastern Dublin EIR

Section 3.2 in the Eastern Dublin EIR provides the demographics, housing and employment context for the EDSP. The Eastern Dublin EIR provided a program-level analysis of the development potential envisioned for the EDSP area, including the increased development potential in the City, the Tri-valley area, and the entire San Francisco Bay Area. The Eastern Dublin EIR specifically evaluated new development potential in the EDSP area of up to 17,970 residential units and approximately 12 million square feet of non-residential space, including approximately five million square feet of commercial, four million square feet of office, and two million square feet of industrial park. No impacts related to population or displacement of existing housing were identified. Growth-inducing impacts associated with implementation of the EDSP were evaluated in Section 5.2 of the Eastern Dublin EIR. As stated in Section 5.2 of the Eastern Dublin EIR, expansion of the water distribution system infrastructure in anticipation of growth beyond the project site was determined to be growth-inducing. This impact was identified as a significant and unavoidable impact. Impacts related to utilities are discussed below in Section 18, Utilities and Service Systems. No mitigation measures were identified related to population and housing.

2002 SEIR

The 2002 SEIR identified no supplemental impacts resulting from the EDPO project because population growth associated with the EDPO would not be beyond that anticipated or planned for in the City of Dublin General Plan and the EDSP.

Fallon Village SEIR

No additional impacts or mitigation were identified in the Fallon Village SEIR.

Project Impacts and Mitigation Measures

(a) Population growth

The site is identified in the General Plan and the EDSP for MH Density Residential (13.5 acres), and GC/CO (126.3 acres), Parks/Public Recreation-Community Park (7.2 acres), Open Space (44.9 acres), and Public/Semi Public (2.5 acres). The extension of infrastructure onto the project site, including roadways and utilities that would only serve the proposed development, would not contribute to or cause additional growth to occur outside of the City boundaries or elsewhere within the vicinity of the project site, as the project site is surrounded by other properties that have been designated for development in the City's General Plan, EDSP and subsequent planning documents.

The proposed project would generate housing-related population growth by developing up to 238 residential dwelling units at the project site, which is consistent with the number of residential units considered and approved as part of the EDSP EIRs. According to the U.S. Census data, between 2016 and 2020, the City had an average of 2.99 persons per household. Based upon an average of 2.99 persons per household, and with up to 238 proposed residential units, the proposed project would increase the City's population by approximately 712 residents. Based on population estimates prepared for Plan Bay Area 2050,[27] this increase represents about 1.2 percent of the City's total estimated population in 2015 (56,165). The estimated population generated by the project (712 residents) would represent approximately 0.85 percent of the City's projected 2040 population (83,595). The population growth anticipated between 2010 and 2040 is expected to be 36,915; population associated with the project would represent 1.9 percent of the anticipated growth. The amount of residential development proposed as part of the current project is consistent with the population growth anticipated in the City's General Plan, the EDSP, and the Fallon Village project approvals. Therefore, the proposed project would not induce substantial unplanned population growth.

In addition, the proposed project would result in development of 3,299,670 square feet of GC/CO uses, which is an increase of 1,777,509 square feet from that considered and approved as part of the EDSP EIRs. Per the City's General Plan, the allowed employee density within the GC/CO land use designation is 385 square feet per employee. Therefore, the proposed project

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27 Association of Bay Area Governments and Metropolitan Transportation Commission. 2018. Plan Bay Area Projections 2040. May.

could provide employment opportunities for up to 8,571 employees at the project site or 4,617 additional employees than previously approved. According to the U.S. Census approximately 92 percent of Dublin residents worked outside of the City, while eight percent of Dublin residents both live and work within the City limits. Using this estimate, approximately 370 additional employees generated by the proposed project would require housing within the City or would move to the City solely for reasons of employment. These 370 employees could be accommodated by the residential development proposed as part of the project, other residential development nearby (e.g., Francis Ranch, Righetti project, Branaugh project), or residential development being constructed elsewhere in the City.

The portions of the project site designated as GC/CO are intended to provide for a wide variety of regional and community-serving retail and office uses. Because it is anticipated that these uses would provide employment, the proposed project would not induce substantial unplanned population growth in the area.

The proposed project would not induce substantial unanticipated population growth in the City, and the population increase would fall within the increase identified in the City's General Plan, including the Housing Element, the EDSP, and the Fallon Village Project approvals and, therefore, there would be no impact. No new impacts or substantially more severe significant impacts related to population growth would occur.

(b) Housing and resident displacement

The proposed project would not displace substantial numbers of existing housing or people, such that replacement housing would need to be constructed elsewhere, as the site is currently vacant and, therefore, there would be no impact. No new impacts or substantially more severe significant impacts related to housing and resident displacement would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified population and housing impacts, nor result in new significant impacts.

There are no applicable regulatory requirements or mitigation measures identified in the EDSP EIRs that are applicable to population and housing and there would be no new or substantially more severe significant impacts to population and housing beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Sources

Association of Bay Area Governments and Metropolitan Transportation Commission. 2018. Plan Bay Area Projections 2040. May.

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Public Services

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
14.	**PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or need for new or physical 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:**			
a)	Fire protection?			X
b)	Police protection?			X
c)	Schools?			X
d)	Parks?			X
e)	Other public facilities?			X

Environmental Setting

The proposed project is located within the City of Dublin and is served by the following existing public services.

Fire Protection

Fire suppression, emergency medical and rescue services, and other life safety services are provided to the project area and project site by the Alameda County Fire Department (ACFD). There are three fire stations in Dublin, with the closest to the project site being Fire Station No. 18 at 4800 Fallon Road, approximately 4.4 miles northwest. Back-up service to the project area would be provided by Fire Station 17, located at 6200 Madigan Road in Dublin.

Police Protection

The Alameda County Sherriff's Office provides contracted police protection to the project area and project site. The Dublin Police Services headquarters are located at 6361 Clark Avenue, west of the project site.

Schools

The project site is served by the Dublin Unified School District, which operates seven elementary, two middle, one K-8, one comprehensive high school, and one continuation high school, within the City of Dublin. The closest schools to the project site include Fallon Middle School, Jose Maria Amador Elementary School, and Cottonwood Creek K-8 School.

Parks

The City's Public Works Department oversees the maintenance of parks and recreational facilities throughout the City. According to the City's 2022 Parks and Recreation Master Plan, the City provides approximately 237.04 acres of parkland across 24 parks, including 18 neighborhood parks, 5 community parks, and one nature park. In addition to these park facilities, the City maintains over 26.26 miles of greenways and trails. Table L summarizes the parks within 1 mile of the project site.

Table L: Existing Parks in the Vicinity of the Project Site

Park	Park Type	Acres	Distance from Project Site	Park Amenities
Cottonwood Creek Park and School	Neighborhood Park	10.08	Directly adjacent to the northern project site boundary.	Play equipment and basketball courts.
Jordan Ranch Park	Neighborhood Park and Square	4.9	0.3 miles north of the project site.	Picnic tables/area, barbeque grills, play equipment, restrooms, volleyball courts (grass), walkways/trails, basketball courts, and drinking fountain.
Sunrise Park	Nature Park	10.75	0.04 miles west of the project site, across Fallon Drive.	Nature park/open space.
Clover Park	Neighborhood Square	2.0	0.2 miles west of the project site.	Picnic tables/area, play equipment, restrooms, walkways/trails, drinking fountain, and fitness equipment.
Fallon Sports Park	Active Community Park	60.1	0.2 miles northwest of the project site.	Picnic tables/area, barbeque grills, play equipment, restrooms, soccer fields, softball fields, lighted tennis courts, volleyball courts (sand), walkways/trails, fields for rental, basketball courts, baseball fields, batting cage, bocce ball courts, BMX course, cricket fields, and drinking fountain.
Bray Commons	Neighborhood Park and Square	4.8	0.5 miles west of the project site.	Picnic tables/area, barbeque grills, play equipment, restrooms, volleyball courts (grass), walkways/trails, basketball courts, dog run/dog park, and drinking fountain.

Source: City of Dublin. 2022. *Parks and Recreation Master Plan.*

Library Services

The Dublin Library is operated by Alameda County Library, with additional funding from the City of Dublin. The Dublin Library is located at 200 Civic Plaza, west of the project site.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to increased demand for police and fire protection services, fire response to outlying areas, exposure to wildlands hazards, increased demand for schools and school overcrowding, increased demand for parks and impacts on existing park and trail facilities. Mitigation measures were identified to reduce potential impacts to a less-than-significant level. The following mitigation measures would be applicable to the proposed project:

> **MM 3.4 / l .0 (Policy 8-4).** Provide additional personnel and facilities and revise "beats" as needed in order to establish and maintain City standards for police protection service in Eastern Dublin.
>
> **MM 3.4/2.0 (Action Program 8D).** Coordinate with the City Police Department regarding the timing of annexation and proposed development, so that the Department can adequately plan for the necessary expansion of services to the area.
>
> **MM 3.4/3.0 (Action Program 8E).** Incorporate into the requirements of project approval Police Department recommendations on project design that affect traffic safety and crime prevention.
>
> **MM 3.4/5.0 Police Review of Proposed Projects.** As a part of the development approval process in Eastern Dublin, the City shall require the Police Department to review and respond to the planned development with respect to:
>
> - Project design layout relating to visibility, security and safety.
> - Project circulation system and access issues.
> - Project implications for emergency response times.
>
> Prior to final approval of non-residential development and improvement plans, the City Police Department shall review the proposed use, layout, design, and other project features for police surveillance/ access, security devices, such as alarms and lighting, visibility, and any other police issues or concerns.
>
> **MM 3.4/7.0 (Program 8F).** Establish appropriate funding mechanisms (e.g., Mello Roos District, developer financing with reimbursement agreements, etc.) to cover up-front costs of capital improvements (i.e., fire stations and related facilities and equipment).

MM 3.4/9.0 (Program 8H). Incorporate ~~Dougherty Regional Fire Authority (DRFA)~~[28] Alameda County Fire District recommendations on project design relating to access, water pressure, fire safety and prevention into the requirements for development approval. Require that the following DRFA design standards are incorporated where appropriate:

- Use of non-combustible roof materials in all new construction.
- Available capacity of 1,000 GPM at 20 PSI fire flow from project fire hydrants on public water mains. For groupings of one-family and small two-family dwellings not exceeding two stories in height, the fire flow requirements are a minimum of 1,000 GPM. Fire flow requirements for all other buildings will be calculated based on building size, type of construction, and location.
- A buffer zone along the backs of homes, which are contiguous with the wildland area. This buffer zone is to be landscaped with irrigated (wet banding) or equivalent fire-resistive vegetation.
- Automatic fire alarm systems and sprinklers in all nonresidential structures for human use.
- Compliance with DRFA minimum road widths, maximum street slopes, parking recommendations, and secondary access road requirements.
- Require residential structures outside the DRFA's established response time and zone to include fire alarm systems and sprinklers.

MM 3.4/17.0 (Policy 8-3). Ensure that new development in Eastern Dublin, including both residential and non-residential development, fully mitigates the impact of such growth on school facilities.

MM 3.4/29.0 (Policy 4-29). Ensure, as part of the approval process, that each new development provides its fair share of planned open space, parklands and trail corridors.

MM 3.4/31.0 (Action Program 4N). Calculate and assess in-lieu park fees based on the City's parkland dedication ordinance. Credit toward parkland dedication requirements will only be given for level or gently sloping areas suitable for active recreation use.

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[28] The Dougherty Regional Fire Authority (DRFA) was a Joint Powers Authority between the City of Dublin and the City of San Ramon to provide fire services for these two communities. DRFA had three fire stations - two in Dublin and one in San Ramon. DRFA was dissolved in 1997 with the Alameda County services being contracted to Alameda County Fire District and the small portion of San Ramon served by DRFA being annexed into the San Ramon Valley Fire District.

2002 SEIR

The 2002 SEIR did not identify any potentially significant supplemental impacts associated with fire and police protection, schools, parks, and other public facilities.

Fallon Village SEIR

The Fallon Village SEIR did not identify any potentially significant supplemental impacts related to public services.

Project Impacts and Mitigation Measures

(a) Fire protection

The Fallon Village SEIR determined that the additional residential development proposed as part of the Fallon Village project was assumed as part of the Eastern Dublin EIR and that the amount of additional non-residential development could be accommodated with existing fire personnel and facilities. The proposed project would subdivide the 192-acre site into 11 parcels to accommodate proposed development of up to 238 residential units and up to 3,299,670 square feet of GC/CO uses, resulting in approximately 4,617 additional employees than were analyzed in the EDSP EIRs. Development of this additional square footage of non-residential use could incrementally increase demand for fire protection services. However, the proposed project is required to adhere to the California Building Code (CBC), the California Fire Code and City of Dublin codes, ordinance and regulations to minimize fire hazards, including fire prevention and suppression measures; fire hydrants and sprinkler systems; emergency access; and other similar requirements, which would reduce potential fire protection impacts. The additional 4,618 employees resulting from implementation of the proposed project would represent a small, approximately 1 percent, increase in the ACFD service population. In addition, the ACFD has a number of implemented and planned programs and projects related to expanding their capacity to provide fire protection services to their service area, including approval of a $30 million Training Center Project to be located in the City of Dubin, a $90 million Fire Safety Bond (Measure X) to repair, upgrade and replace outdated fire stations in unincorporated communities of Alameda County, and ongoing recruitment strategies as ACFD prepares its Strategic Business Plan for the period 2020-2030. ACFD would continue to provide services to the project site and, with implementation of the above approved and planned expansion projects, would not require additional firefighters to serve the proposed project. As such, the demand for fire protection services resulting from the proposed project would not require the construction of new or alteration of existing fire protection facilities to maintain an adequate level of fire protection service that would result in physical environmental impacts. Therefore, no new impacts or substantially more severe significant impacts related to fire protection would occur.

(b) Police protection

The Fallon Village SEIR determined that the addition of 2,878,444 square feet of non-residential land within the project area would result in an increased number of calls for service to the Dublin Police Department, primarily related to traffic violations and burglary/ theft. However, the addition of the non-residential square footage, in and of itself, would not cause the need to construct new or expanded police buildings or other facilities that would result in a supplemental impact. Therefore, no supplemental impacts were identified.

The proposed project would subdivide the 192-acre site into 11 parcels to accommodate proposed development of up to 238 residential units and up to 3,299,670 square feet of GC/CO uses, resulting in approximately 4,617 additional employees than were analyzed in the EDSP EIRs. The increased demand for police protection services resulting from the proposed project would not be substantial compared to the level of service identified in the EDSP EIRs and would not require the construction of new or alteration of existing police protection facilities to maintain an adequate level of police protection service. In addition, the Dublin Police Department has increased their staffing in 2022 as summarized in the 2022 Annual Report and has plans to further increase staffing. As such, the demand for police protection services resulting from the proposed project would not require the construction of new or alteration of existing police protection facilities to maintain an adequate level of police protection service that would result in physical environmental impacts. Therefore, no new impacts or substantially more severe significant impacts related to police protection would occur.

(c) Schools

The Fallon Village SEIR determined that the number of students expected to be generated by dwelling units from the Fallon Village Project is below the number of students based on student generation rates used in the Eastern Dublin EIR analysis; therefore, no supplemental impacts related to student generation, or the number of students were identified. In addition, the Fallon Village SEIR determined that adequate facilities have been planned in the Eastern Dublin area to accommodate students anticipated to be generated by the Fallon Village Project.

The number of residential units proposed as part of the current project are consistent with those assumed in the EDSP EIRs and would result in similar, less than significant impacts, on school facilities as described in the EDSP EIRs. As described above, 370 additional employees associated with implementation of the proposed project would reside in the City of Dublin; these additional employees could generate a small number of additional students in the City. Appropriate developer impact fees, as required by State law, would be assessed and paid by the project applicant to offset any impact to school facilities, consistent with Mitigation Measure 3.4/17.0 identified in the Eastern Dublin EIR. Therefore, no new impacts or substantially more severe significant impacts related to schools would occur.

(d) Parks

The Fallon Village SEIR determined that the number, location and size of proposed parks would be sufficient to meet City of Dublin standards and would be consistent with the City of Dublin Parks and Recreation Master Plan. Further, developers within the Fallon Village Project area would be required to pay Public Facility Fees to the City of Dublin for individual developments that do not meet City park dedication standards, consistent with Mitigation Measure 3.4/31.0 in the Eastern Dublin EIR. As described above, the number of residential units proposed as part of the current project area is consistent with those assumed in the EDSP EIRs. The increase in non-residential use resulting from the proposed project would not generate significant demand for additional parks or recreation facilities. Further, the proposed project would include the development of a 7.2-acre Community Park and approximately 42.6 acres for a Natural Community Park, which would contribute to the City's overall acreage of park and recreation facilities. Therefore, the proposed project would not contribute to a substantial increase in population necessitating either construction of new or alteration of existing park facilities to maintain an adequate level of service. No physical impacts associated with the provision of park services would occur. Therefore, no new impacts or substantially more severe significant impacts related to parks would occur.

(e) Other public facilities

Residents served by the proposed project would likely patronize public facilities such as local library branches operated by the Alameda County Library. However, as described above these residents are within the population assumptions evaluated and approved as part of the EDSP EIRs and the increase in non-residential use resulting from the proposed project would not generate significant demand for other public facilities; therefore, the proposed project is not anticipated to substantially increase the number of library patrons utilizing public facilities, such that new or physically altered facilities would be required. Therefore, no new impacts or substantially more severe significant impacts related to other public facilities would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified public services impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to public services beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Sources

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2022. City of Dublin Parks and Recreation Master Plan.

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Recreation

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
15.	**RECREATION. Would the project:**			
a)	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X
b)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?			X

Environmental Setting

The City of Dublin has a variety of recreational facilities including neighborhood parks, community parks, community facilities, a senior center, open space areas and a series of trail networks. According to the City of Dublin Parks and Recreation Master Plan, the City of Dublin currently has 24 parks totaling 237.04 acres. The City of Dublin also maintains over 26.26 miles of greenways and trails. The series of routes stretches throughout the City and ranges from recreational trails to shared-use paths. In addition, the East Bay Regional Park District (EBRPD) operates the Dublin Hills Regional Park, a large open space park with regional trail connections. The Iron Horse Trail runs along the Union Pacific/Southern Pacific Railroad right-of-way, connecting Dublin, the Dublin/Pleasanton BART station and the City of Pleasanton.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to increased demand for park facilities, fiscal impacts associated with the provision of new park and recreation facilities and impacts on the regional trail system and open space connections. Mitigation measures were identified to reduce potential impacts to a less than significant level. The following mitigation measures would be applicable to the proposed project:

MM 3.4/29.0 (Policy 4-29). Ensure, as part of the approval process, that each new development provide its fair share of planned open space, parklands and trail corridors.

MM 3.4/31.0 (Action Program 4N). Calculate and assess in-lieu park fees based on the City's parkland dedication ordinance. Credit toward parkland dedication requirements will only be given for level or gently sloping areas suitable for active recreation use.

2002 SEIR

Impacts to existing recreation facilities were addressed in the Initial Study for the 2002 SEIR. No potentially significant impacts or mitigation measures were identified.

Fallon Village SEIR

The Fallon Village SEIR evaluated the adequacy of parkland proposed as part of the Fallon Village Project relative to the City's requirements. The Fallon Village SEIR determined that the location and sizes of community and neighborhood parkland proposed as part of the Fallon Village Project was consistent with the current City of Dublin Parks and Recreation Master Plan so there would be no significant supplemental impacts with regard to provision of City parks.

Project Impacts and Mitigation Measures

(a) Increase the use of existing recreation facilities causing deterioration

As discussed in Section 14.d, implementation of the proposed project, which would provide 238 residential units, is consistent with the level of residential development evaluated in the EDSP EIRs. The increase in non-residential use resulting from the proposed project would not generate significant demand for additional parks or recreation facilities. Further, the proposed project would include the development of a 7.2-acre community park and approximately 42.6 acres for a Natural Community Park, which would contribute to the City's overall acreage of park and recreation facilities. Therefore, the proposed project would not substantially increase the demand for park and recreation facilities beyond what was previously analyzed. Similarly, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated. Therefore, no new impacts or substantially more severe significant impacts related to increased use of existing recreation facilities would occur.

(b) Propose, require new facilities that cause physical effect

As outlined in the project description, the proposed project would include dedication of land for a future 7.2-acre Community Park and 42.6 acres for a Natural Community Park. As outlined in the 2022 Parks and Recreation Master Plan, the Community Park amenities include picnic areas with tables, play equipment, restrooms, and three soccer fields. The proposed Natural Community Park would be designed for low impact use and maintenance, with hiking and walking trails. Improvements associated with these proposed park uses were considered and evaluated as part of the EDSP EIRs and would be developed consistent with the City of Dublin Parks and Recreation Master Plan and in compliance with the requirements for provision of park land outlined in the City's Municipal Code. Potential adverse effects on the environment related to the development of the proposed project have been evaluated in this Initial Study checklist. Therefore, no new impacts or substantially more severe significant impacts related to new recreation facilities would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP

EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified recreation impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and implementation of mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to recreation impacts beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Sources

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985. (Amended as of February 15, 2022).

Dublin, City of. 2022. City of Dublin Parks and Recreation Master Plan.

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Transportation

ENVIRONMENTAL IMPACTS Issues		New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
16.	**TRANSPORTATION/TRAFFIC. Would the project:**			
a)	Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X
b)	Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X
c)	Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X
d)	Result in inadequate emergency access?			X

Environmental Setting

The following section describes the existing conditions of the study area associated with the proposed project, including roadway, transit, bicycle, and pedestrian networks.

Roadway Network

The roadway network surrounding the project site is described in the following section.

Freeways

Interstate 580 (I-580) is a generally east-west freeway that runs south of the project site. I-580 connects the San Francisco Bay Area to the west and the City of Livermore to the east. The posted speed limit in the vicinity of the project is 65 miles per hour (mph). Express lanes are present in both directions and are in effect Monday through Friday from 5:00 a.m. to 8:00 p.m.

Arterials/Collectors/Local Roadways

Dublin Boulevard is a six-lane divided east-west roadway that extends west of the project site. Dublin Boulevard is classified in the City's General Plan[29] as an arterial between its western limits and Tassajara Road and classified as a collector between Tassajara Road and Fallon Road (as well as the proposed extension to North Canyons Parkway). On-street parking is not permitted along this roadway and the posted speed limit is 45 mph in the vicinity of the project.

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[29] The City of Dublin General Plan. *Chapter 5: Land Use and Circulation – Circulation and Scenic Highways Element*. Amended 2022. https://www.dublin.ca.gov/DocumentCenter/View/7799/Chapter-5-May-2020?bidId=

Dublin Boulevard is proposed to be extended connecting from its current terminus at Fallon Road to North Canyons Parkway in Livermore.

Central Parkway is a two-lane divided east-west roadway that extends west from Croak Road to Sterling Street. The roadway generally runs through residential land uses and provides access to Cottonwood Creek TK-8 School near the project. Central Parkway is classified as an arterial between Tassajara Road and Fallon Road and as a collector for its remaining extent. On-street parking is permitted east of Sunset View Drive near the project and in other segments abutting residential land uses. The posted speed limit is 25 mph in vicinity of the project. Central Parkway would be extended with the project to provide a connection to the transportation network for the residential portion.

Croak Road is a north-south roadway that is currently not accessible to the public near the project site. Croak Road connects to Fallon Road near I-580, Central Parkway at its eastern terminus, and Terracina Drive. The roadway is classified as a local residential roadway between Central Parkway and Positano Parkway. Once the Dublin Boulevard Extension is constructed, Croak Road will connect Dublin Boulevard and Central Parkway. Croak Road would also be extended with the project to provide a connection to the transportation network for the residential portion.

Fallon Road/El Charro Road is a north-south divided roadway that widens from four lanes south of Central Parkway to six lanes to the north; south of I-580, Fallon Road becomes El Charro Road within the City of Pleasanton. Fallon Road is classified as an arterial roadway near the project site. The roadway primarily serves residential land uses within the City of Dublin, with some retail located near I-580. On-street parking is not permitted along this roadway. The posted speed limit is 45 mph in the vicinity of the project.

Stoneridge Drive/Jack London Boulevard is an east-west roadway located south of I-580; the roadway is Stoneridge Drive within the City of Pleasanton and Jack London Boulevard within the City of Livermore. Stoneridge Drive/Jack London Boulevard is classified as an arterial between Foothill Road and its eastern limits. On-street parking is not permitted along this roadway. Class II bicycle lanes are present along much of its length. The posted speed limit is 40 mph in the City of Pleasanton (Stoneridge Drive) and increases to 45 mph in the City of Livermore (Jack London Boulevard). Stoneridge Drive is a four to six-lane roadway; Jack London Boulevard varies from two to six lanes.

Tassajara Road is a major north-south roadway in Dublin that connects to Fallon Road/Camino Tassajara to the north and the City of Pleasanton to the south. Tassajara Road is classified as an arterial roadway within the City of Dublin; south of I-580 within the City of Pleasanton, the roadway becomes Santa Rita Road. The roadway varies from two lanes to five lanes and is divided along its southern portion, between Stoneridge Drive and Dublin Ranch Drive. On-street parking is not permitted along this roadway. The posted speed limit is 35 mph between Dublin Boulevard and I-580 and 40 mph between Dublin Boulevard and Gleason Drive within the study area. Class II bicycle lanes are present, except for on the overpass over I-580.

Hacienda Drive is a north-south roadway that provides access to office, residential, and retail land uses such as Hacienda Crossings and Persimmon Place. Hacienda Drive is classified as an arterial and ranges from three lanes to six lanes. On-street parking is not permitted. The posted speed limit is 35 mph within the study area.

North Canyons Parkway is an east-west arterial roadway that will connect to the planned Dublin Boulevard Extension at its present western terminus at Doolan Road. The roadway merges with Portola Avenue at Collier Canyon Road. It is a four-lane, divided road with a posted speed limit of 40 mph near the study area. On-street parking is generally prohibited and a bicycle lane is present on both sides of the road. North Canyons Parkway provides access to commercial and office land uses east of the project site, including several hotels and a Costco Wholesale warehouse.

Airway Boulevard is a north-south roadway in Livermore that provides access to I-580 and the Livermore Municipal Airport and connects to North Canyons Parkway at its northern terminus. It is classified as an arterial roadway and is a divided six-lane road north of Kitty Hawk Road/I-580 EB off-ramp. The posted speed limit is 45 mph. Class II bicycle lanes are present, except for on the overpass over I-580.

Transit Facilities

The project area is served by Tri-Valley Wheels, which provides fixed-route bus service operated by the Livermore Amador Valley Transit Authority (LAVTA) to Dublin, Livermore, Pleasanton, and neighboring communities. Wheels also offers a Dial-A-Ride Paratransit service to eligible patrons in Dublin, available wherever fixed-route service is operating. Three routes directly serve the area surrounding the project – Route 2, Route 30R (Rapid), and Route 501 (School Route). Currently, Route 30R follows Dublin Boulevard to Fallon Road, where it detours to I-580 before connecting to North Canyons Parkway. With the extension of Dublin Boulevard, this route is likely to use the extension and directly serve the non-residential portions of the project which have access via Dublin Boulevard.

The area is also served by Bay Area Rapid Transit (BART), with the nearest station being Dublin/Pleasanton which is located approximately four miles west of the site. Table M provides details about the bus service that serves the project area.

Table M: Existing Transit Facilities

Route	Route Type	Major Destinations	Day	Times	Frequency
2	Fixed Route	E. Dublin/Pleasanton BART, Dublin Ranch, Emerald Glen Park, Fallon Middle School	Weekdays	One AM and one PM trip to serve Fallon Middle School (effective August 2021)	2 per day
30R	Rapid Route	Lawrence Livermore National Laboratory, East Ave., Livermore Transit Center, Portola Park and Ride, Las Positas College, N. Canyons, Dublin Blvd, E. Dublin BART, Dublin Civic Center, W. Dublin BART	Weekdays	5:00 AM to 11:00 PM	Every 30 minutes
			Weekends	5:00 AM to 11:00 PM	Hourly
501 (A, B, and C)	School Route	Positano, Fallon Road, Silvera Ranch, Tassajara Road, Central Parkway, Dublin HS	Weekdays	One AM and one PM trip for each route	2 per day

Source: wheelsbus.com

Bicycle and Pedestrian Facilities

Existing bicycle facilities in the vicinity of the project site include:

- Fallon Road has Class IIA facilities that begin north of Dublin Boulevard
- Dublin Boulevard generally has Class IIA/Class IIB facilities west of Fallon Road.
- Central Parkway generally has Class IIA facilities east and west of Fallon Road. However, there is a Class III facility on Central Parkway eastbound between Fallon Road and Sunset View Drive. Central Parkway east of Fallon Road and between Fallon Road and Croak Road also has Class IB sidepaths.
- Stoneridge Drive/Jack London Boulevard has Class II facilities east and west of El Charro Road.
- Airway Boulevard has Class II bicycle facilities south of the I-580 interchange but there are no facilities between I-580 and N. Canyons Parkway.
- N. Canyons Parkway has Class II facilities east of Airway Boulevard

Proposed improvements to the bicycle network in the vicinity of the project site primarily include:

- Class I shared use-pathways on the Dublin Boulevard Extension and Croak Road.

- Class II bicycle lanes on Dublin Boulevard Extension, Croak Road, and Fallon Road between Dublin Boulevard and the I-580 eastbound ramp terminal intersection.
- Class III facilities are proposed along Croak Road, which is on the north side of I-580 east of Fallon Road.

Sidewalks are generally provided along both sides of the road in the vicinity of the project except at the following locations:

- Fallon Road has discontinuous sidewalks on one side of the road or another between Stoneridge Drive/Jack London Boulevard and Fallon Gateway. North of Fallon Gateway, sidewalks are only provided on the west side of the road until Central Parkway.
- Airway Boulevard does not contain sidewalks along the west side of the road. Similarly, no sidewalk exists along the south side of North Canyons Parkway between Doolan Road and Airway Boulevard.

Sidewalks are also proposed on both sides of the Dublin Boulevard Extension and Croak Road reconstruction when they are built out.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potentially significant impacts related to increased traffic associated with implementation of the EDSP, including impacts to freeway, intersection, and roadway operations, transit service extensions, and potential safety hazards for pedestrians and bicycles at street crossings. Mitigation measures were identified to reduce most transportation impacts to a less than significant level. These mitigation measures require construction of new roadways, widening of existing roadways, and improvements to local freeway facilities to accommodate increased vehicle traffic associated with proposed development in Eastern Dublin.

Several traffic impacts were determined to be significant and unavoidable, even with implementation of mitigation. These impacts include impacts to I-580 between Tassajara Road and Airway Boulevard (Impact 3.3/B), cumulative freeway impacts (Impact 3.3E), impacts to the Santa Rita Road/I-580 eastbound ramps (Impact 3.3/I) and cumulative impacts to Tassajara Road (Impact 3.3/N). Applicable mitigation measures from the Eastern Dublin EIR include:

> **MM 3.3/2.0 (Policy 5-21).** Require all non-residential projects with 50 or more employees within the Eastern Dublin General Plan Amendment and Specific Plan area to participate in a Transportation Systems Management (TSM) program. A TSM program would include strategies to reduce the use of single-occupant vehicles such as on-site distribution of transit information and passes, provision of shuttle services to and from BART stations, participation in regional ridesharing services, preferential parking for vanpools and carpools, and flexible or staggered work hours.

MM 3.3/2.1 The Project shall contribute a proportionate amount to regional transportation mitigation programs as determined by the current study by the Tri-Valley Transportation Council. Regional mitigation measures may include implementation of enhanced rail and feeder bus transit services, construction or upgrading of alternative road corridors to relieve demand on the I-580 and l-680 freeways.

MM 3.3/3.0 The Project shall contribute to the construction of auxiliary lanes on l-580 between Tassajara Road and Airway Boulevard. The auxiliary lanes would provide LOSE operations between Tassajara Road and Fallon Road, and LOS D operations between Fallon Road and Airway Boulevard.

MM 3.3/4.0 The Project should contribute a proportionate share to planned improvements at the l-580 /I-680 interchange and the associated mitigation on adjacent local streets. The improvements would provide additional capacity on I-680 north of I-580 and would provide LOS D operations.

MM 3.3/5.0 Local jurisdictions shall require that future developments participate in regional transportation mitigation programs as determined by the current study by the Tri-Valley Transportation Council.

MM 3.3/6.0 The City of Dublin shall coordinate construction of additional lanes on all approaches at the intersection. The required lanes on the northbound approach on Dougherty Road include two left-turn lanes, three through lanes (one more than existing) and one right-turn lane (one more than existing). The required lanes on the southbound approach on Dougherty Road include two left-turn lanes (one more than existing), three through lanes (one more than existing) and one right-turn lane. The required lanes on the eastbound approach on Dublin Boulevard include one left-turn lane, three through-lanes (one more than existing) and one right-turn lane. The required lanes on the westbound approach on Dublin Boulevard include two left-turn lanes, three through-lanes and one right-turn lane. The Project shall contribute a proportionate share of the improvement costs. The improvements would provide LOS D operations.

MM 3.3/7.0 The City of Dublin shall coordinate with the City of Pleasanton and Caltrans to restripe the I-580 eastbound off-ramp to provide two left-turn lanes and one right-turn lanes (existing lanes are one left-turn lane and two right-turn lanes). The Project shall contribute a proportionate share of the improvement costs. The improvements would provide LOS C operations.

MM 3.3/8.0 The City of Dublin shall coordinate with Caltrans to widen the l-580 westbound off-ramp to provide two left-turn lanes and two right-turn lanes, and to modify the northbound approach to provide three through lanes. The Project shall contribute a proportionate share of the improvement costs. The improvements would provide LOS B operations.

MM 3.3/9.0 The City of Dublin shall coordinate with the City of Pleasanton and Caltrans to widen the I-580 eastbound off-ramp to provide two left-turn lanes and two right-turn lanes. These improvements would provide LOS E operations. Further improvement to the level of service could be provided by prohibiting left turns from southbound Santa Rita Road to eastbound Pimlico Drive during peak periods. This left-turn prohibition would require out-of-direction travel for drivers wishing to access Pimlico Drive but would provide level of service D operations. The Project shall be required to contribute a proportionate share of the improvement costs.

MM 3.3/ 10.0 The City of Dublin shall coordinate with the City of Livermore to modify the intersection to provide three through-lanes and a right-turn lane eastbound, and two left-turn lanes and two through-lanes westbound. The Project shall contribute proportionate share of the improvement costs. The improvements would provide LOS operations.

MM 3.3/ 11.0 The City of Dublin shall coordinate with the City of Livermore and Caltrans to widen the Airway Boulevard overcrossing of I-580 by 12 feet to provide adequate storage for northbound left-turns and widen of the off-ramp to provide one left and one left-right lane. The Project shall contribute a proportionate amount toward the cost of these improvements. The improvements would provide LOS D operations.

MM 3.3/ 12.0 The City of Dublin shall coordinate with Caltrans to ensure that modifications to the I-580 interchange at Fallon Road/El Charro Road include provisions for unimpeded truck movements to and from El Charro Road. The Project shall contribute a proportionate share of improvement costs.

MM 3.3/ 15.2 The Project shall contribute a proportionate amount to the capital and operating costs of transit service extensions.

MM 3.3/ 16.1 Locate pedestrian and bicycle paths so that their crossings of major arterial streets coincide with signalized street intersections, providing a signalized pedestrian and bicycle crossing of the major street.

2002 SEIR

The 2002 SEIR identified potentially significant impacts for several intersections within and outside of the EDPO project area, as well as roadway segments in the project area. Mitigation measures were identified to reduce intersection and roadway impacts to a less-than-significant level. In addition, the 2002 SEIR identified cumulative impacts to the Dougherty Road/Dublin Boulevard intersection, the Hacienda Drive/Dublin Boulevard intersection, and the Fallon Road/Dublin Boulevard intersection. Mitigation Measures SM-Traffic-6, SM-Traffic-7, and SM-Traffic-8 were identified to reduce these cumulative impacts; however, the 2002 SEIR determined that these impacts would remain significant and unavoidable. The following supplemental mitigation measures are applicable to the project:

SM-TRAFFIC-1: Project developers shall contribute a pro-rata share to the widening of the I-580 eastbound off-ramp approach at Hacienda Drive to add a third eastbound left turn lane.

SM-TRAFFIC-2: Project developers shall contribute a pro-rata share to the widening of the northbound Hacienda Drive overcrossing from 3 lanes to 4 lanes including three through lanes and one auxiliary lane that leads exclusively to the I-580 westbound loop on-ramp. The westbound loop on-ramp shall be modified as necessary to meet Caltrans' standards and design criteria. Project developers also shall contribute to widening the westbound off ramp approach to add a third westbound left-turn lane.

SM- TRAFFIC-3: Project developers shall contribute a pro-rata share to construction which converts the eastbound Santa Rita off-ramp through lane to a shared left turn/through lane. Project developers also shall contribute to a traffic signal upgrade which includes a westbound right-turn overlap from Pimlico Drive.

SM-TRAFFIC-4: The Project developers shall install a traffic signal at the Dublin Boulevard/Street D intersection at the time development occurs in this area utilizing this intersection.

SM-TRAFFIC-5: The Project developers shall install a traffic signal at the Fallon Road/Project Road intersection at the time development occurs in this area utilizing this intersection.

SM-TRAFFIC-6: Project developers shall contribute a pro-rata share to configure the eastbound Dublin Boulevard approach to include 1 left-turn lane, three through lane and two right turn lanes. Project developers shall contribute a pro-rata share to configure the west bound Dublin Boulevard approach to include three left-turn lanes, two through lanes, and one shared through/right-turn lane. Project developers shall contribute a pro-rata share to configure the northbound Dougherty Road approach to include three left-turn lanes, three through lanes and two right-turn lanes. Project developers shall contribute a pro-rata share to configure the southbound Dougherty Road approach to include two left turn lanes, three through lanes, and one shared through/right-turn lane. The I-580 westbound diagonal on-ramp from Dougherty Road shall be widened as necessary to include two single-occupancy vehicle lanes. In addition, the City will monitor the intersection for peak hour volumes on a periodic basis, as described below, and will apply appropriate Project conditions based on the results of such monitoring.

SM-TRAFFIC-7: The Project developers shall construct an additional through lane on northbound Fallon Road (for a total of four through lanes), construct an additional left-turn lane on westbound Dublin Boulevard (for a total of three left-turn lanes) and construct an additional through lane on southbound Fallon Road (for a total of four through lanes). In addition, the City will monitor the intersection for peak hour volumes on a periodic basis, as described below, and will apply appropriate Project conditions based on the results of such monitoring.

SM-TRAFFIC-8: In addition to the above additional lane configurations (in Supplemental Mitigation Traffic 7), the Project developers shall pay studies to assess the feasibility of locating the Fallon Road/Dublin Boulevard intersection farther north to allow for a signalized Project intersection between the I-580 westbound ramps/Fallon Road intersection and the Fallon Road/Dublin Boulevard intersection (the "auxiliary intersection"). This new Project auxiliary intersection should consist of seven northbound Fallon Road lanes (2 left, 4 through, 1 right), seven southbound Fallon Road lanes (2 left turn, 4 through, 1 right turn), and 4 lanes for the new Project street; in the westbound direction three left turn lanes and a shared through/right turn lane; and in the eastbound direction, two right-turn lanes, one through and two left turn lanes. If the studies show that a new Project auxiliary intersection in such location is feasible, the Project developers shall construct such intersection.

SM- TRAFFIC-9: The Project developers shall be responsible for widening Fallon Road between I-580 and Dublin Road to its ultimate eight lanes and shall be responsible for widening Fallon Road between Dublin Boulevard and Central Parkway to its ultimate six lane width. The Project developers shall be responsible for widening Fallon Road between Central Parkway and Project Road to four lanes. The Project developers also shall be responsible for widening the Fallon Road overcrossing (between the eastbound and westbound I-580 ramps) from four lanes to six lanes.

SM-TRAFFIC-10: The Project developers shall be responsible for widening Central Parkway between Tassajara Road and Fallon Road from two lanes to four lanes.

Fallon Village SEIR

The Fallon Village SEIR determined that buildout of the Fallon Village Project area would result in potential impacts to local roadways, impacts to nearby freeways and impacts to transit services. Supplemental impacts were identified for the Dublin Boulevard/Dougherty Road intersection, the Santa Rita Road/I-580 EB Ramps intersection, the westbound left turn movement from Central Parkway onto southbound Hacienda Drive. Supplemental Mitigation Measures SM-TRA-1, SM-TRA-2, and SM-TRA-3 were identified to reduce intersection impacts associated with the Fallon Village Project; however, the Fallon Village SEIR determined that even with mitigation, the impact to the Dublin Boulevard/Dougherty Road intersection would remain significant and unavoidable.

The Fallon Village SEIR identified cumulative impacts to freeway segments on I-580 and I-680 in the project area and determined that even with implementation of mitigation measures identified in the Eastern Dublin EIR and other improvements proposed by the City of Dublin, impacts to nearby freeways would remain significant and unavoidable. In addition, the Fallon Village SEIR determined that traffic generated by the proposed project on I-580 and I-680 would exceed the Alameda County Congestion Management Agency monitoring standards for volumes along these freeways; this impact would also remain significant and unavoidable. The following supplemental mitigation measures are applicable to the proposed project:

SM-TRA-1 (Project contribution to impact to Dublin/Dougherty intersection). Project developers shall have the following obligations:

a) Advance to the City applicable monies for acquisition of right-of-way and construction of the planned improvements at Dougherty Road/Dublin Boulevard. The amount of money advanced to the City shall be based on the developer's fair share of the deficit (spread over those projects which are required to make up the deficit) between funds available to the City from Category 2 Eastern Dublin Traffic Impact Fee funds and the estimated cost of acquiring the right-of-way and constructing the improvements. The City should provide credit for Category 2 Eastern Dublin Traffic Impact Fees to the developer for any advance of monies made for the improvements planned for the Dougherty Road/Dublin Boulevard intersection.

b) Pay a pro-rata share of the cost to construct the planned improvements at Dougherty Road/Dublin Boulevard through payment of the Eastern Dublin Traffic Impact Fee. The City of Dublin will implement these improvements.

SM-TRA-2 (Project contribution to impact to Santa Rita Road/I-580 eastbound ramps). Project developers shall contribute a pro-rata share of the cost to widen the I-580 eastbound off-ramp approach at Santa Rita Road to include a third eastbound left turn lane.

SM-TRA-3 (Project contribution to impact at Central Parkway and Hacienda Drive). Project developers shall contribute a pro-rata share of the cost to modify the westbound approach on Central Parkway at Hacienda Drive to include two left turn lanes, one through and one right turn lane.

Project Impacts and Mitigation Measures

(a) Conflict with applicable transportation plans standards, including bicycle and pedestrian facilities

Potential conflicts with applicable transportation plans standards, including bicycle and pedestrian facilities, associated with the proposed project are described below.

Trip GenerationThe information provided below is summarized from the Dublin Fallon 580 Trip Generation Comparison Technical Memorandum provided in Appendix I.

The Institute of Transportation Engineers (ITE) *Trip Generation Manual* 11th Edition was used to estimate the number of trips the proposed project would generate. The proposed project including 238 multifamily dwelling units, 2,888,400 square feet of advanced manufacturing, a 314-room hotel, 100,000 square feet of retail and 100,000 square feet of office (based on a 0.60 FAR) would generate approximately 22,618 trips per day, as shown in Table N.

Table N: Estimated Trip Generation for 580 Fallon based on 2022 Proposed Project

Description	Size	Units	ITE	Daily Trip Generation	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Multi-Family	238	du	220	1,604	23	73	96	77	45	122
Advanced Manufacturing	2,888.4	ksf	140	13,720	1,493	472	1,965	663	1,745	2,138
Hotel	314	Rooms	310	2,509	81	64	145	95	91	186
Retail	100	ksf	820	3,701	52	32	84	163	177	340
Office	100	ksf	710	1,084	134	18	152	24	120	144
			Total	**22,618**	**1,783**	**659**	**2,442**	**1,022**	**1,908**	**2,930**

Source: Kittelson & Associates, Inc. 2023
DU = Dwelling Unit
KSF = Thousand Square Feet

The traffic study for the Fallon Village SEIR used the ITE *Trip Generation Manual* 7th Edition to estimate trip generation for Fallon Village. The four land use categories used and the associated daily trip generation rate from the ITE Trip Generation Manual 7th Edition include:

- Single Family Residential (ITE Code 210 with a daily rate of 9.44 trips per dwelling unit)
- Multifamily Residential (ITE Code 220 with a daily rate of 7.32 trips per dwelling unit)
- Service (ITE Code 710 with a daily rate of 10.84 trips per thousand square feet)
- Retail (ITE Code 820 with a daily rate of 42.94 trips per thousand square feet)

Based on these land uses, the estimated daily trip generation for 580 Fallon in the Fallon Village SEIR was 45,550 daily vehicle trips, as shown in Table O.

Table O: Estimated Trip Generation for 580 Fallon Based on Fallon Village SEIR

Description	Size	Units	ITE	Daily Trip Generation	AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
Single-Family	70	du	210	670	13	40	53	45	26	71
Multi-Family	130	du	220	874	13	54	67	53	28	81
Retail	876.621	ksf	820	37,771	553	354	907	1,584	1,715	3,299
Service	566.379	ksf	710	6,236	773	105	878	143	701	844
			Total	**45,550**	**1,352**	**553**	**1,905**	**1,825**	**2,470**	**4,295**

Source: Kittelson & Associates, Inc. 2023
[1]Daily Rate from ITE Trip Generation Manual 7th Edition
DU = Dwelling Unit
KSF = Thousand Square Feet

As shown in Tables N and O, the proposed project would generate 22,932 fewer daily vehicle trips compared to the assumptions from the Fallon Village SEIR. Therefore, no new transportation impacts not previously disclosed would be anticipated based on daily trip generation of the for the proposed project.

Transit, Bicycle and Pedestrian Impacts.The proposed project is not anticipated to result in new or substantially more severe significant impacts to transit service, bicyclists and bicycle facilities or pedestrians and pedestrian facilities.

The proposed project is not anticipated to interfere with any plans or policies for transit usage in the area such as the Dublin Boulevard Extension project, which will have bus pull outs, bus pads, and passenger pads along the roadway. Aside from improvements to project frontages, the project would not construct any addition off-site improvements; therefore, the proposed project would not interfere with the construction of transit amenities proposed as part of the Dublin Boulevard Extension or affect plans for transit service in the area.

New bicycle facilities are proposed on the future Dublin Boulevard Extension and Croak Road, which would serve the project site and the proposed project does not include any off-site improvements that would affect the construction of these facilities.

Croak Road and Dublin Boulevard are proposed to be extended to provide access to the project site. These facilities have planned sidewalks on both sides of the road and the proposed project does not include any off-site improvements that would affect installation of these facilities.

Therefore, impacts to bicyclists, pedestrians, and transit service providers resulting from implementation of the proposed project would remain less than significant and the proposed project would not result in new significant or substantially more severe impacts related to alternative forms of transportation.

(b) Conflict with CEQA Section 15064.3 (b)

Since certification of the EDSP EIRs, the issue of vehicle miles traveled (VMT) has become a more prominent issue of concern as evidenced by passage of SB 743 in 2013. Previously, CEQA analysis was conducted using a level of service (LOS) measurement that evaluated traffic delay. As specified under SB 743 and implemented under Section 15064.3 of the State CEQA Guidelines (effective December 28, 2018), VMT is the required metric to be used for identifying CEQA impacts and mitigation. In December 2018, the Office of Planning and Research (OPR) published a Technical Advisory on Evaluating Transportation Impacts, including guidance for VMT analysis. The Office of Administrative Law approved the updated CEQA Guidelines and lead agencies were given until July 1, 2020, to implement the updated guidelines for VMT analysis.

The topic of the project’s contribution to vehicle miles traveled (VMT) was not analyzed in the EDSP EIRs. Because EDSP EIRs have been certified, the determination of whether VMT needs to be analyzed for this project is governed by the law on supplemental or subsequent EIRs (Public Resources Code Section 21166 and CEQA Guidelines, Sections 15162 and 15163). VMT is not required to be analyzed unless it constitutes new information of substantial importance that was not known and could not have been known at the time the previous environmental documents were certified as complete (Public Resources Code Section 21166 and CEQA Guidelines Section 15162 and 15163). VMT was known at the time of the certification of the EDSP EIRs and could have been analyzed. A change in regulations for impact analysis under CEQA is not a trigger for further environmental review under supplemental review standards. The impact of increased traffic was analyzed using other methods (LOS) at the time of certification of the EDSP EIRs. Under CEQA standards, it is not considered new information that requires analysis in a Supplemental EIR or negative declaration. Therefore, no supplemental environmental analysis of the project's impacts on this issue is required under CEQA.

(c) Substantially increase hazards due to a design feature

Primary access into the residential neighborhoods would be via Pandora Way within the Jordan Ranch development and an east/west private street off of Croak Road. Primary access to the GC/CO parcels would be provided by the proposed Dublin Boulevard Extension. Croak Road north of Dublin Boulevard would be widened and provide additional access to the GC/CO parcels. Vehicular and pedestrian circulation between the residential and commercial uses would be provided via Central Parkway, Croak Road and Dublin Boulevard. The design, construction, and maintenance of project site access locations, as well, as internal roadways within the project site would be required to be in compliance with the City's Municipal Code. Therefore, the proposed project would not substantially increase hazards due to a design feature. With adherence to applicable regulatory requirements, no new impacts or substantially more severe significant impacts related to design hazards, beyond what has been analyzed in the EDSP EIRs would occur.

(d) Result in inadequate emergency access

The proposed project would not result in inadequate emergency access. Emergency vehicle access to the residential component of the proposed project would be provided via an EVA connection into the existing Jordan Ranch development at the west and east ends of Pandora Way, respectively, and via an east/west private street off of Croak Road. The commercial components of the proposed project would be accessed via the proposed Dublin Boulevard Extension project that will connect Dublin Boulevard from Fallon Road to North Canyons Parkway in Livermore. The design, construction, and maintenance of project site access locations would be in compliance with the City's Municipal Code and would be required to meet all emergency access standards. In addition, through Site Development Review, emergency services would review proposed plans to ensure that emergency vehicle access and circulation is adequate. With adherence to applicable regulatory requirements, no new impacts or substantially more severe significant impacts to emergency access would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified transportation impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to transportation beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Kittelson & Associates. 2023. Dublin Fallon 580 Trip Generation Comparison Technical Memorandum. December 19.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Tribal Cultural Resources

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
17. TRIBAL CULTURAL RESOURCES. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:			
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), or			X
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 (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.			X

Environmental Setting

As described in Section 5, Cultural Resources, one prehistoric resource was recorded on the project site in 1988 as the site area was used as a pasture and corral area. However, during a 2009 backhoe trenching program and study, materials observed from the 1988 study were no longer present at the site area. The 2009 study concluded that the site contained no significant subsurface cultural deposits. No other resources are recorded within the project boundaries or within 0.25-mile of the project site.

Previous CEQA Documents

Since certification of the EDSP EIRs, the topic of Tribal Cultural Resources has been added as a new category in the CEQA checklist. However, the Eastern Dublin EIR, 2002 SEIR and Fallon Village SEIR, analyzed prehistoric and historic resources and included mitigation measures related to historical and archaeological resources. These measures are listed in Section 5. Cultural Resources of this Initial Study Checklist.

Because the Eastern Dublin EIR, 2002 SEIR, and Fallon Village SEIR have been certified, the determination of whether tribal cultural resources need to be analyzed for this proposed project is governed by the law on supplemental or subsequent EIRs (Public Resources Code Section 21166 and CEQA Guidelines, Sections 15162 and 15163). Tribal cultural resources are not required to be analyzed under those standards unless it constitutes "new information of substantial importance, which was not known and could not have been known at the time the previous EIR was certified as complete" (CEQA Guidelines Section 15162(a)(3)).

The topic of the project's potential impacts to tribal cultural resources was not specifically analyzed in the EDSP EIRs; however, the issue of tribal cultural resources was widely known prior to the certification of these EIRs. Section 106 of the National Preservation Act, established in 1966, requires tribal consultation in all steps of the process when a federal agency project or effort may affect historic properties that are either located on tribal lands, or when any Native American tribe or Native Hawaiian organization attaches religious or cultural significance to the historic property, regardless of the property's location. Further, tribal cultural resources have been considered in the evaluation of impact to historical and archaeological resources since CEQA was enacted.

Project Impacts and Mitigation Measures

(a) Listed or eligible for listing in the California Register of Historical Resources

The project site is currently undeveloped; therefore, no built historic resources are located on the project site. No archaeological resources were identified on the project site as part of the cultural resources study. Development proposed as part of the current project would be consistent with the development previously analyzed in the EDSP EIRs. As described in Section 5, Cultural Resources, implementation of Mitigation Measure 3.9/5.0 as identified in the Eastern Dublin EIR would reduce any potential impacts to archaeological and/or Native American resources to a less-than-significant level. Therefore, no new impacts or substantially more severe significant impacts related to tribal cultural resources would occur.

(b) Significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1

No archaeological resources were identified on the project site as part of the cultural resources study. Therefore, the City, in its role as lead agency, has determined that the project site is not a resource significant to a California Native American tribe. Development proposed as part of the current project would be consistent with the development previously analyzed in the EDSP EIRs. As described in Section 5, Cultural Resources, implementation of Mitigation Measure 3.9/5.0 as identified in the Eastern Dublin EIR would reduce any potential impacts to archaeological and/or Native American resources to a less-than-significant level. Therefore, no new impacts or substantially more severe significant impacts related to tribal cultural resources would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified tribal cultural, nor result in new significant impacts. No places, objects, or the like with cultural value to a California Native American Tribe have been previously identified and such artifacts are unlikely to be present.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to tribal cultural resources beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Peak & Associates, Inc. 2022. Cultural Resource Assessment for the Chen Anderson Project, City of Dublin, Alameda County, California. May 27.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Utilities and Service Systems

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
18. UTILITIES AND SERVICE SYSTEMS. Would the project:			
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities the construction or relocation of which could cause significant environmental effects?			X
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X
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?			X
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?			X
e) Comply with federal, state, and local statutes and regulations related to solid waste?			X

Environmental Setting

Existing and proposed utility connections are discussed below.

Water

The Dublin San Ramon Services District (DSRSD) provides water service at the project site. DSRSD is responsible for providing both potable and recycled water to the City of Dublin, and the Dougherty Valley area of the City of San Ramon in Contra Costa County. DSRSD's water service area also includes Camp Parks, the Federal Correctional Institution (FCI), and Alameda County's Santa Rita Jail. Zone 7 supplies treated potable water to DSRSD. Treated potable water enters DSRSD's distribution system from five metered turnouts from the Zone 7 transmission system.

To reduce the demand for potable water, DSRSD promotes water recycling and is a member of the Water Reuse Association. In 1995, DSRSD and East Bay Municipal Utility District (EBMUD), through a joint powers agreement, formed the DSRSD-EBMUD Recycled Water Authority (DERWA). DERWA serves as a wholesaler to deliver recycled water to DSRSD and EBMUD, who in turn deliver the recycled water to their respective service areas. DERWA's San Ramon Valley Recycled Water Project (SRVRWP) provides a backbone distribution system that delivers recycled water to both DSRSD and EBMUD distribution systems. DSRSD's recycled water treatment facilities deliver recycled water to the SRVRWP. Recycled water is produced at DSRSD's wastewater treatment plant at the Recycled Water Treatment Facility (RWTF). The RWTF produces recycled water that meets the California Title 22 requirements for unrestricted reuse.

Wastewater

Wastewater collection and treatment services are also provided by DSRSD for the City of Dublin, City of Pleasanton, Camp Parks, FCI, Santa Rita Jail, and the southern portion of San Ramon. DSRSD owns and operates a wastewater treatment plant in Pleasanton that has a capacity of 17 million gallons per day (MGD). The existing wastewater service area encompasses approximately 13,340 acres, or 20.85 square miles. Within the wastewater service area there are currently 207 miles of gravity mains, one permanent lift station, and one temporary lift station. The permanent lift station has 26 feet of force main.

Stormwater

Drainage and flood control in the Eastern Dublin area is the responsibility of the City of Dublin and Zone 7. Zone 7 is responsible for master planning, overseeing construction coordination and maintaining major storm drain channels and culverts in Eastern Dublin. The City has jurisdiction and maintenance responsibility for local storm drains that discharge to the Zone 7 flood control system. In its current undeveloped condition, runoff from the project area drains mostly via overland flow, which eventually collects just north and east of the Fallon Road/I-580 Interchange where it then flows, via a double box culvert west under Fallon Road.

Electricity

East Bay Community Energy provides electricity to Dublin over PG&E's distribution system. PG&E provides natural gas service to the San Francisco Bay region and serves the project site.

Solid Waste

The City of Dublin has a Collection Services Agreement with a private solid waste collection company for residential and commercial garbage collection. The City also has comprehensive recycling and organics collection programs. All single-family residences are provided with three stream collection containers (landfill, recycle, organics) and most commercial and multi-family residences subscribe to three-stream collection service. Beginning January 1, 2022, all service accounts (with a few exceptions) are now required to subscribe to three-stream collection services due to State legislation (SB 1383).

Solid waste generated within the City is deposited at the Altamont Landfill which has a total estimated permitted capacity of 62 million cubic yards. The Altamont Landfill is approximately 26 percent full and is estimated to reach capacity in January 2029.

Previous CEQA Documents

Eastern Dublin EIR

The Eastern Dublin EIR identified potential significant impacts related to lack of a wastewater collection system, extension of a sewer trunk line with capacity to serve new developments, limited treatment plant capacity and wastewater disposal capacity, increased energy use for wastewater treatment and wastewater disposal, potential failure of the export disposal system, pump station noise and odors, storage basin odors and potential failure, recycled water system operations, recycled water storage failure, loss of recycled water system pressure, and secondary impacts from recycled water system operation. Mitigation measures were identified to reduce most wastewater impacts to a less than significant level. Impacts associated with increased energy use for wastewater treatment and disposal were determined to be significant and unavoidable, even with implementation of mitigation. The following mitigation measures would apply to the proposed project:

> **MM 3.5/1.0 (Program 9P). Connection to Public Sewers.** Require that all development in the Specific Plan area be connected to public sewers. Exceptions to this requirement, in particular septic tank systems, will only be allowed upon receipt of written approval from the Alameda County Environmental Health Department and DSRSD.
>
> **MM 3.5/4.0 (Program 9M). DSRSD Service.** Require a "will-serve" letter from DSRSD prior to permit approval for grading.
>
> **MM 3.5/5.0 (Program 9N). DSRSD Standards.** Require that design and construction of all wastewater systems be in accordance with DSRSD standards.

The Eastern Dublin EIR also identified potential significant impacts related to overdraft of local groundwater resources, increased demand for water, additional treatment plant capacity, lack of a water distribution system, inducement of substantial growth, increase in energy usage through operation of the water distribution system, potential water storage reservoir failure, potential loss of system pressure, and potential pump station noise. Mitigation measures were identified to reduce most water impacts to a less than significant level. Impacts associated with increased energy use for water distribution and population growth were determined to be significant and unavoidable, even with implementation of mitigation. The following mitigation measures would apply to the proposed project:

> **MM 3.5/25.0** Encourage all developments in the Specific Plan and Project to connect to the DSRSD water system.
>
> **MM3.5/26.0 (Program 9A). Water Conservation.** Require the following as conditions of project approval in eastern Dublin:
>
> - Use of water-conserving devices such as low-flow shower heads, faucets, and toilets.

- Support implementation of the DSRSD Water Use Reduction Plan where appropriate.
- Water efficient irrigation systems within public rights-of-way, median islands, public parks, recreation areas and golf course areas (see Program 9B on Water Recycling).
- Drought resistant plant palettes within public rights-of-way, median islands, public parks, recreation areas and golf course areas.

MM3.5/27.0 (Program 9B). Water Recycling. Require the following as conditions of project approval in eastern Dublin:

- Implementation of DSRSD and Zone 7 findings and recommendations on uses of recycled water to augment existing water supplies.
- Work with DSRSD to explore use of recycled water in eastern Dublin through potential construction of a recycled water distribution system. Construction of such a recycled water system will require approval of the use of recycled water for landscape irrigation by DSRSD, Zone 7 and the San Francisco Bay Regional Water Quality Control Board.

MM 3.5/37.0 (Program 9E). DSRSD Standards. Require that design and construction of all water system facility improvements be in accordance with DSRSD standards.

MM 3.5/38.0 (Program 9G). DSRSD Service. Require a "will-serve" letter from DSRSD prior to grading permit approval.

Potentially significant impacts related to storm drainage identified in the Eastern Dublin EIR are described in Section 9, Hydrology and Water Quality.

2002 SEIR

The 2002 SEIR did not identify any potentially significant supplemental impacts associated with water supply, wastewater treatment, stormwater drainage, or other utilities/service systems. The 2002 SEIR found that the mitigation measures in place from the Eastern Dublin EIR were adequate and that no new mitigation measures were necessary.

Fallon Village SEIR

The Fallon Village SIER identified no additional impacts related to water supply, wastewater collection, wastewater treatment capacity, wastewater disposal systems. Two impacts were identified relative to stormwater drainage, including the potential for stormwater runoff to add potential pollutants to nearby water bodies and would fail to comply with current hydromodification standards and surface water quality standards. The following supplemental mitigation measures were identified to reduce these impacts to a less than significant level:

SM- SD-1 (changed surface water quality standards). The Stage 1 Development Plan shall require that the water quality source control and hydrologic design recommendations of the report prepared by ENGEO, Inc. (February 28, 2005) be implemented for all individual development projects within the Project area.

SM- SD-2 (changed surface water quality hydromodification standards). Development within the Project area shall comply with the hydromodification provisions of the Alameda County Clean Water Program as approved by the RWQCB and administered by the City of Dublin. If no Alameda County Clean Water Program permit has been adopted at the time individual development proposals are approved by the City the applicant may be required to submit hydrology and hydrologic analyses to identify specific increases in storm water runoff into downstream receiving waters. Such reports will be reviewed by both the City of Dublin and Zone 7 Water Agency. Development projects will also be required to pay the then-current Zone 7 Special Drainage Area fee (SDA7-1) in effect at the time of development.

Project Impacts and Mitigation Measures

(a) Require relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas or telecommunications facilities

The proposed project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunication facilities beyond that which was already anticipated in the EDSP EIRs.

As outlined in the Project Description, new sanitary sewer lines and water lines would be installed within the project site and would connect to proposed sanitary sewer mains and potable water mains within the future Dublin Boulevard Extension and existing lines along Croak Road and Pandora Way. The proposed project would also include connections to proposed electricity and natural gas lines within the future Dublin Boulevard Extension and existing lines along Croak Road and Pandora Way.

The project site is currently vacant and covered in non-native grassland and, therefore, contains minimal impervious surfaces. Development of the proposed project would increase the extent of impervious surfaces on the project site. As required by Provision C.3 of the MRP, the proposed project would include stormwater quality basins and storm drains throughout the project site to retain stormwater runoff prior to discharge. Hydromodification vaults would be included on-site to provide flow duration controls for the project. Proposed storm drainage facilities would conform to the Alameda County C.3 Stormwater Technical guidelines and requirements.

On-site utility infrastructure necessary to serve the proposed project—including water, sanitary sewer, drainage, water quality treatment, and dry utilities (e.g., electricity, natural gas, cable)—would be installed within the project site and would connect to the proposed utility lines within adjacent roadways, which have already been planned and addressed in the EDSP EIRs. No new or expanded utility lines or facilities are required off-site, except as needed for the utility connections. Therefore, no new impacts or substantially more severe significant impacts related to the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas or telecommunications facilities would occur.

(b) Sufficient water supply

The Fallon Village SEIR determined that the Fallon Village Project was accounted for in the DSRSD's Final Water Service Analysis for Eastern Dublin as well as the 2005 Urban Water Management Plan (UWMP) and, therefore, there would be sufficient water supply with existing entitlements. Since the adoption of the Fallon Village SEIR, DSRSD has updated the UWMP (in 2020), which accounts for build out of the Eastern Dublin Area, including the project site. The 2020 UWMP determined that there would be adequate water supplies to meet demand through 2040 with existing entitlements. Additionally, consistent with the DSRSD District Code, the project applicant would be required obtain a certificate of capacity rights from DSRSD, prior to issuance of a building permit. The certificate of capacity rights, which is part of the entitlement review process, ensures DSRSD can adequately serve the proposed project.

Currently, DSRSD's primary water supply source is purchased potable water from Zone 7, augmented by recycled water produced at DSRSD's RWTF. DSRSD also has a groundwater pumping quota (GPQ) from the local groundwater basin, pumped on its behalf by Zone 7, the local groundwater basin manager. Imported water from the State Water Project, which is owned and operated by the Department of Water Resources, is by far Zone 7's largest water source, providing approximately 90 percent of the treated water supplied to its customers on an annual average basis. The proposed project would be served by these systems. DSRSD anticipates the same water supply mix to be available through 2040. With the projects and programs implemented by DSRSD and Zone 7, water supplies are projected to meet demands.

The proposed project would be consistent with the type and intensity of development assumed for the project site in the City's General Plan, including the EDSP and accounted for in the UWMP. As stated in the UWMP, DSRSD can meet its water demand under multiple dry years with diversified supply and conservation measures. Therefore, no new impacts or substantially more severe significant impacts related to water supply would occur.

(c) Sufficient wastewater capacity

The Fallon Village SEIR determined that potential development associated with the Fallon Village Project, including the proposed project, would be within the assumptions included in DSRSD's 2005 Wastewater Collection System Master Plan Update. Since the adoption of the Fallon Village SEIR, DSRSD has updated the Wastewater Collection System Master Plan (in 2017), which accounts for build out of the project site based on acreage and type of land use. The proposed project would be consistent with the type and intensity of development assumed for the project site in the City's General Plan and accounted for in DSRSD's Wastewater Collection System Master Plan. Therefore, no new impacts or substantially more severe significant impacts related to the wastewater capacity would occur.

(d-e) Adequate landfill and compliance

Solid waste generated at the project site would be collected by Amador Valley Industries (AVI) and transferred to Altamont Landfill. The 2002 SEIR evaluated the capacity of solid waste service providers and disposal facilities to handle solid waste generated by proposed development in the East Dublin area. The 2002 SEIR determined that the Altamont Landfill had over 25 years of capacity. According to Cal Recycle, Altamont Landfill (01-AA-0009), currently has a maximum permitted capacity of 11,150 tons per day and a remaining capacity of 65,400,000 tons. The landfill continues to have sufficient capacity to accommodate the level of residential and commercial development proposed as part of the project. Disposal of solid waste would be required to comply with all federal state, and local statutes and regulations associated with solid waste. This would include providing receptacles for green waste, recyclables, and garbage. Therefore, no new impacts or substantially more severe significant impacts related to solid waste would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified utilities and service system impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to utilities and service systems beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

CalRecycle, 2019. Facility/Site Summary Details: Altamont Landfill and Resource Recovery (01-AA-0009). Website: www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/7?siteID=7 (accessed November 15, 2023).

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

West Yost. 2016. 2015 Urban Water Management Plan. June. Available online at: www.dsrsd.com/about-us/library/plans-studies (accessed June 12, 2022).

West Yost. 2019. 2017 Wastewater Collection System Master Plan. December. Available online at: www.dsrsd.com/about-us/library/plans-studies (accessed November 15, 2023).

West Yost. 2021. 2020 Urban Water Management Plan. June. Available online at: www.dsrsd.com/about-us/library/plans-studies (accessed November 15, 2023).

Wildfire

ENVIRONMENTAL IMPACTS **Issues**		**New Significant Impact**	**Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs**	**Equal or Less Severe Impact than Identified in the EDSP EIRs**
18.	**WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:**			
a)	Substantially impair an adopted emergency response plan or emergency evacuation plan?			X
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?			X
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?			X
d)	Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?			X

Environmental Setting

As described in Section 8, Hazards and Hazardous Materials, the project site is not identified as an area of moderate, high, or very high fire hazard severity (VHFHS) for the Local Responsibility Area. It is identified as an area of moderate fire hazard severity for the State Responsibility Area, as mapped by the California Department of Forestry and Fire Protection (CAL FIRE).

Previous CEQA Documents

The previous CEQA documents did not specifically analyze impacts for wildfires as it was not a separate topic for analysis when the Eastern Dublin EIR, 2002 SEIR and Fallon Village SEIR were completed. Public services impacts and mitigation measures, some of which relate to the provision of fire services pertain to wildfires, were identified and are discussed in the public services section.

Project Impacts and Mitigation Measures

(a) Impair an emergency response plan

As described above, the project site is not located within a fire hazard severity zone as identified by CAL FIRE. The proposed project would be designed to provide adequate access to the site for fire/police/emergency medical service personnel in the event of an emergency at the project site. Primary access into the residential neighborhoods would be via Pandora Way within the Jordan Ranch development and an east/west private street off of Croak Road. Primary access to the GC/CO parcels would be provided by the proposed Dublin Boulevard Extension. Croak Road north of Dublin Boulevard would be widened and provide additional access to the GC/CO parcels. In the event of an emergency on the site, employees and residents could exit the site via Croak Road, Central Parkway, Fallon Road and the proposed Dublin Boulevard Extension. Employees and residents could access I-580 via Fallon Road to exit the City of Dublin and the region. The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. Therefore, no new impacts or substantially more severe significant impacts related to impairment of an emergency response plan would occur.

(b) Exposure to wildfire

As described in Section 6, Geology and Soils, the topography of the project site consists of nearly level ground along the southern portion of the site adjacent I-580 and Fallon Road, with rolling hills occurring along the northern portion. Hillslopes range 346 feet to 480 feet above sea level. Prevailing winds are typically from the west between February and November and from the north from November to February in the City.

Consistent with City requirements, a Geologic Hazard and Abatement District (GHAD) would be established at Parcel 7. The GHAD would own and maintain improvements and landscape within the wildfire management area, located within the proposed residential lots adjacent to undeveloped open space. These areas would include fire safe plants and materials. Seasonal mowing and trimming maintenance would be performed by the GHAD. GHAD would also maintain the slope area. If GHAD at Parcel 7 is not established, the Homeowners' Association would own and maintain improvements and slope area within the wildfire management area.

At Parcel 8, if the project meets the requirements to be GHAD owned/maintained and the project desires a GHAD to be established, consistent with City requirements, the GHAD would own and maintain improvements and landscape within the wildfire management area, located within the proposed residential lots adjacent to undeveloped open space. These areas would include fire safe plants and materials. Seasonal mowing and trimming maintenance would be performed by the GHAD. GHAD would also maintain the slope area. If a GHAD is not established at Parcel 8, the Homeowners' Association would own and maintain improvements and slope area within the wildfire management area.

Within Parcel 4 and Parcel 6 (Nature Park parcels), the City would maintain improvements and landscape within wildfire management areas. These areas would include fire safe plants and materials. Seasonal mowing and trimming maintenance would be performed by the City. The City would also maintain the slope area within the Nature Park parcels.

The proposed project would not include any design features that would increase the potential for a wildfire. The proposed project would not exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Therefore, no new impacts or substantially more severe significant impacts related to exposure to wildfire would occur.

(c) Require installation or maintenance of infrastructure

As discussed above, the project site is located outside of a VHFHS zone as identified by CAL FIRE. All proposed project components, including infrastructure, would be located within the boundaries of the project site and impacts associated with development of the proposed project within the project site have been analyzed herein. Additionally, through Site Development Review, emergency services would review proposed plans to ensure that emergency vehicle access and circulation is adequate. Therefore, no new impacts or substantially more severe significant impacts related to installation or maintenance of infrastructure would occur.

(d) Exposure to flooding or landslides

The topography of the project site consists of nearly level ground along the southern portion of the site adjacent to I-580 and Fallon Road, with rolling hills occurring along the northern portion. Hillslopes range 346 feet to 480 feet above sea level. As part of the proposed project, the project site would be graded to flatten the site, where necessary, to allow for intended future users. Additionally, perimeter retaining walls would be installed, where needed, to conform with the existing and proposed elevations surrounding the site. Further, as discussed in Section 9, Hydrology and Water Quality, the project would be required to implement erosion control measures during and post-construction. The proposed stormwater quality basins would limit the release of stormwater from the site; therefore, the project site would not expose people to flooding or landslides as a result of runoff, post-fire slope instability or drainage changes. Therefore, no new impacts or substantially more severe significant impacts related to exposure to flooding or landslides would occur.

Conclusion

The project does not propose substantial changes that were not previously analyzed in the EDSP EIRs that would require major changes to the EIRs. Based on the information in the EDSP EIRs and this environmental analysis, the project would not substantially increase the severity of the previously identified wildfire impacts, nor result in new significant impacts.

With adherence to applicable regulatory requirements and mitigation measures identified in the EDSP EIRs, there would be no new or substantially more severe significant impacts to wildfires beyond what has been analyzed in the previous EDSP EIRs, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required.

Source(s)

CAL FIRE. 2020. California Fire Hazard Severity Zone Viewer. Website: egis.fire.ca.gov/FHSZ/ (accessed June 20, 2022).

Dublin, City of. 2022. City of Dublin General Plan, Adopted February 11, 1985 (Amended as of February 15, 2022).

Dublin, City of. 2002. Final Revised Supplemental Environmental Impact Report, State Clearinghouse No. 2001052114, East Dublin Properties Stage 1 Development Plan and Annexation. March.

Haag, Jerry. 2005. Fallon Village Project, Final Supplemental Environmental Impact Report, State Clearinghouse No. 2005062010. November.

Wallace Roberts & Todd. 2016. Eastern Dublin Specific Plan. January 7, 1994 (Updated September 20, 2016).

Wallace Roberts & Todd. 1992. Final Environmental Impact Report, State Clearinghouse Number 91103064. Eastern Dublin General Plan Amendment and Specific Plan. December 7.

Mandatory Findings of Significance

ENVIRONMENTAL IMPACTS Issues	New Significant Impact	Substantial Increase in the Severity of an Impact Identified in the EDSP EIRs	Equal or Less Severe Impact than Identified in the EDSP EIRs
18. MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:			
a) Have the potential to 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, 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?			X
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 the past projects, the effects of other current projects, and the effects of probable future projects.)			X
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X

a) Degrade quality of environment, reduce habitat, cause population to drop below self-sustaining levels, reduce endangered animals or plants, or eliminate important examples of California history or prehistory.

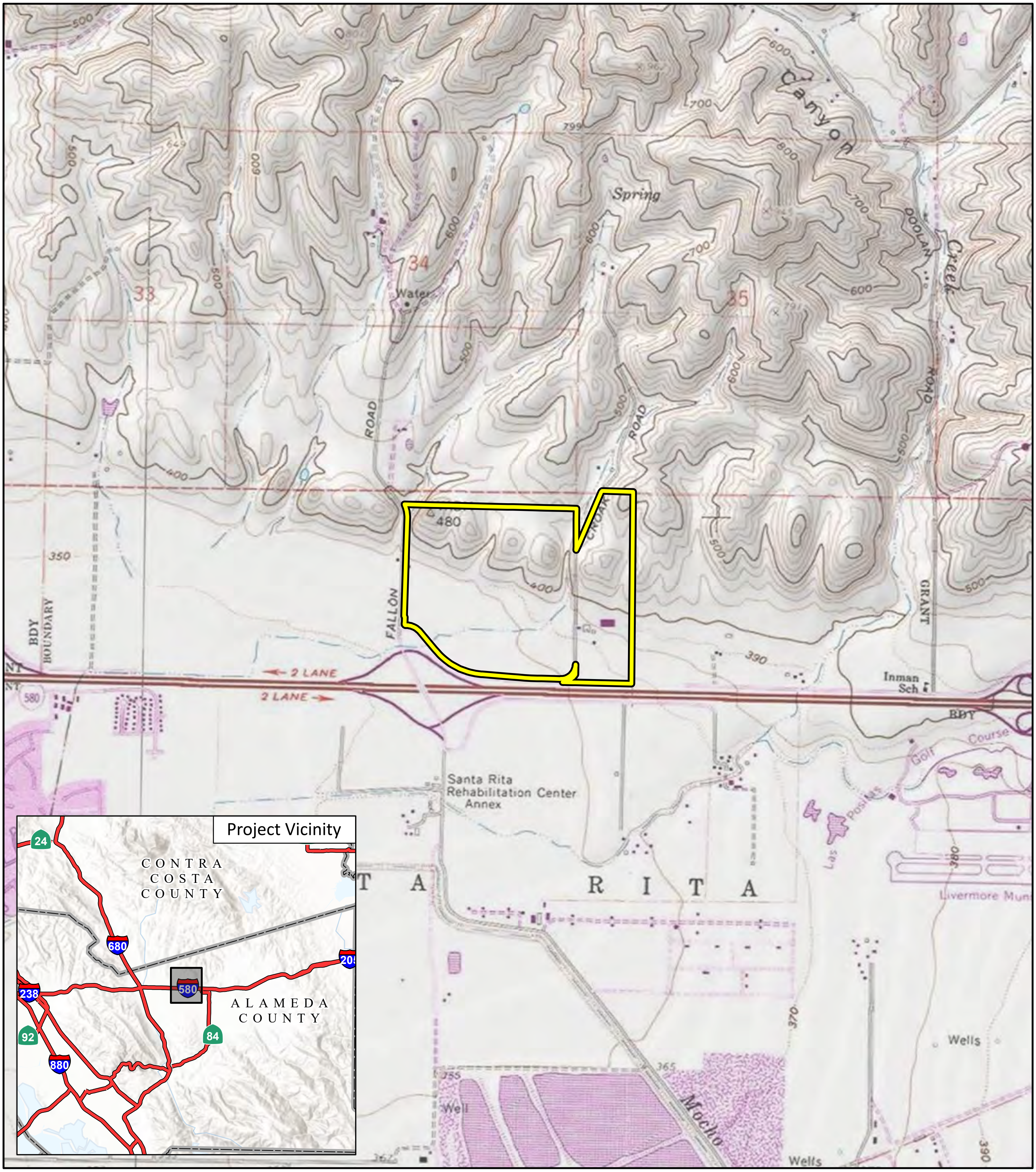
As discussed and analyzed in this document, the proposed project would not degrade the quality of the environment. Additionally, for reasons discussed in the Biological Resources section, the proposed project, with mitigation, would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. Further, for the reasons discussed in Section 5, Cultural Resources, the proposed project, with mitigation, would not eliminate important examples of California history or prehistory. Therefore, implementation of the proposed project with compliance with regulatory requirements and required mitigation measures, would not result in any new impacts, or increase the severity of a previously identified significant impact as previously analyzed, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required for this impact area.

b) Cumulative Impacts

The proposed project has the potential to result in incremental environmental impacts that are part of a series of approvals that were anticipated under the EDSP EIRs. The EDSP EIRs considered the project's cumulatively considerable impacts where effects had the potential to degrade the quality of the environment as a result of build-out of the EDSP. Implementation of the proposed project, with compliance with regulatory requirements and required mitigation measures, would not result in any new cumulative impacts or increase the severity of a previously identified significant cumulative impact as previously analyzed, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required for this impact area.

c) Substantial Adverse Effects on Human Beings

The proposed project would not create adverse environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. The proposed project would allow for residential, general commercial/campus office and park uses. These uses or activities would not result in any substantial adverse effects on human beings, either directly or indirectly, as discussed throughout this document. Therefore, implementation of the proposed project would not result in any new impacts or increase the severity of a previously identified significant impact as previously analyzed, and no other CEQA standards for supplemental review are met. Therefore, no further environmental review is required for this impact area.



LSA

FIGURE 1

0 1000 2000
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Dublin 580 Fallon

Project Location

SOURCE: USGS 7.5' Quad - *Livermore (1980)*, CA

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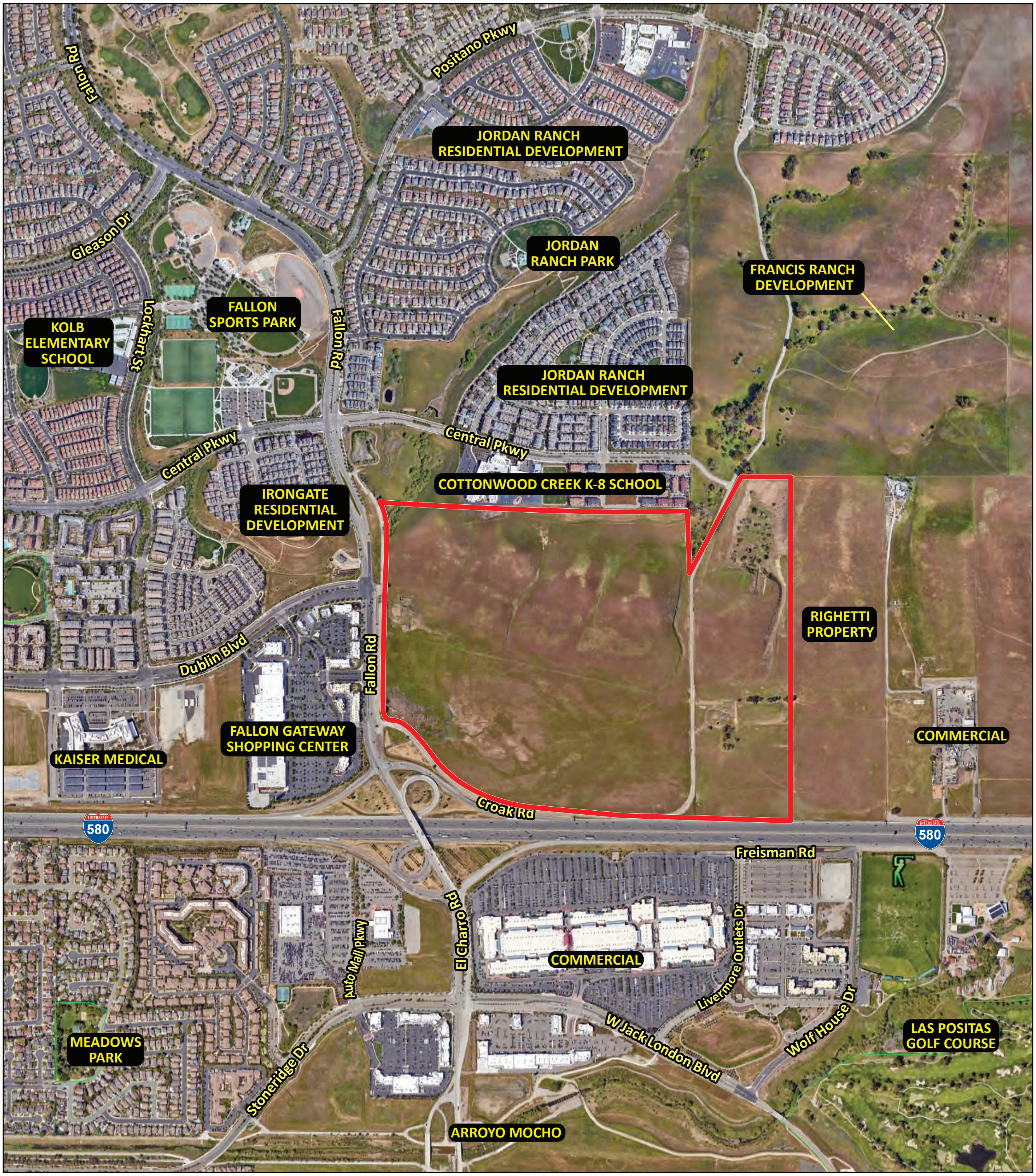

LSA

FIGURE 2

Project Site Boundary

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Dublin Fallon 580

Aerial Photograph of the Project Site and Surrounding Land Uses

SOURCE: Google Earth, 3/11/2022

I:\DUB2101.04\G\AerialProjectSiteLU.ai (7/18/2023)

FIGURE 3

LSA

N

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SOURCE: Mackay & Somps

Dublin Fallon 580
Proposal Parcel Layout

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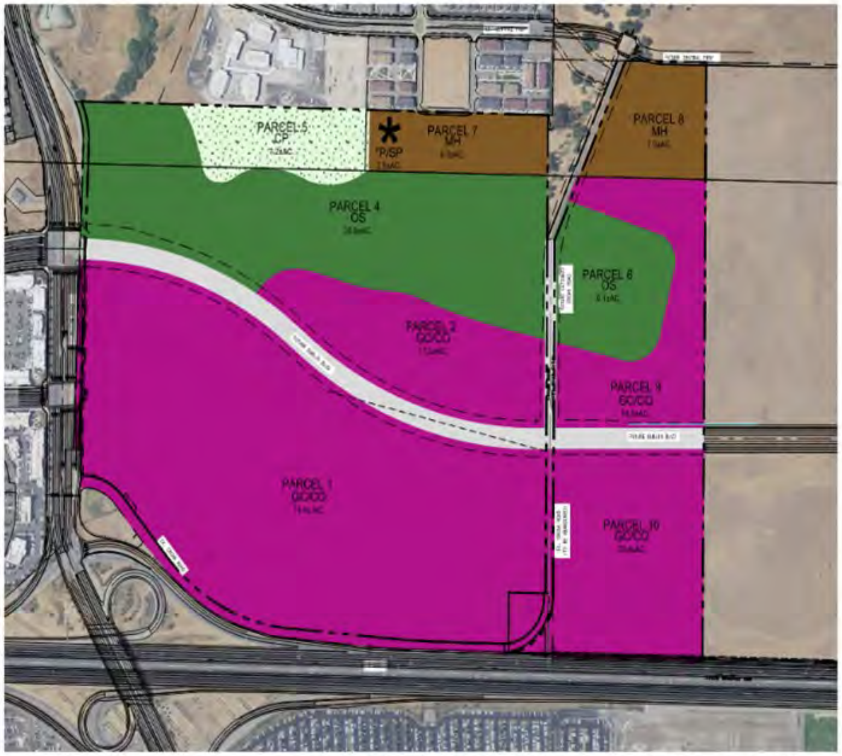
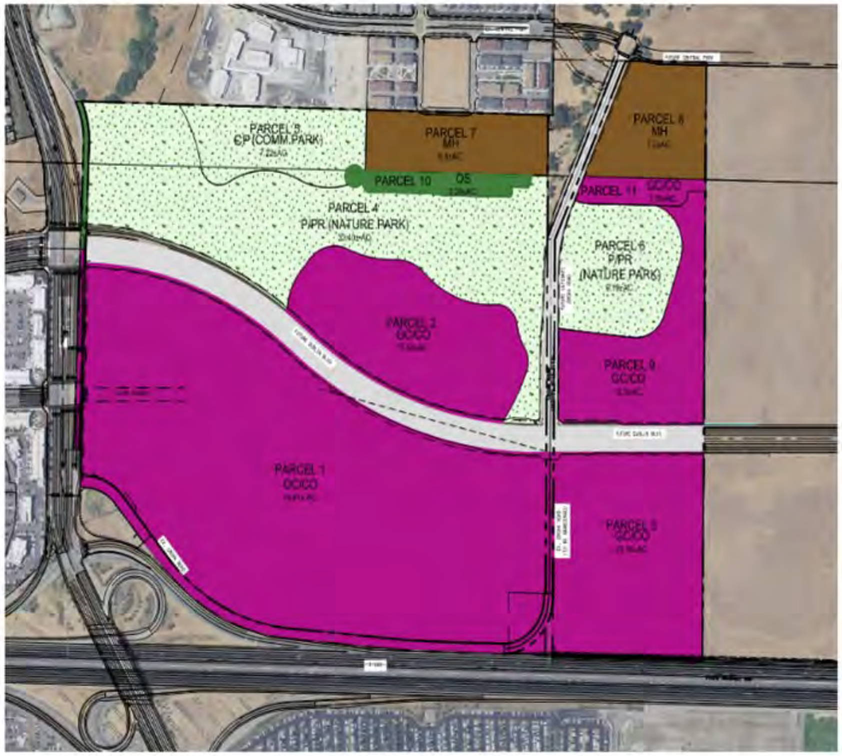


FALLON VILLAGE STAGE I PD EXISTING LAND USE PLAN



PROPOSED LAND USE PLAN

FALLON VILLAGE STAGE I PD EXISTING LAND USE ACREAGES

LAND-USE	M&S PARCEL ID	PARCEL LOCATION	GROSS PARCEL AREA (AC)	GROSS PARCEL AREA (SF)
GC/CO	1	SW GC/CO (SOUTH OF DUBLIN BLVD. / WEST OF CROAK RD.)	74.40	3,240,864
GC/CO	2	NW GC/CO (NORTH OF DUBLIN BLVD. / WEST OF CROAK RD.)	17.30	753,588
P/SP*	3*	P/SP SITE*	-	-
OS	4	OS (NORTH OF DUBLIN BLVD. / WEST OF CROAK RD.)	35.80	1,559,448
CP (PARK)	5	COMM. PARK SITE	7.20	313,632
OS	6	OS (NORTH OF DUBLIN BLVD. / EAST OF CROAK RD.)	9.10	396,396
MH	7	MH Residential (WEST OF CROAK RD.)	6.50	283,140
MH	8	MH Residential (EAST OF CROAK RD.)	7.00	304,920
GC/CO	9	NE GC/CO (NORTH OF DUBLIN BLVD. / EAST OF CROAK RD.)	14.30	622,908
GC/CO	10	SE GC/CO (SOUTH OF DUBLIN BLVD. / EAST OF CROAK RD.)	20.40	888,624
TOTAL ACRES			192.0	

1) Future parcel to be dedicated/created by separate instrument once P/SP location and use are defined with future PD2.

LAND-USE	GROSS PARCEL AREA (AC)	GROSS PARCEL AREA (SF)
GC/CO	126.40	5,505,984
OS	44.90	1,955,844
CP (PARK)	7.20	313,632
MH	13.50	588,060
TOTAL	192.00	8,363,520
P/SP[1]	2.50	108,900

(1) P/SP is a floating land use. Location and acreage will be deducted from affected land use once the final location is determined during PD2 approval.

PROPOSED LANDUSE

LAND-USE	M&S PARCEL ID	PARCEL LOCATION	GROSS PARCEL AREA (AC)	GROSS PARCEL AREA (SF)
GC/CO	1	SW GC/CO (SOUTH OF DUBLIN BLVD. / WEST OF CROAK RD.)	74.41	3,241,300
GC/CO	2	NW GC/CO (NORTH OF DUBLIN BLVD. / WEST OF CROAK RD.)	17.43	759,251
GC/CO	3	SE GC/CO (SOUTH OF DUBLIN BLVD. / EAST OF CROAK RD.)	20.16	882,526
P/PR (NATURE PARK)	4	P/PR - NATURE PARK (NORTH OF DUBLIN BLVD.)	33.40	1,454,904
CP (COMMUNITY PARK)	5	CP - COMMUNITY PARK SITE	7.22	314,503
P/PR (NATURE PARK)	6	P/PR NATURE PARK (EAST OF CROAK RD.	9.19	400,316
MH	7	MH Residential (WEST OF CROAK RD.)	6.50	283,140
MH	8	MH Residential (EAST OF CROAK RD.)	7.20	313,632
GC/CO	9	NE GC/CO (NORTH OF DUBLIN BLVD. / EAST OF CROAK RD.)	12.30	535,788
OS	10	OS (PRIVATE STREET SOUTH IF PARCEL 7)	2.28	99,317
GC/CO	11	GC/CO (PRIVATE STREET SOUTH IF PARCEL 8)	1.95	84,942
TOTAL ACRES			192.04	

1) GROSS ACREAGES FROM PRIOR STAGE 1PD AND EDSP WERE BASED ON ASSUMED BOUNDARY LIMITS. PROPOSED GROSS ACREAGES REFLECT THE RESOLVED BOUNDARY SURVEY OF THE PROPERTIES, RESULTING IN THE MINOR ACREAGE DIFFERENCES.

PROPOSED		
LAND-USE	GROSS PARCEL AREA (AC)	GROSS PARCEL AREA (SF)
GC/CO	126.25	5,499,450
P/PR (NATURE PARK)	42.59	1,855,220
CP (COMMUNITY PARK)	7.22	314,503
OS	2.28	NA
MH	13.70	596,772
TOTAL	192.04	8,265,946

(1) GROSS ACREAGES FROM PRIOR STAGE 1PD AND EDSP WERE BASED ON ASSUMED BOUNDARY LIMITS. PROPOSED GROSS ACREAGES REFLECT THE RESOLVED BOUNDARY SURVEY OF THE PROPERTIES, RESULTING IN THE MINOR ACREAGE DIFFERENCES.

LSA

FIGURE 4

N

0 600 1200

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SOURCES: KTGY; Mackay & Somps

Dublin Fallon 580

Existing and Proposed Land Use

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FIGURE 5

LSA

0 160 320
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SOURCES: KTGY; Mackay & Somps

Dublin Fallon 580
Residential Site Plan

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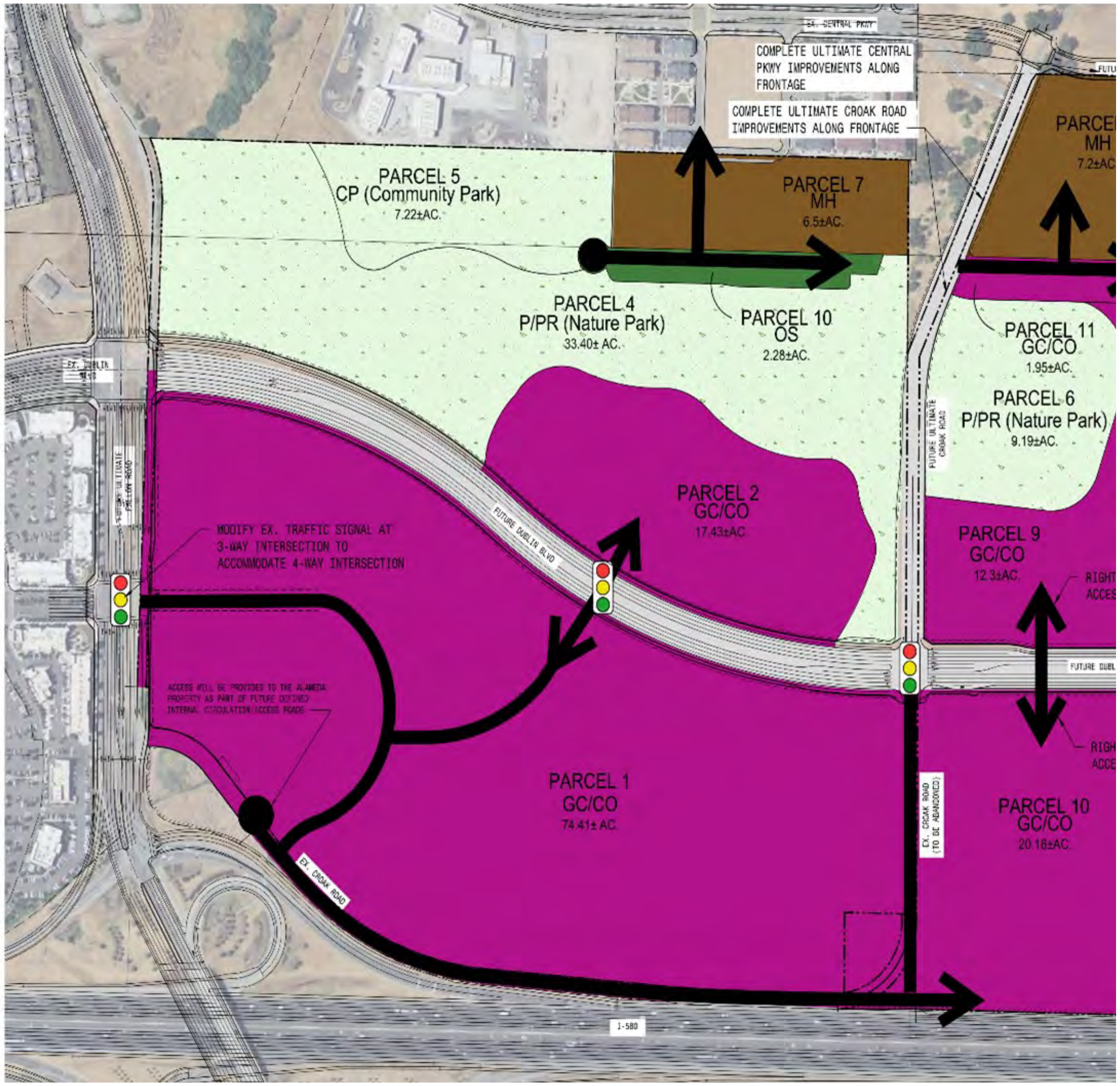

FIGURE 6

0 300 600
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SOURCES: KTGY; Mackay & Somps

Dublin Fallon 580
Conceptual Circulation Plan

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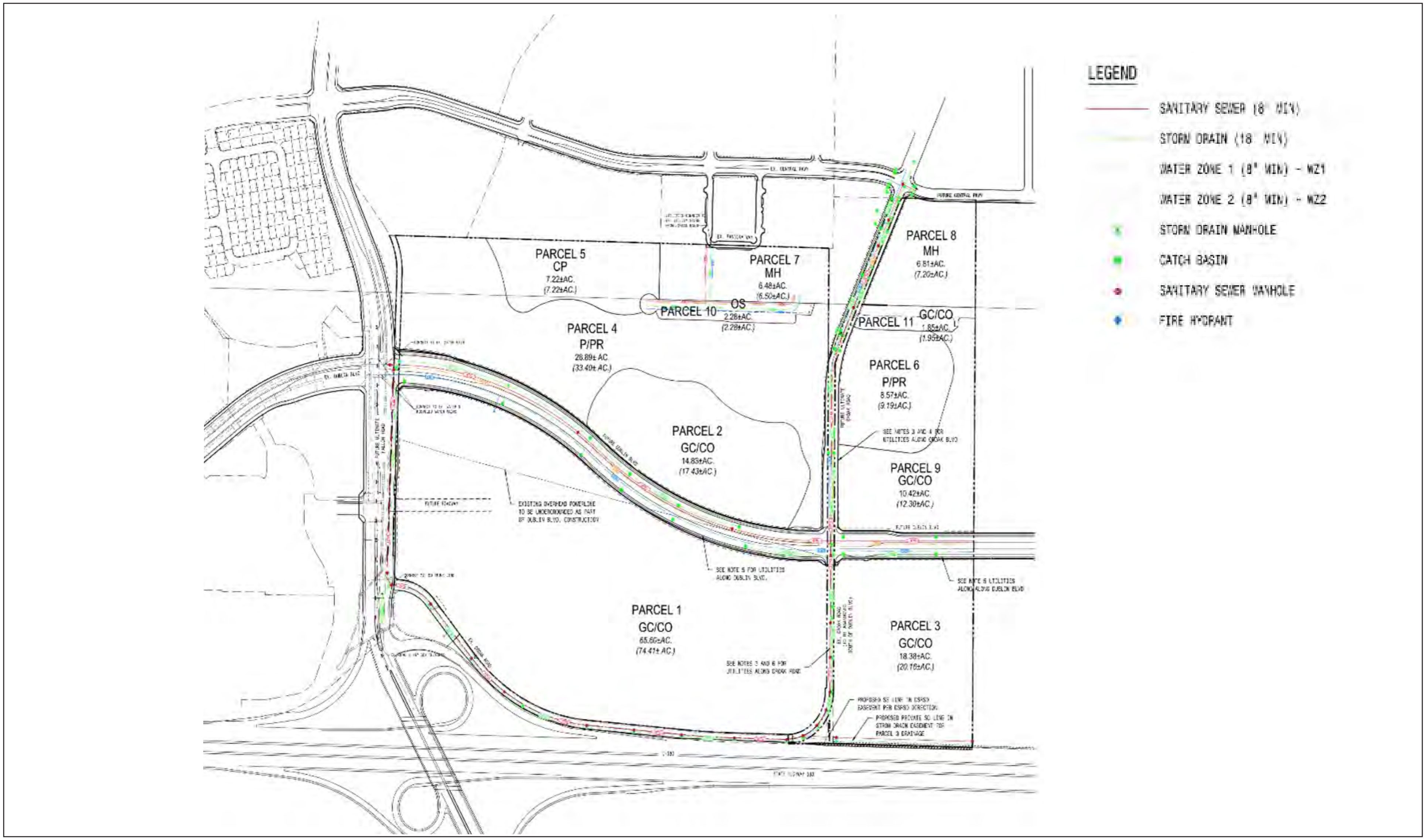

LSA

FIGURE 7

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0 400 800

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SOURCES: KTGY; Mackay & Somps

Dublin Fallon 580

Preliminary Utility Plan

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LSA

FIGURE 8

LEGEND

Project Site Boundary

LT-1 Long-term Noise Monitoring Location

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0 500 1000

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SOURCE: Google Earth 2023

Fallon 580 Project

Noise Monitoring Locations

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Appendix A
CalEEMod Output Sheets

Dublin Fallon 580 - Phase 1 Construction Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Dublin Fallon 580 - Phase 1 Construction
Construction Start Date	6/3/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	14.8
Location	37.70601841885312, -121.84634425123701
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	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Low Rise	128	Dwelling Unit	3.00	135,680	51,000	—	361	—

Parking Lot	23.1	1000sqft	0.50	0.00	0.00	—	—	—
Other Asphalt Surfaces	129	1000sqft	3.00	128,580	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	89.7	39.9	28.5	0.05	1.12	7.71	8.83	1.02	3.95	4.97	—	5,367	5,367	0.22	0.07	5,387
Mit.	89.3	3.57	28.5	0.05	0.10	7.71	7.81	0.10	3.95	4.05	—	5,367	5,367	0.22	0.07	5,387
% Reduced	< 0.5%	91%	—	—	91%	—	12%	90%	—	18%	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.47	42.4	33.4	0.05	1.44	3.09	4.54	1.34	1.42	2.75	—	5,805	5,805	0.23	0.08	5,835
Mit.	0.64	4.40	33.4	0.05	0.10	3.09	3.19	0.10	1.42	1.52	—	5,805	5,805	0.23	0.08	5,835
% Reduced	56%	90%	—	—	93%	—	30%	92%	—	45%	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	5.59	13.7	11.0	0.02	0.49	1.00	1.30	0.46	0.49	0.76	—	1,981	1,981	0.08	0.04	1,994
Mit.	5.47	1.63	11.0	0.02	0.03	1.00	1.03	0.03	0.49	0.51	—	1,981	1,981	0.08	0.04	1,994
% Reduced	2%	88%	—	—	93%	—	21%	93%	—	33%	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.02	2.49	2.00	< 0.005	0.09	0.18	0.24	0.08	0.09	0.14	—	328	328	0.01	0.01	330
Mit.	1.00	0.30	2.00	< 0.005	0.01	0.18	0.19	0.01	0.09	0.09	—	328	328	0.01	0.01	330
% Reduced	2%	88%	—	—	93%	—	21%	93%	—	33%	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.09	39.9	28.5	0.05	1.12	7.71	8.83	1.02	3.95	4.97	—	5,367	5,367	0.22	0.05	5,387
2025	0.73	19.1	15.5	0.02	0.69	0.28	0.97	0.64	0.07	0.71	—	2,791	2,791	0.11	0.05	2,809
2026	89.7	20.9	25.3	0.04	0.78	0.46	1.24	0.73	0.11	0.84	—	4,290	4,290	0.16	0.07	4,318
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.47	42.4	33.4	0.05	1.44	3.09	4.54	1.34	1.42	2.75	—	5,805	5,805	0.23	0.08	5,835
2025	0.72	19.1	15.4	0.02	0.69	0.28	0.97	0.64	0.07	0.71	—	2,772	2,772	0.11	0.05	2,789
2026	0.71	19.1	15.3	0.02	0.69	0.28	0.97	0.64	0.07	0.71	—	2,765	2,765	0.11	0.05	2,782
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.29	9.04	6.95	0.01	0.29	1.00	1.30	0.27	0.49	0.76	—	1,227	1,227	0.05	0.01	1,233
2025	0.52	13.7	11.0	0.02	0.49	0.20	0.69	0.46	0.05	0.51	—	1,981	1,981	0.08	0.04	1,994

2026	5.59	5.36	4.80	0.01	0.20	0.08	0.28	0.19	0.02	0.21	—	829	829	0.03	0.01	834
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.05	1.65	1.27	< 0.005	0.05	0.18	0.24	0.05	0.09	0.14	—	203	203	0.01	< 0.005	204
2025	0.09	2.49	2.00	< 0.005	0.09	0.04	0.13	0.08	0.01	0.09	—	328	328	0.01	0.01	330
2026	1.02	0.98	0.88	< 0.005	0.04	0.01	0.05	0.03	< 0.005	0.04	—	137	137	0.01	< 0.005	138

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.52	3.11	28.5	0.05	0.10	7.71	7.81	0.10	3.95	4.05	—	5,367	5,367	0.22	0.05	5,387
2025	0.34	2.26	15.5	0.02	0.04	0.28	0.33	0.04	0.07	0.11	—	2,791	2,791	0.11	0.05	2,809
2026	89.3	3.57	25.3	0.04	0.07	0.46	0.53	0.07	0.11	0.18	—	4,290	4,290	0.16	0.07	4,318
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.64	4.40	33.4	0.05	0.10	3.09	3.19	0.10	1.42	1.52	—	5,805	5,805	0.23	0.08	5,835
2025	0.33	2.30	15.4	0.02	0.04	0.28	0.33	0.04	0.07	0.11	—	2,772	2,772	0.11	0.05	2,789
2026	0.32	2.28	15.3	0.02	0.04	0.28	0.33	0.04	0.07	0.11	—	2,765	2,765	0.11	0.05	2,782
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.13	0.88	6.95	0.01	0.02	1.00	1.03	0.02	0.49	0.51	—	1,227	1,227	0.05	0.01	1,233
2025	0.24	1.63	11.0	0.02	0.03	0.20	0.23	0.03	0.05	0.08	—	1,981	1,981	0.08	0.04	1,994
2026	5.47	0.73	4.80	0.01	0.01	0.08	0.09	0.01	0.02	0.03	—	829	829	0.03	0.01	834
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.02	0.16	1.27	< 0.005	< 0.005	0.18	0.19	< 0.005	0.09	0.09	—	203	203	0.01	< 0.005	204
2025	0.04	0.30	2.00	< 0.005	0.01	0.04	0.04	0.01	0.01	0.01	—	328	328	0.01	0.01	330

2026	1.00	0.13	0.88	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	137	137	0.01	< 0.005	138

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	39.9	28.3	0.05	1.12	—	1.12	1.02	—	1.02	—	5,296	5,296	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	2.40	1.71	< 0.005	0.07	—	0.07	0.06	—	0.06	—	319	319	0.01	< 0.005	320
Dust From Material Movement	—	—	—	—	—	0.46	0.46	—	0.24	0.24	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.44	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.8	52.8	< 0.005	< 0.005	53.0
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	1.71
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.2. Site Preparation (2024) - Mitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	2.59	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,296	5,296	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.16	1.71	< 0.005	0.01	—	0.01	0.01	—	0.01	—	319	319	0.01	< 0.005	320
Dust From Material Movement	—	—	—	—	—	0.46	0.46	—	0.24	0.24	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.03	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	52.8	52.8	< 0.005	< 0.005	53.0
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	1.71
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.3. Finishing/Landscaping (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.57	8.11	0.01	0.02	—	0.02	0.02	—	0.02	—	1,151	1,151	0.05	0.01	1,155
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.03	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	69.4	69.4	< 0.005	< 0.005	69.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.5	11.5	< 0.005	< 0.005	11.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.0	85.0	< 0.005	< 0.005	86.3
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	27.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	4.85

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	1.65
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.4. Finishing/Landscaping (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.57	8.11	0.01	0.02	—	0.02	0.02	—	0.02	—	1,151	1,151	0.05	0.01	1,155
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.03	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	69.4	69.4	< 0.005	< 0.005	69.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.5	11.5	< 0.005	< 0.005	11.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.0	85.0	< 0.005	< 0.005	86.3
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	27.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	4.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	1.65
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.5. Rough Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	23.2	17.8	0.03	0.75	—	0.75	0.69	—	0.69	—	2,958	2,958	0.12	0.02	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	2.73	2.09	< 0.005	0.09	—	0.09	0.08	—	0.08	—	349	349	0.01	< 0.005	350
Dust From Material Movement	—	—	—	—	—	0.33	0.33	—	0.16	0.16	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.50	0.38	< 0.005	0.02	—	0.02	0.01	—	0.01	—	57.7	57.7	< 0.005	< 0.005	57.9
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.86	4.86	< 0.005	< 0.005	4.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.19	3.19	< 0.005	< 0.005	3.34
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	0.82
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	0.55
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

3.6. Rough Grading (2024) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,958	2,958	0.12	0.02	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.24	2.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	349	349	0.01	< 0.005	350
Dust From Material Movement	—	—	—	—	—	0.33	0.33	—	0.16	0.16	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.04	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	57.7	57.7	< 0.005	< 0.005	57.9
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.86	4.86	< 0.005	< 0.005	4.93
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.19	3.19	< 0.005	< 0.005	3.34
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.80	0.80	< 0.005	< 0.005	0.82
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.53	0.53	< 0.005	< 0.005	0.55
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

3.7. Fine Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	23.2	17.8	0.03	0.75	—	0.75	0.69	—	0.69	—	2,958	2,958	0.12	0.02	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	23.2	17.8	0.03	0.75	—	0.75	0.69	—	0.69	—	2,958	2,958	0.12	0.02	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	1.40	1.07	< 0.005	0.05	—	0.05	0.04	—	0.04	—	178	178	0.01	< 0.005	179
Dust From Material Movement	—	—	—	—	—	0.17	0.17	—	0.08	0.08	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.26	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.5	29.5	< 0.005	< 0.005	29.6
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.0	41.0	< 0.005	< 0.005	41.5
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.3
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	2.52

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	1.71
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.8. Fine Grading (2024) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,958	2,958	0.12	0.02	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,958	2,958	0.12	0.02	2,969
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.12	1.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	178	178	0.01	< 0.005	179
Dust From Material Movement	—	—	—	—	—	0.17	0.17	—	0.08	0.08	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.5	29.5	< 0.005	< 0.005	29.6
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.0	41.0	< 0.005	< 0.005	41.5
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.3
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	2.52

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	1.71
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.9. Building Construction (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.08	2.36	1.79	< 0.005	0.09	—	0.09	0.08	—	0.08	—	300	300	0.01	< 0.005	301
Onsite truck	0.00	0.00	0.00	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	0.43	0.33	< 0.005	0.02	—	0.02	0.01	—	0.01	—	49.7	49.7	< 0.005	< 0.005	49.9

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.10	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	246	246	0.01	0.01	249
Vendor	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	135	135	0.01	0.02	142
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.0	31.0	< 0.005	< 0.005	31.5
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	17.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.13	5.13	< 0.005	< 0.005	5.21
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.81	2.81	< 0.005	< 0.005	2.94
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

3.10. Building Construction (2024) - Mitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.25	1.79	< 0.005	0.01	—	0.01	0.01	—	0.01	—	300	300	0.01	< 0.005	301
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	49.7	49.7	< 0.005	< 0.005	49.9
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.10	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	246	246	0.01	0.01	249
Vendor	< 0.005	0.18	0.08	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	135	135	0.01	0.02	142
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	31.0	31.0	< 0.005	< 0.005	31.5
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	17.0	17.0	< 0.005	< 0.005	17.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.13	5.13	< 0.005	< 0.005	5.21
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.81	2.81	< 0.005	< 0.005	2.94
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

3.11. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,713	1,713	0.07	0.01	1,719
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	284	284	0.01	< 0.005	285

Onsite truck	0.00	0.00	0.00	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	0.10	0.07	1.15	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	260	260	< 0.005	0.01	264
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	139
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.02	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	241	241	0.01	0.01	244
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	139
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.71	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	176
Vendor	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	95.2	95.2	< 0.005	0.01	99.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.7	28.7	< 0.005	< 0.005	29.1
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	16.5
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

3.12. Building Construction (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,713	1,713	0.07	0.01	1,719
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	284	284	0.01	< 0.005	285
Onsite truck	0.00	0.00	0.00	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	0.10	0.07	1.15	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	260	260	< 0.005	0.01	264
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	139
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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.02	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	241	241	0.01	0.01	244
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	139
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.71	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	173	173	< 0.005	0.01	176
Vendor	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	95.2	95.2	< 0.005	0.01	99.5
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.7	28.7	< 0.005	< 0.005	29.1
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.8	15.8	< 0.005	< 0.005	16.5
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

3.13. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	4.39	3.33	0.01	0.16	—	0.16	0.15	—	0.15	—	558	558	0.02	< 0.005	560
Onsite truck	0.00	0.00	0.00	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	0.80	0.61	< 0.005	0.03	—	0.03	0.03	—	0.03	—	92.4	92.4	< 0.005	< 0.005	92.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.09	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	255	255	< 0.005	0.01	259
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.95	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	236	236	0.01	0.01	240
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.4	55.4	< 0.005	< 0.005	56.2
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.5	30.5	< 0.005	< 0.005	31.9

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.18	9.18	< 0.005	< 0.005	9.31
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.05	5.05	< 0.005	< 0.005	5.28
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

3.14. Building Construction (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.47	3.33	0.01	0.01	—	0.01	0.01	—	0.01	—	558	558	0.02	< 0.005	560
Onsite truck	0.00	0.00	0.00	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	0.09	0.61	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	92.4	92.4	< 0.005	< 0.005	92.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.09	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	255	255	< 0.005	0.01	259
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.95	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	236	236	0.01	0.01	240
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.22	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	55.4	55.4	< 0.005	< 0.005	56.2
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	30.5	30.5	< 0.005	< 0.005	31.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	9.18	9.18	< 0.005	< 0.005	9.31
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	5.05	5.05	< 0.005	< 0.005	5.28
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

3.15. Asphalt Paving (2026) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	13.3	10.6	0.01	0.58	—	0.58	0.54	—	0.54	—	1,511	1,511	0.06	0.01	1,516
Paving	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.80	0.64	< 0.005	0.03	—	0.03	0.03	—	0.03	—	91.0	91.0	< 0.005	< 0.005	91.4
Paving	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.15	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.1	15.1	< 0.005	< 0.005	15.1
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.5	42.5	< 0.005	< 0.005	43.1
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	27.4
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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.39	2.39	< 0.005	< 0.005	2.43
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	1.65
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.16. Asphalt Paving (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	—	1,511	1,511	0.06	0.01	1,516
Paving	0.42	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.12	0.64	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	91.0	91.0	< 0.005	< 0.005	91.4
Paving	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.1	15.1	< 0.005	< 0.005	15.1
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.18	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	42.5	42.5	< 0.005	< 0.005	43.1
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	27.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.39	2.39	< 0.005	< 0.005	2.43
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	1.65
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.40
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.17. Architectural Coating (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	88.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.05	8.05	< 0.005	< 0.005	8.07
Architectural Coatings	5.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.33	1.33	< 0.005	< 0.005	1.34
Architectural Coatings	0.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	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	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.0	85.0	< 0.005	< 0.005	86.3
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	27.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	4.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	1.65
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.18. Architectural Coating (2026) - Mitigated

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

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

Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	134
Architectural Coatings	88.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.05	8.05	< 0.005	< 0.005	8.07
Architectural Coatings	5.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.33	1.33	< 0.005	< 0.005	1.34
Architectural Coatings	0.98	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.03	0.02	0.36	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	85.0	85.0	< 0.005	< 0.005	86.3
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.2	26.2	< 0.005	< 0.005	27.4
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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.78	4.78	< 0.005	< 0.005	4.85
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.58	1.58	< 0.005	< 0.005	1.65
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.19. Utility Trenching (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	1.63	1.45	< 0.005	0.10	—	0.10	0.09	—	0.09	—	207	207	0.01	< 0.005	208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.10	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	12.5	12.5	< 0.005	< 0.005	12.5

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.07	2.07	< 0.005	< 0.005	2.08
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	1.71
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.20. Utility Trenching (2024) - Mitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.97	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	207	207	0.01	< 0.005	208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.5	12.5	< 0.005	< 0.005	12.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.07	2.07	< 0.005	< 0.005	2.08
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.21	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	44.2	44.2	< 0.005	< 0.005	44.9
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	27.1	27.1	< 0.005	< 0.005	28.4
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.49	2.49	< 0.005	< 0.005	2.52
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.63	1.63	< 0.005	< 0.005	1.71
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.41	0.41	< 0.005	< 0.005	0.42
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	6/3/2024	7/2/2024	5.00	22.0	—
Finishing/Landscaping	Site Preparation	4/29/2026	5/28/2026	5.00	22.0	—
Rough Grading	Grading	7/3/2024	8/30/2024	5.00	43.0	—

Fine Grading	Grading	9/30/2024	10/29/2024	5.00	22.0	—
Building Construction	Building Construction	10/29/2024	4/29/2026	5.00	392	—
Asphalt Paving	Paving	5/29/2026	6/29/2026	5.00	22.0	—
Architectural Coating	Architectural Coating	4/29/2026	5/28/2026	5.00	22.0	—
Utility Trenching	Trenching	8/30/2024	9/30/2024	5.00	22.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 2	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 2	4.00	8.00	84.0	0.37
Finishing/Landscaping	Excavators	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Rough Grading	Excavators	Diesel	Tier 2	1.00	8.00	36.0	0.38
Rough Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	8.00	84.0	0.37
Fine Grading	Excavators	Diesel	Tier 2	1.00	8.00	36.0	0.38
Fine Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Fine Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 2	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 2	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	7.00	84.0	0.37

Building Construction	Welders	Diesel	Tier 2	1.00	8.00	46.0	0.45
Asphalt Paving	Pavers	Diesel	Tier 2	2.00	8.00	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Tier 2	2.00	8.00	89.0	0.36
Asphalt Paving	Rollers	Diesel	Tier 2	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 2	1.00	6.00	37.0	0.48
Utility Trenching	Trenchers	Diesel	Tier 2	1.00	8.00	40.0	0.50

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Finishing/Landscaping	Excavators	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Rough Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Rough Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Fine Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Fine Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Fine Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45

Asphalt Paving	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
Asphalt Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	8.00	89.0	0.36
Asphalt Paving	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48
Utility Trenching	Trenchers	Diesel	Tier 4 Final	1.00	8.00	40.0	0.50

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	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Rough Grading	Vendor	1.00	8.40	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Finishing/Landscaping	—	—	—	—
Finishing/Landscaping	Worker	10.0	11.7	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	1.00	8.40	HHDT,MHDT
Finishing/Landscaping	Hauling	0.00	20.0	HHDT
Finishing/Landscaping	Onsite truck	—	—	HHDT
Fine Grading	—	—	—	—
Fine Grading	Worker	5.00	11.7	LDA,LDT1,LDT2

Fine Grading	Vendor	1.00	8.40	HHDT,MHDT
Fine Grading	Hauling	0.00	20.0	HHDT
Fine Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	30.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	5.00	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	5.00	11.7	LDA,LDT1,LDT2
Asphalt Paving	Vendor	1.00	8.40	HHDT,MHDT
Asphalt Paving	Hauling	0.00	20.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	1.00	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Utility Trenching	Vendor	1.00	8.40	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	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	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Rough Grading	Vendor	1.00	8.40	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Finishing/Landscaping	—	—	—	—
Finishing/Landscaping	Worker	10.0	11.7	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	1.00	8.40	HHDT,MHDT
Finishing/Landscaping	Hauling	0.00	20.0	HHDT
Finishing/Landscaping	Onsite truck	—	—	HHDT
Fine Grading	—	—	—	—
Fine Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Fine Grading	Vendor	1.00	8.40	HHDT,MHDT
Fine Grading	Hauling	0.00	20.0	HHDT
Fine Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	30.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	5.00	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Asphalt Paving	—	—	—	—
Asphalt Paving	Worker	5.00	11.7	LDA,LDT1,LDT2
Asphalt Paving	Vendor	1.00	8.40	HHDT,MHDT

Asphalt Paving	Hauling	0.00	20.0	HHDT
Asphalt Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	1.00	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Utility Trenching	Vendor	1.00	8.40	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	274,752	91,584	0.00	0.00	9,148

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	—	—	33.0	0.00	—
Finishing/Landscaping	—	—	0.00	0.00	—
Rough Grading	—	—	43.0	0.00	—
Fine Grading	—	—	22.0	0.00	—
Asphalt Paving	0.00	0.00	0.00	0.00	3.50

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Low Rise	—	0%
Parking Lot	0.50	100%
Other Asphalt Surfaces	3.00	100%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005

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)

8. User Changes to Default Data

Screen	Justification
Land Use	The total site acreage for Phase 1 is 6.5 acres. Other asphalt surfaces include non-parking asphalt and hardscape.
Construction: Construction Phases	Phase 1 construction would occur from from June 2024 to June 2026.
Construction: Off-Road Equipment	Default construction equipment and the use of Tier 2 construction equipment for all phases except Utility Trenching (use of a trencher) and Finishing/Landscaping (use of a Tier 4 excavator).
Construction: Trips and VMT	The number of construction worker and vendor trips were provided by the Project Applicant.

Dublin Fallon 580 - Phase 2 Construction Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Dublin Fallon 580 - Phase 2 Construction
Construction Start Date	6/2/2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	14.8
Location	37.70595251758296, -121.84620238933934
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	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Low Rise	110	Dwelling Unit	5.00	116,600	111,000	—	310	—

Parking Lot	11.8	1000sqft	0.20	0.00	0.00	—	—	—
Other Asphalt Surfaces	91.4	1000sqft	2.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	76.8	39.9	28.5	0.05	1.12	7.71	8.83	1.02	3.95	4.97	—	5,365	5,365	0.22	0.07	5,385
Mit.	76.4	3.55	28.5	0.05	0.10	7.71	7.81	0.10	3.95	4.05	—	5,365	5,365	0.22	0.07	5,385
% Reduced	1%	91%	—	—	91%	—	12%	90%	—	18%	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.47	42.4	33.3	0.05	1.44	3.09	4.54	1.34	1.42	2.75	—	5,798	5,798	0.23	0.08	5,827
Mit.	0.64	4.39	33.3	0.05	0.10	3.09	3.19	0.10	1.42	1.52	—	5,798	5,798	0.23	0.08	5,827
% Reduced	57%	90%	—	—	93%	—	30%	92%	—	45%	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	4.79	13.6	10.9	0.02	0.49	1.00	1.30	0.46	0.49	0.76	—	1,976	1,976	0.08	0.03	1,989
Mit.	4.68	1.62	10.9	0.02	0.03	1.00	1.03	0.03	0.49	0.51	—	1,976	1,976	0.08	0.03	1,989
% Reduced	2%	88%	—	—	93%	—	21%	93%	—	33%	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.88	2.49	1.99	< 0.005	0.09	0.18	0.24	0.08	0.09	0.14	—	327	327	0.01	0.01	329
Mit.	0.85	0.30	1.99	< 0.005	0.01	0.18	0.19	0.01	0.09	0.09	—	327	327	0.01	0.01	329
% Reduced	2%	88%	—	—	93%	—	21%	93%	—	33%	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.09	39.9	28.5	0.05	1.12	7.71	8.83	1.02	3.95	4.97	—	5,365	5,365	0.22	0.05	5,385
2026	0.71	19.1	15.5	0.02	0.69	0.28	0.97	0.64	0.07	0.71	—	2,783	2,783	0.11	0.05	2,801
2027	76.8	20.8	25.2	0.04	0.78	0.46	1.24	0.73	0.11	0.84	—	4,279	4,279	0.16	0.07	4,306
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	1.47	42.4	33.3	0.05	1.44	3.09	4.54	1.34	1.42	2.75	—	5,798	5,798	0.23	0.08	5,827
2026	0.71	19.1	15.3	0.02	0.69	0.28	0.97	0.64	0.07	0.71	—	2,765	2,765	0.11	0.05	2,782
2027	0.71	19.1	15.3	0.02	0.69	0.28	0.97	0.64	0.07	0.71	—	2,758	2,758	0.11	0.05	2,775
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.30	9.08	6.96	0.01	0.30	1.00	1.30	0.27	0.49	0.76	—	1,232	1,232	0.05	0.01	1,237
2026	0.51	13.6	10.9	0.02	0.49	0.20	0.69	0.46	0.05	0.51	—	1,976	1,976	0.08	0.03	1,989

2027	4.79	5.32	4.75	0.01	0.20	0.08	0.28	0.19	0.02	0.21	—	822	822	0.03	0.01	827
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.05	1.66	1.27	< 0.005	0.05	0.18	0.24	0.05	0.09	0.14	—	204	204	0.01	< 0.005	205
2026	0.09	2.49	1.99	< 0.005	0.09	0.04	0.13	0.08	0.01	0.09	—	327	327	0.01	0.01	329
2027	0.88	0.97	0.87	< 0.005	0.04	0.01	0.05	0.03	< 0.005	0.04	—	136	136	0.01	< 0.005	137

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.52	3.10	28.5	0.05	0.10	7.71	7.81	0.10	3.95	4.05	—	5,365	5,365	0.22	0.05	5,385
2026	0.32	2.25	15.5	0.02	0.04	0.28	0.33	0.04	0.07	0.11	—	2,783	2,783	0.11	0.05	2,801
2027	76.4	3.55	25.2	0.04	0.07	0.46	0.53	0.07	0.11	0.18	—	4,279	4,279	0.16	0.07	4,306
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.64	4.39	33.3	0.05	0.10	3.09	3.19	0.10	1.42	1.52	—	5,798	5,798	0.23	0.08	5,827
2026	0.32	2.28	15.3	0.02	0.04	0.28	0.33	0.04	0.07	0.11	—	2,765	2,765	0.11	0.05	2,782
2027	0.32	2.27	15.3	0.02	0.04	0.28	0.33	0.04	0.07	0.11	—	2,758	2,758	0.11	0.05	2,775
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.13	0.88	6.96	0.01	0.02	1.00	1.03	0.02	0.49	0.51	—	1,232	1,232	0.05	0.01	1,237
2026	0.23	1.62	10.9	0.02	0.03	0.20	0.23	0.03	0.05	0.08	—	1,976	1,976	0.08	0.03	1,989
2027	4.68	0.72	4.75	0.01	0.01	0.08	0.09	0.01	0.02	0.03	—	822	822	0.03	0.01	827
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	0.02	0.16	1.27	< 0.005	< 0.005	0.18	0.19	< 0.005	0.09	0.09	—	204	204	0.01	< 0.005	205
2026	0.04	0.30	1.99	< 0.005	0.01	0.04	0.04	0.01	0.01	0.01	—	327	327	0.01	0.01	329

2027	0.85	0.13	0.87	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	136	136	0.01	< 0.005	137

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	39.9	28.3	0.05	1.12	—	1.12	1.02	—	1.02	—	5,295	5,295	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	2.40	1.71	< 0.005	0.07	—	0.07	0.06	—	0.06	—	319	319	0.01	< 0.005	320
Dust From Material Movement	—	—	—	—	—	0.46	0.46	—	0.24	0.24	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.44	0.31	< 0.005	0.01	—	0.01	0.01	—	0.01	—	52.8	52.8	< 0.005	< 0.005	53.0
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	2.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	1.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	2.59	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,295	5,295	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.16	1.71	< 0.005	0.01	—	0.01	0.01	—	0.01	—	319	319	0.01	< 0.005	320
Dust From Material Movement	—	—	—	—	—	0.46	0.46	—	0.24	0.24	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.03	0.31	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	52.8	52.8	< 0.005	< 0.005	53.0
Dust From Material Movement	—	—	—	—	—	0.08	0.08	—	0.04	0.04	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	2.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	1.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.3. Finishing/Landscaping (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.57	8.11	0.01	0.02	—	0.02	0.02	—	0.02	—	1,151	1,151	0.05	0.01	1,155
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.03	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	69.4	69.4	< 0.005	< 0.005	69.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.5	11.5	< 0.005	< 0.005	11.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	83.4	83.4	< 0.005	< 0.005	84.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.69	4.69	< 0.005	< 0.005	4.76

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	1.62
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.4. Finishing/Landscaping (2027) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.11	0.57	8.11	0.01	0.02	—	0.02	0.02	—	0.02	—	1,151	1,151	0.05	0.01	1,155
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.03	0.49	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	69.4	69.4	< 0.005	< 0.005	69.6
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	11.5	11.5	< 0.005	< 0.005	11.5
Dust From Material Movement	—	—	—	—	—	0.00	0.00	—	0.00	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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	83.4	83.4	< 0.005	< 0.005	84.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.69	4.69	< 0.005	< 0.005	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	1.62
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.5. Rough Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	23.2	17.8	0.03	0.75	—	0.75	0.69	—	0.69	—	2,959	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.09	2.73	2.09	< 0.005	0.09	—	0.09	0.08	—	0.08	—	349	349	0.01	< 0.005	350
Dust From Material Movement	—	—	—	—	—	0.33	0.33	—	0.16	0.16	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.50	0.38	< 0.005	0.02	—	0.02	0.01	—	0.01	—	57.7	57.7	< 0.005	< 0.005	57.9
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.76	4.76	< 0.005	< 0.005	4.84
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.14	3.14	< 0.005	< 0.005	3.28
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.52	0.52	< 0.005	< 0.005	0.54
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

3.6. Rough Grading (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,959	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.24	2.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	349	349	0.01	< 0.005	350
Dust From Material Movement	—	—	—	—	—	0.33	0.33	—	0.16	0.16	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.04	0.38	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	57.7	57.7	< 0.005	< 0.005	57.9
Dust From Material Movement	—	—	—	—	—	0.06	0.06	—	0.03	0.03	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.76	4.76	< 0.005	< 0.005	4.84
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	3.14	3.14	< 0.005	< 0.005	3.28
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.79	0.79	< 0.005	< 0.005	0.80
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.52	0.52	< 0.005	< 0.005	0.54
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

3.7. Fine Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	23.2	17.8	0.03	0.75	—	0.75	0.69	—	0.69	—	2,959	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.73	23.2	17.8	0.03	0.75	—	0.75	0.69	—	0.69	—	2,959	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	1.40	1.07	< 0.005	0.05	—	0.05	0.04	—	0.04	—	178	178	0.01	< 0.005	179
Dust From Material Movement	—	—	—	—	—	0.17	0.17	—	0.08	0.08	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.26	0.20	< 0.005	0.01	—	0.01	0.01	—	0.01	—	29.5	29.5	< 0.005	< 0.005	29.6
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.2	40.2	< 0.005	< 0.005	40.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.7	26.7	< 0.005	< 0.005	27.8
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	2.47

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	1.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.8. Fine Grading (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,959	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.29	2.04	17.8	0.03	0.06	—	0.06	0.06	—	0.06	—	2,959	2,959	0.12	0.02	2,970
Dust From Material Movement	—	—	—	—	—	2.76	2.76	—	1.34	1.34	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.12	1.07	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	178	178	0.01	< 0.005	179
Dust From Material Movement	—	—	—	—	—	0.17	0.17	—	0.08	0.08	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	29.5	29.5	< 0.005	< 0.005	29.6
Dust From Material Movement	—	—	—	—	—	0.03	0.03	—	0.01	0.01	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	40.2	40.2	< 0.005	< 0.005	40.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.7	26.7	< 0.005	< 0.005	27.8
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	2.47

Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	1.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.9. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.08	2.40	1.82	< 0.005	0.09	—	0.09	0.08	—	0.08	—	305	305	0.01	< 0.005	306
Onsite truck	0.00	0.00	0.00	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	0.44	0.33	< 0.005	0.02	—	0.02	0.01	—	0.01	—	50.5	50.5	< 0.005	< 0.005	50.7

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.02	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	241	241	0.01	0.01	244
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	139
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.9	30.9	< 0.005	< 0.005	31.3
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	17.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.11	5.11	< 0.005	< 0.005	5.19
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.81	2.81	< 0.005	< 0.005	2.93
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

3.10. Building Construction (2025) - Mitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.26	1.82	< 0.005	0.01	—	0.01	0.01	—	0.01	—	305	305	0.01	< 0.005	306
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.05	0.33	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	50.5	50.5	< 0.005	< 0.005	50.7
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.10	0.09	1.02	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	241	241	0.01	0.01	244
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	133	133	0.01	0.02	139
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.9	30.9	< 0.005	< 0.005	31.3
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	16.9	16.9	< 0.005	< 0.005	17.7
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.11	5.11	< 0.005	< 0.005	5.19
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	2.81	2.81	< 0.005	< 0.005	2.93
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

3.11. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.09	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	255	255	< 0.005	0.01	259
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.95	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	236	236	0.01	0.01	240
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.66	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	170	170	< 0.005	0.01	172
Vendor	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	93.5	93.5	< 0.005	0.01	97.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.2	28.2	< 0.005	< 0.005	28.6
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.5	15.5	< 0.005	< 0.005	16.2
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

3.12. Building Construction (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.09	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	255	255	< 0.005	0.01	259
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.08	0.95	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	236	236	0.01	0.01	240
Vendor	< 0.005	0.17	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	131	131	0.01	0.02	137
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.05	0.66	0.00	0.00	0.18	0.18	0.00	0.04	0.04	—	170	170	< 0.005	0.01	172
Vendor	< 0.005	0.12	0.05	< 0.005	< 0.005	0.02	0.03	< 0.005	0.01	0.01	—	93.5	93.5	< 0.005	0.01	97.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	28.2	28.2	< 0.005	< 0.005	28.6
Vendor	< 0.005	0.02	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	15.5	15.5	< 0.005	< 0.005	16.2
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

3.13. Building Construction (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	4.36	3.30	0.01	0.16	—	0.16	0.15	—	0.15	—	554	554	0.02	< 0.005	555
Onsite truck	0.00	0.00	0.00	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	0.80	0.60	< 0.005	0.03	—	0.03	0.03	—	0.03	—	91.6	91.6	< 0.005	< 0.005	92.0
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.01	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	250	250	< 0.005	0.01	254
Vendor	< 0.005	0.15	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	128	128	0.01	0.02	135
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.90	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	232	232	0.01	0.01	235
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	128	128	0.01	0.02	134
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.20	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	54.0	54.0	< 0.005	< 0.005	54.7
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.6	29.6	< 0.005	< 0.005	31.0

Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.93	8.93	< 0.005	< 0.005	9.06
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.91	4.91	< 0.005	< 0.005	5.14
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

3.14. Building Construction (2027) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.47	3.30	0.01	0.01	—	0.01	0.01	—	0.01	—	554	554	0.02	< 0.005	555
Onsite truck	0.00	0.00	0.00	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	0.09	0.60	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	91.6	91.6	< 0.005	< 0.005	92.0
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.09	0.06	1.01	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	250	250	< 0.005	0.01	254
Vendor	< 0.005	0.15	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	128	128	0.01	0.02	135
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.90	0.00	0.00	0.25	0.25	0.00	0.06	0.06	—	232	232	0.01	0.01	235
Vendor	< 0.005	0.16	0.07	< 0.005	< 0.005	0.04	0.04	< 0.005	0.01	0.01	—	128	128	0.01	0.02	134
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.20	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	54.0	54.0	< 0.005	< 0.005	54.7
Vendor	< 0.005	0.04	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	29.6	29.6	< 0.005	< 0.005	31.0
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.04	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	8.93	8.93	< 0.005	< 0.005	9.06
Vendor	< 0.005	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	4.91	4.91	< 0.005	< 0.005	5.14
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

3.15. Paving (2027) - Unmitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	13.3	10.6	0.01	0.58	—	0.58	0.54	—	0.54	—	1,511	1,511	0.06	0.01	1,516
Paving	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.80	0.64	< 0.005	0.03	—	0.03	0.03	—	0.03	—	91.1	91.1	< 0.005	< 0.005	91.4
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.15	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	15.1	15.1	< 0.005	< 0.005	15.1
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.7	41.7	< 0.005	< 0.005	42.3
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.35	2.35	< 0.005	< 0.005	2.38
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	1.62
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.16. Paving (2027) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	—	1,511	1,511	0.06	0.01	1,516
Paving	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.01	0.12	0.64	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	91.1	91.1	< 0.005	< 0.005	91.4
Paving	0.02	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.12	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	15.1	15.1	< 0.005	< 0.005	15.1
Paving	< 0.005	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.17	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	41.7	41.7	< 0.005	< 0.005	42.3
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.35	2.35	< 0.005	< 0.005	2.38
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	1.62
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.39	0.39	< 0.005	< 0.005	0.39
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.17. Architectural Coating (2027) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	75.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.07	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.05	8.05	< 0.005	< 0.005	8.07
Architectural Coatings	4.57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.33	1.33	< 0.005	< 0.005	1.34
Architectural Coatings	0.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	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	0.03	0.02	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	83.4	83.4	< 0.005	< 0.005	84.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.69	4.69	< 0.005	< 0.005	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	1.62
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.18. Architectural Coating (2027) - Mitigated

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

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

Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	134
Architectural Coatings	75.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	8.05	8.05	< 0.005	< 0.005	8.07
Architectural Coatings	4.57	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.33	1.33	< 0.005	< 0.005	1.34
Architectural Coatings	0.83	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.03	0.02	0.34	0.00	0.00	0.08	0.08	0.00	0.02	0.02	—	83.4	83.4	< 0.005	< 0.005	84.7
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	25.7	25.7	< 0.005	< 0.005	26.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	4.69	4.69	< 0.005	< 0.005	4.76
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.55	1.55	< 0.005	< 0.005	1.62
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.78	0.78	< 0.005	< 0.005	0.79
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.26	0.26	< 0.005	< 0.005	0.27
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

3.19. Utility Trenching (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.08	1.63	1.45	< 0.005	0.10	—	0.10	0.09	—	0.09	—	207	207	0.01	< 0.005	208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.10	0.09	< 0.005	0.01	—	0.01	0.01	—	0.01	—	12.5	12.5	< 0.005	< 0.005	12.5

Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.07	2.07	< 0.005	< 0.005	2.08
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	2.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	1.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

3.20. Utility Trenching (2025) - Mitigated

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

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

Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.97	1.45	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	207	207	0.01	< 0.005	208
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	0.09	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	12.5	12.5	< 0.005	< 0.005	12.5
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.07	2.07	< 0.005	< 0.005	2.08
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.01	0.19	0.00	0.00	0.04	0.04	0.00	0.01	0.01	—	43.3	43.3	< 0.005	< 0.005	44.0
Vendor	< 0.005	0.03	0.01	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	26.6	26.6	< 0.005	< 0.005	27.9
Hauling	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.44	2.44	< 0.005	< 0.005	2.47
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.61	1.61	< 0.005	< 0.005	1.68
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.40	0.40	< 0.005	< 0.005	0.41
Vendor	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	0.27	0.27	< 0.005	< 0.005	0.28
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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	6/2/2025	7/1/2025	5.00	22.0	—
Finishing/Landscaping	Site Preparation	4/28/2027	5/27/2027	5.00	22.0	—
Rough Grading	Grading	7/2/2025	8/29/2025	5.00	43.0	—

Fine Grading	Grading	9/29/2025	10/28/2025	5.00	22.0	—
Building Construction	Building Construction	10/28/2025	4/28/2027	5.00	392	—
Paving	Paving	5/28/2027	6/28/2027	5.00	22.0	—
Architectural Coating	Architectural Coating	4/28/2027	5/27/2027	5.00	22.0	—
Utility Trenching	Trenching	8/29/2025	9/29/2025	5.00	22.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 2	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 2	4.00	8.00	84.0	0.37
Finishing/Landscaping	Excavators	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Rough Grading	Excavators	Diesel	Tier 2	1.00	8.00	36.0	0.38
Rough Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	8.00	84.0	0.37
Fine Grading	Excavators	Diesel	Tier 2	1.00	8.00	36.0	0.38
Fine Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Fine Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 2	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 2	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	7.00	84.0	0.37

Building Construction	Welders	Diesel	Tier 2	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 2	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 2	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 2	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 2	1.00	6.00	37.0	0.48
Utility Trenching	Trenchers	Diesel	Tier 2	1.00	8.00	40.0	0.50

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Finishing/Landscaping	Excavators	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Rough Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Rough Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Rough Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Rough Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Fine Grading	Excavators	Diesel	Tier 4 Final	1.00	8.00	36.0	0.38
Fine Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Fine Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Fine Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45

Paving	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48
Utility Trenching	Trenchers	Diesel	Tier 4 Final	1.00	8.00	40.0	0.50

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	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Rough Grading	Vendor	1.00	8.40	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	30.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	5.00	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	5.00	11.7	LDA,LDT1,LDT2

Paving	Vendor	1.00	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	1.00	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Finishing/Landscaping	—	—	—	—
Finishing/Landscaping	Worker	10.0	11.7	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	1.00	8.40	HHDT,MHDT
Finishing/Landscaping	Hauling	0.00	20.0	HHDT
Finishing/Landscaping	Onsite truck	—	—	HHDT
Fine Grading	—	—	—	—
Fine Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Fine Grading	Vendor	1.00	8.40	HHDT,MHDT
Fine Grading	Hauling	0.00	20.0	HHDT
Fine Grading	Onsite truck	—	—	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Utility Trenching	Vendor	1.00	8.40	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	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	5.00	11.7	LDA,LDT1,LDT2
Site Preparation	Vendor	1.00	8.40	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Rough Grading	—	—	—	—
Rough Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Rough Grading	Vendor	1.00	8.40	HHDT,MHDT
Rough Grading	Hauling	0.00	20.0	HHDT
Rough Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	30.0	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	5.00	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	5.00	11.7	LDA,LDT1,LDT2
Paving	Vendor	1.00	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	10.0	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	1.00	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT
Finishing/Landscaping	—	—	—	—
Finishing/Landscaping	Worker	10.0	11.7	LDA,LDT1,LDT2
Finishing/Landscaping	Vendor	1.00	8.40	HHDT,MHDT

Finishing/Landscaping	Hauling	0.00	20.0	HHDT
Finishing/Landscaping	Onsite truck	—	—	HHDT
Fine Grading	—	—	—	—
Fine Grading	Worker	5.00	11.7	LDA,LDT1,LDT2
Fine Grading	Vendor	1.00	8.40	HHDT,MHDT
Fine Grading	Hauling	0.00	20.0	HHDT
Fine Grading	Onsite truck	—	—	HHDT
Utility Trenching	—	—	—	—
Utility Trenching	Worker	5.00	11.7	LDA,LDT1,LDT2
Utility Trenching	Vendor	1.00	8.40	HHDT,MHDT
Utility Trenching	Hauling	0.00	20.0	HHDT
Utility Trenching	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	236,115	78,705	0.00	0.00	5,750

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	—	—	33.0	0.00	—
Finishing/Landscaping	—	—	0.00	0.00	—
Rough Grading	—	—	43.0	0.00	—
Fine Grading	—	—	22.0	0.00	—
Paving	0.00	0.00	0.00	0.00	2.20

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Apartments Low Rise	—	0%
Parking Lot	0.20	100%
Other Asphalt Surfaces	2.00	100%

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
2027	0.00	204	0.03	< 0.005

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)

8. User Changes to Default Data

Screen	Justification
Land Use	Total site acreage for Phase 2 is 7.2 acres. Other asphalt surfaces include non-parking asphalt and hardscape.
Construction: Construction Phases	Construction of Phase 2 would occur from June 2025 to June 2027.
Construction: Off-Road Equipment	Assuming default equipment and Tier 2 equipment for all phases except Finishing/Landscaping (Tier 4 excavator) and Utility Trenching (trencher).
Construction: Trips and VMT	Construction worker and vendor trips provided by the Project Applicant.

Dublin Fallon 580 - Phase 3 Construction Custom Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Dublin Fallon 580 - Phase 3 Construction
Construction Start Date	6/3/2024
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	14.8
Location	37.70627361661711, -121.84643848238551
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	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Manufacturing	2,888	1000sqft	109	2,888,400	0.00	—	—	—

Hotel	314	Room	17.3	455,928	0.00	—	—	—
Regional Shopping Center	100	1000sqft	3.80	100,000	0.00	—	—	—
Government Office Building	100	1000sqft	3.80	100,000	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-5	Use Advanced Engine Tiers

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	247	48.9	79.0	0.13	1.36	16.2	17.1	1.23	3.98	4.99	—	30,588	30,588	0.95	2.75	31,523
Mit.	247	24.2	79.0	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	30,588	30,588	0.95	2.75	31,523
% Reduced	< 0.5%	51%	—	—	81%	—	4%	79%	—	15%	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	247	48.9	72.8	0.13	1.36	16.2	17.1	1.23	3.98	4.83	—	29,680	29,680	1.04	2.78	30,537
Mit.	247	26.6	72.8	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	29,680	29,680	1.04	2.78	30,537
% Reduced	< 0.5%	46%	—	—	81%	—	4%	79%	—	12%	—	—	—	—	—	—

Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	74.0	32.6	48.3	0.09	0.81	11.5	12.2	0.75	2.82	3.44	—	20,904	20,904	0.70	1.96	21,533
Mit.	74.0	17.5	48.3	0.09	0.19	11.5	11.7	0.19	2.82	3.01	—	20,904	20,904	0.70	1.96	21,533
% Reduced	< 0.5%	46%	—	—	77%	—	4%	75%	—	12%	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	13.5	5.95	8.81	0.02	0.15	2.10	2.22	0.14	0.51	0.63	—	3,461	3,461	0.12	0.33	3,565
Mit.	13.5	3.19	8.81	0.02	0.03	2.10	2.14	0.03	0.51	0.55	—	3,461	3,461	0.12	0.33	3,565
% Reduced	< 0.5%	46%	—	—	77%	—	4%	75%	—	12%	—	—	—	—	—	—

2.2. Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.40	48.9	36.2	0.06	1.36	7.81	8.93	1.23	3.97	4.99	—	6,775	6,775	0.27	0.06	6,800
2025	6.10	48.9	79.0	0.13	1.36	16.2	17.1	1.23	3.98	4.83	—	30,588	30,588	0.95	2.75	31,523
2026	5.50	40.2	75.5	0.13	0.90	16.2	17.1	0.86	3.98	4.83	—	30,084	30,084	0.95	2.75	31,012
2027	5.30	39.1	71.6	0.13	0.90	16.2	17.1	0.86	3.98	4.83	—	29,551	29,551	0.91	2.75	30,472
2028	5.19	38.4	68.6	0.13	0.90	16.2	17.1	0.86	3.98	4.83	—	28,982	28,982	0.90	2.25	29,747
2029	4.86	37.2	66.0	0.13	0.90	16.2	17.1	0.75	3.98	4.73	—	28,386	28,386	0.79	2.25	29,141
2030	4.76	36.6	63.4	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	27,769	27,769	0.76	2.14	28,485
2031	4.57	36.0	61.2	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	27,165	27,165	0.76	2.14	27,875
2032	4.44	35.1	59.1	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	26,564	26,564	0.75	2.04	27,235
2033	4.34	34.6	57.4	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	25,992	25,992	0.75	1.93	26,626

2034	247	1.44	7.95	< 0.005	0.07	2.43	2.49	0.06	0.57	0.63	—	2,338	2,338	0.03	0.02	2,349
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	1.40	48.9	36.1	0.06	1.36	3.75	5.11	1.23	1.46	2.70	—	6,762	6,762	0.27	0.06	6,787
2025	5.88	48.9	72.8	0.13	1.36	16.2	17.1	1.23	3.98	4.83	—	29,680	29,680	1.04	2.78	30,537
2026	5.31	42.2	69.2	0.13	0.90	16.2	17.1	0.86	3.98	4.83	—	29,195	29,195	1.01	2.78	30,051
2027	5.15	41.1	66.1	0.13	0.90	16.2	17.1	0.86	3.98	4.83	—	28,680	28,680	1.01	2.78	29,536
2028	5.02	39.9	63.2	0.13	0.90	16.2	17.1	0.86	3.98	4.83	—	28,127	28,127	0.97	2.67	28,950
2029	4.78	39.1	60.7	0.13	0.90	16.2	17.1	0.75	3.98	4.73	—	27,546	27,546	0.86	2.63	28,352
2030	4.57	38.0	58.2	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	26,944	26,944	0.83	2.52	27,718
2031	4.45	37.4	56.5	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	26,352	26,352	0.83	2.14	27,012
2032	4.32	36.4	54.6	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	25,762	25,762	0.81	2.04	26,390
2033	247	35.9	52.7	0.13	0.80	16.2	17.0	0.75	3.98	4.73	—	25,201	25,201	0.78	1.93	25,796
2034	247	1.55	7.08	< 0.005	0.07	2.43	2.49	0.06	0.57	0.63	—	2,180	2,180	0.04	0.02	2,187
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.52	18.2	13.3	0.02	0.51	2.50	3.01	0.46	1.19	1.65	—	2,498	2,498	0.10	0.02	2,507
2025	2.49	32.6	37.3	0.07	0.81	6.79	7.61	0.75	1.87	2.62	—	12,496	12,496	0.44	0.95	12,805
2026	3.78	29.5	48.3	0.09	0.65	11.5	12.1	0.61	2.81	3.43	—	20,904	20,904	0.70	1.96	21,533
2027	3.64	28.7	46.2	0.09	0.65	11.5	12.1	0.61	2.81	3.43	—	20,535	20,535	0.70	1.96	21,162
2028	3.58	28.2	44.3	0.09	0.65	11.5	12.2	0.61	2.82	3.44	—	20,194	20,194	0.67	1.88	20,794
2029	3.35	27.4	42.5	0.09	0.65	11.5	12.1	0.54	2.81	3.35	—	19,723	19,723	0.59	1.88	20,318
2030	3.25	26.9	40.8	0.09	0.57	11.5	12.1	0.54	2.81	3.35	—	19,293	19,293	0.59	1.53	19,781
2031	3.12	26.1	39.4	0.09	0.57	11.5	12.1	0.54	2.81	3.35	—	18,869	18,869	0.57	1.53	19,355
2032	3.08	25.8	38.2	0.09	0.57	11.5	12.1	0.54	2.82	3.36	—	18,497	18,497	0.56	1.46	18,960
2033	27.6	12.5	15.2	0.03	0.40	3.39	3.79	0.37	0.83	1.20	—	5,749	5,749	0.18	0.38	5,869
2034	74.0	0.44	2.06	< 0.005	0.02	0.72	0.74	0.02	0.17	0.19	—	657	657	0.01	0.01	659
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.09	3.32	2.43	< 0.005	0.09	0.46	0.55	0.08	0.22	0.30	—	414	414	0.02	< 0.005	415
2025	0.45	5.95	6.81	0.01	0.15	1.24	1.39	0.14	0.34	0.48	—	2,069	2,069	0.07	0.16	2,120
2026	0.69	5.39	8.81	0.02	0.12	2.10	2.21	0.11	0.51	0.63	—	3,461	3,461	0.12	0.33	3,565
2027	0.66	5.24	8.44	0.02	0.12	2.10	2.21	0.11	0.51	0.63	—	3,400	3,400	0.12	0.33	3,504
2028	0.65	5.16	8.09	0.02	0.12	2.10	2.22	0.11	0.51	0.63	—	3,343	3,343	0.11	0.31	3,443
2029	0.61	4.99	7.76	0.02	0.12	2.10	2.21	0.10	0.51	0.61	—	3,265	3,265	0.10	0.31	3,364
2030	0.59	4.91	7.45	0.02	0.10	2.10	2.20	0.10	0.51	0.61	—	3,194	3,194	0.10	0.25	3,275
2031	0.57	4.77	7.20	0.02	0.10	2.10	2.20	0.10	0.51	0.61	—	3,124	3,124	0.09	0.25	3,204
2032	0.56	4.71	6.97	0.02	0.10	2.10	2.21	0.10	0.51	0.61	—	3,062	3,062	0.09	0.24	3,139
2033	5.04	2.27	2.78	0.01	0.07	0.62	0.69	0.07	0.15	0.22	—	952	952	0.03	0.06	972
2034	13.5	0.08	0.38	< 0.005	< 0.005	0.13	0.14	< 0.005	0.03	0.03	—	109	109	< 0.005	< 0.005	109

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.71	4.47	36.2	0.06	0.12	7.81	7.91	0.12	3.97	4.07	—	6,775	6,775	0.27	0.06	6,800
2025	5.71	24.2	79.0	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	30,588	30,588	0.95	2.75	31,523
2026	5.11	23.3	75.5	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	30,084	30,084	0.95	2.75	31,012
2027	4.91	22.2	71.6	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	29,551	29,551	0.91	2.75	30,472
2028	4.80	21.6	68.6	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	28,982	28,982	0.90	2.25	29,747
2029	4.47	20.4	66.0	0.13	0.26	16.2	16.5	0.15	3.98	4.13	—	28,386	28,386	0.79	2.25	29,141
2030	4.37	19.7	63.4	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	27,769	27,769	0.76	2.14	28,485
2031	4.18	19.2	61.2	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	27,165	27,165	0.76	2.14	27,875
2032	4.05	18.3	59.1	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	26,564	26,564	0.75	2.04	27,235
2033	3.95	17.7	57.4	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	25,992	25,992	0.75	1.93	26,626

2034	247	1.00	7.95	< 0.005	< 0.005	2.43	2.43	< 0.005	0.57	0.57	—	2,338	2,338	0.03	0.02	2,349
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.71	4.49	36.1	0.06	0.12	3.75	3.88	0.12	1.46	1.59	—	6,762	6,762	0.27	0.06	6,787
2025	5.49	26.6	72.8	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	29,680	29,680	1.04	2.78	30,537
2026	4.92	25.3	69.2	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	29,195	29,195	1.01	2.78	30,051
2027	4.76	24.2	66.1	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	28,680	28,680	1.01	2.78	29,536
2028	4.63	23.0	63.2	0.13	0.26	16.2	16.5	0.26	3.98	4.23	—	28,127	28,127	0.97	2.67	28,950
2029	4.39	22.3	60.7	0.13	0.26	16.2	16.5	0.15	3.98	4.13	—	27,546	27,546	0.86	2.63	28,352
2030	4.18	21.1	58.2	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	26,944	26,944	0.83	2.52	27,718
2031	4.06	20.6	56.5	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	26,352	26,352	0.83	2.14	27,012
2032	3.93	19.6	54.6	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	25,762	25,762	0.81	2.04	26,390
2033	247	19.0	52.7	0.13	0.15	16.2	16.4	0.15	3.98	4.13	—	25,201	25,201	0.78	1.93	25,796
2034	247	1.10	7.08	< 0.005	< 0.005	2.43	2.43	< 0.005	0.57	0.57	—	2,180	2,180	0.04	0.02	2,187
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2024	0.26	1.43	13.3	0.02	0.05	2.50	2.55	0.05	1.19	1.24	—	2,498	2,498	0.10	0.02	2,507
2025	2.10	10.3	37.3	0.07	0.13	6.79	6.93	0.13	1.87	2.00	—	12,496	12,496	0.44	0.95	12,805
2026	3.50	17.5	48.3	0.09	0.18	11.5	11.7	0.18	2.81	3.00	—	20,904	20,904	0.70	1.96	21,533
2027	3.36	16.7	46.2	0.09	0.18	11.5	11.7	0.18	2.81	3.00	—	20,535	20,535	0.70	1.96	21,162
2028	3.30	16.2	44.3	0.09	0.19	11.5	11.7	0.19	2.82	3.01	—	20,194	20,194	0.67	1.88	20,794
2029	3.07	15.3	42.5	0.09	0.18	11.5	11.7	0.11	2.81	2.92	—	19,723	19,723	0.59	1.88	20,318
2030	2.98	14.9	40.8	0.09	0.11	11.5	11.6	0.11	2.81	2.92	—	19,293	19,293	0.59	1.53	19,781
2031	2.84	14.1	39.4	0.09	0.11	11.5	11.6	0.11	2.81	2.92	—	18,869	18,869	0.57	1.53	19,355
2032	2.80	13.8	38.2	0.09	0.11	11.5	11.6	0.11	2.82	2.93	—	18,497	18,497	0.56	1.46	18,960
2033	27.4	4.50	15.2	0.03	0.04	3.39	3.43	0.04	0.83	0.87	—	5,749	5,749	0.18	0.38	5,869
2034	74.0	0.30	2.06	< 0.005	< 0.005	0.72	0.72	< 0.005	0.17	0.17	—	657	657	0.01	0.01	659
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2024	0.05	0.26	2.43	< 0.005	0.01	0.46	0.46	0.01	0.22	0.23	—	414	414	0.02	< 0.005	415
2025	0.38	1.88	6.81	0.01	0.02	1.24	1.26	0.02	0.34	0.37	—	2,069	2,069	0.07	0.16	2,120
2026	0.64	3.19	8.81	0.02	0.03	2.10	2.13	0.03	0.51	0.55	—	3,461	3,461	0.12	0.33	3,565
2027	0.61	3.05	8.44	0.02	0.03	2.10	2.13	0.03	0.51	0.55	—	3,400	3,400	0.12	0.33	3,504
2028	0.60	2.95	8.09	0.02	0.03	2.10	2.14	0.03	0.51	0.55	—	3,343	3,343	0.11	0.31	3,443
2029	0.56	2.80	7.76	0.02	0.03	2.10	2.13	0.02	0.51	0.53	—	3,265	3,265	0.10	0.31	3,364
2030	0.54	2.71	7.45	0.02	0.02	2.10	2.12	0.02	0.51	0.53	—	3,194	3,194	0.10	0.25	3,275
2031	0.52	2.57	7.20	0.02	0.02	2.10	2.12	0.02	0.51	0.53	—	3,124	3,124	0.09	0.25	3,204
2032	0.51	2.51	6.97	0.02	0.02	2.10	2.12	0.02	0.51	0.53	—	3,062	3,062	0.09	0.24	3,139
2033	5.00	0.82	2.78	0.01	0.01	0.62	0.63	0.01	0.15	0.16	—	952	952	0.03	0.06	972
2034	13.5	0.06	0.38	< 0.005	< 0.005	0.13	0.13	< 0.005	0.03	0.03	—	109	109	< 0.005	< 0.005	109

3. Construction Emissions Details

3.1. Site Preparation (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.07	39.9	28.3	0.05	1.12	—	1.12	1.02	—	1.02	—	5,296	5,296	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.25	9.28	6.59	0.01	0.26	—	0.26	0.24	—	0.24	—	1,233	1,233	0.05	0.01	1,237
Dust From Material Movement	—	—	—	—	—	1.79	1.79	—	0.92	0.92	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.05	1.69	1.20	< 0.005	0.05	—	0.05	0.04	—	0.04	—	204	204	0.01	< 0.005	205
Dust From Material Movement	—	—	—	—	—	0.33	0.33	—	0.17	0.17	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.73	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	155	155	< 0.005	0.01	157
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.6	33.6	< 0.005	< 0.005	34.1

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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.56	5.56	< 0.005	< 0.005	5.65
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
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

3.2. Site Preparation (2024) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	2.59	28.3	0.05	0.10	—	0.10	0.10	—	0.10	—	5,296	5,296	0.21	0.04	5,314
Dust From Material Movement	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	0.60	6.59	0.01	0.02	—	0.02	0.02	—	0.02	—	1,233	1,233	0.05	0.01	1,237
Dust From Material Movement	—	—	—	—	—	1.79	1.79	—	0.92	0.92	—	—	—	—	—	—

Onsite truck	0.00	0.00	0.00	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	0.11	1.20	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	204	204	0.01	< 0.005	205
Dust From Material Movement	—	—	—	—	—	0.33	0.33	—	0.17	0.17	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.04	0.73	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	155	155	< 0.005	0.01	157
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.14	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	33.6	33.6	< 0.005	< 0.005	34.1
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.56	5.56	< 0.005	< 0.005	5.65
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
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

3.3. Grading (2024) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.33	48.8	35.3	0.06	1.36	—	1.36	1.23	—	1.23	—	6,598	6,598	0.27	0.05	6,621
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	1.33	48.8	35.3	0.06	1.36	—	1.36	1.23	—	1.23	—	6,598	6,598	0.27	0.05	6,621
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.24	8.89	6.43	0.01	0.25	—	0.25	0.22	—	0.22	—	1,201	1,201	0.05	0.01	1,205
Dust From Material Movement	—	—	—	—	—	0.65	0.65	—	0.26	0.26	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	1.62	1.17	< 0.005	0.05	—	0.05	0.04	—	0.04	—	199	199	0.01	< 0.005	199
Dust From Material Movement	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	177	177	< 0.005	0.01	179
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.73	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	164	164	< 0.005	0.01	166
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.0	30.0	< 0.005	< 0.005	30.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.97	4.97	< 0.005	< 0.005	5.05
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
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

3.4. Grading (2024) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	4.43	35.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,598	6,598	0.27	0.05	6,621
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	4.43	35.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,598	6,598	0.27	0.05	6,621
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.12	0.81	6.43	0.01	0.02	—	0.02	0.02	—	0.02	—	1,201	1,201	0.05	0.01	1,205
Dust From Material Movement	—	—	—	—	—	0.65	0.65	—	0.26	0.26	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.15	1.17	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	199	199	0.01	< 0.005	199
Dust From Material Movement	—	—	—	—	—	0.12	0.12	—	0.05	0.05	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.83	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	177	177	< 0.005	0.01	179
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.73	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	164	164	< 0.005	0.01	166
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	30.0	30.0	< 0.005	< 0.005	30.5
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	4.97	4.97	< 0.005	< 0.005	5.05
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
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

3.5. Grading (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.33	48.8	35.3	0.06	1.36	—	1.36	1.23	—	1.23	—	6,599	6,599	0.27	0.05	6,622
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	1.33	48.8	35.3	0.06	1.36	—	1.36	1.23	—	1.23	—	6,599	6,599	0.27	0.05	6,622
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.50	18.4	13.3	0.02	0.51	—	0.51	0.46	—	0.46	—	2,479	2,479	0.10	0.02	2,488
Dust From Material Movement	—	—	—	—	—	1.35	1.35	—	0.54	0.54	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.09	3.35	2.42	< 0.005	0.09	—	0.09	0.08	—	0.08	—	410	410	0.02	< 0.005	412
Dust From Material Movement	—	—	—	—	—	0.25	0.25	—	0.10	0.10	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.07	0.04	0.77	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	173	173	< 0.005	0.01	176
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.8	60.8	< 0.005	< 0.005	61.7
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	10.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
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

3.6. Grading (2025) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	4.43	35.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,599	6,599	0.27	0.05	6,622
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.64	4.43	35.3	0.06	0.12	—	0.12	0.12	—	0.12	—	6,599	6,599	0.27	0.05	6,622
Dust From Material Movement	—	—	—	—	—	3.59	3.59	—	1.42	1.42	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.24	1.66	13.3	0.02	0.05	—	0.05	0.05	—	0.05	—	2,479	2,479	0.10	0.02	2,488
Dust From Material Movement	—	—	—	—	—	1.35	1.35	—	0.54	0.54	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.30	2.42	< 0.005	0.01	—	0.01	0.01	—	0.01	—	410	410	0.02	< 0.005	412
Dust From Material Movement	—	—	—	—	—	0.25	0.25	—	0.10	0.10	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.07	0.04	0.77	0.00	0.00	0.17	0.17	0.00	0.04	0.04	—	173	173	< 0.005	0.01	176
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	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	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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.25	0.00	0.00	0.06	0.06	0.00	0.01	0.01	—	60.8	60.8	< 0.005	< 0.005	61.7
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.05	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	10.1	10.1	< 0.005	< 0.005	10.2
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
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

3.7. Building Construction (2025) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.21	6.32	4.79	0.01	0.23	—	0.23	0.21	—	0.21	—	802	802	0.03	0.01	805
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	1.15	0.87	< 0.005	0.04	—	0.04	0.04	—	0.04	—	133	133	0.01	< 0.005	133
Onsite truck	0.00	0.00	0.00	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	5.00	3.21	56.4	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,718	12,718	0.23	0.48	12,916
Vendor	0.48	19.0	8.30	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,472	15,472	0.62	2.25	16,201
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.80	4.57	50.0	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,797	11,797	0.32	0.51	11,958
Vendor	0.46	20.0	8.54	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,485	15,485	0.62	2.25	16,173
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60	1.37	16.2	0.00	0.00	4.02	4.02	0.00	0.94	0.94	—	3,974	3,974	0.10	0.17	4,035
Vendor	0.16	6.56	2.82	0.04	0.07	1.36	1.43	0.07	0.38	0.45	—	5,179	5,179	0.21	0.75	5,415
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	2.95	0.00	0.00	0.73	0.73	0.00	0.17	0.17	—	658	658	0.02	0.03	668
Vendor	0.03	1.20	0.51	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	858	858	0.03	0.12	897
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

3.8. Building Construction (2025) - Mitigated

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

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

Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,398	2,398	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.08	0.68	4.79	0.01	0.01	—	0.01	0.01	—	0.01	—	802	802	0.03	0.01	805
Onsite truck	0.00	0.00	0.00	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	0.12	0.87	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	133	133	0.01	< 0.005	133
Onsite truck	0.00	0.00	0.00	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	5.00	3.21	56.4	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,718	12,718	0.23	0.48	12,916
Vendor	0.48	19.0	8.30	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,472	15,472	0.62	2.25	16,201
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.80	4.57	50.0	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,797	11,797	0.32	0.51	11,958

Vendor	0.46	20.0	8.54	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,485	15,485	0.62	2.25	16,173
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	1.60	1.37	16.2	0.00	0.00	4.02	4.02	0.00	0.94	0.94	—	3,974	3,974	0.10	0.17	4,035
Vendor	0.16	6.56	2.82	0.04	0.07	1.36	1.43	0.07	0.38	0.45	—	5,179	5,179	0.21	0.75	5,415
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.25	2.95	0.00	0.00	0.73	0.73	0.00	0.17	0.17	—	658	658	0.02	0.03	668
Vendor	0.03	1.20	0.51	0.01	0.01	0.25	0.26	0.01	0.07	0.08	—	858	858	0.03	0.12	897
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

3.9. Building Construction (2026) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	4.39	3.15	53.2	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,476	12,476	0.23	0.48	12,670
Vendor	0.48	18.2	8.05	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,210	15,210	0.62	2.25	15,937
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.23	4.13	46.7	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,575	11,575	0.29	0.51	11,735
Vendor	0.46	19.2	8.18	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,223	15,223	0.62	2.25	15,911
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.00	2.61	32.3	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	8,324	8,324	0.19	0.34	8,444
Vendor	0.34	13.4	5.75	0.08	0.15	2.90	3.05	0.15	0.80	0.96	—	10,868	10,868	0.44	1.61	11,371
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.55	0.48	5.90	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,378	1,378	0.03	0.06	1,398

Vendor	0.06	2.45	1.05	0.01	0.03	0.53	0.56	0.03	0.15	0.17	—	1,799	1,799	0.07	0.27	1,883
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

3.10. Building Construction (2026) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	4.39	3.15	53.2	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,476	12,476	0.23	0.48	12,670
Vendor	0.48	18.2	8.05	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,210	15,210	0.62	2.25	15,937
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.23	4.13	46.7	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,575	11,575	0.29	0.51	11,735
Vendor	0.46	19.2	8.18	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	15,223	15,223	0.62	2.25	15,911
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.00	2.61	32.3	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	8,324	8,324	0.19	0.34	8,444
Vendor	0.34	13.4	5.75	0.08	0.15	2.90	3.05	0.15	0.80	0.96	—	10,868	10,868	0.44	1.61	11,371
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.55	0.48	5.90	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,378	1,378	0.03	0.06	1,398
Vendor	0.06	2.45	1.05	0.01	0.03	0.53	0.56	0.03	0.15	0.17	—	1,799	1,799	0.07	0.27	1,883
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

3.11. Building Construction (2027) - Unmitigated

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

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

Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	4.20	2.74	49.6	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,246	12,246	0.19	0.48	12,434
Vendor	0.48	17.4	7.71	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,909	14,909	0.62	2.25	15,633
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.07	3.69	43.9	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,361	11,361	0.29	0.51	11,521

Vendor	0.46	18.5	7.93	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,921	14,921	0.62	2.25	15,610
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.86	2.29	30.4	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	8,170	8,170	0.19	0.34	8,289
Vendor	0.34	12.9	5.58	0.08	0.15	2.90	3.05	0.15	0.80	0.96	—	10,653	10,653	0.44	1.61	11,155
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.42	5.55	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,353	1,353	0.03	0.06	1,372
Vendor	0.06	2.36	1.02	0.01	0.03	0.53	0.56	0.03	0.15	0.17	—	1,764	1,764	0.07	0.27	1,847
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

3.12. Building Construction (2027) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	4.20	2.74	49.6	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,246	12,246	0.19	0.48	12,434
Vendor	0.48	17.4	7.71	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,909	14,909	0.62	2.25	15,633
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	4.07	3.69	43.9	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,361	11,361	0.29	0.51	11,521
Vendor	0.46	18.5	7.93	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,921	14,921	0.62	2.25	15,610
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.86	2.29	30.4	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	8,170	8,170	0.19	0.34	8,289
Vendor	0.34	12.9	5.58	0.08	0.15	2.90	3.05	0.15	0.80	0.96	—	10,653	10,653	0.44	1.61	11,155
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.52	0.42	5.55	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,353	1,353	0.03	0.06	1,372

Vendor	0.06	2.36	1.02	0.01	0.03	0.53	0.56	0.03	0.15	0.17	—	1,764	1,764	0.07	0.27	1,847
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

3.13. Building Construction (2028) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,717	1,717	0.07	0.01	1,723
Onsite truck	0.00	0.00	0.00	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	0.08	2.47	1.87	< 0.005	0.09	—	0.09	0.08	—	0.08	—	284	284	0.01	< 0.005	285
Onsite truck	0.00	0.00	0.00	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	4.10	2.70	46.8	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,028	12,028	0.19	0.10	12,099
Vendor	0.47	16.8	7.46	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,556	14,556	0.61	2.13	15,242
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.94	3.24	41.2	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,160	11,160	0.26	0.51	11,319
Vendor	0.46	17.8	7.67	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,569	14,569	0.61	2.15	15,225
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.28	28.7	0.00	0.00	8.61	8.61	0.00	2.02	2.02	—	8,048	8,048	0.16	0.34	8,165
Vendor	0.34	12.5	5.41	0.08	0.15	2.91	3.06	0.15	0.80	0.96	—	10,429	10,429	0.44	1.53	10,906
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.42	5.23	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,332	1,332	0.03	0.06	1,352
Vendor	0.06	2.27	0.99	0.01	0.03	0.53	0.56	0.03	0.15	0.17	—	1,727	1,727	0.07	0.25	1,806
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

3.14. Building Construction (2028) - Mitigated

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

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

Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,406
Onsite truck	0.00	0.00	0.00	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	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,717	1,717	0.07	0.01	1,723
Onsite truck	0.00	0.00	0.00	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	0.27	1.87	< 0.005	0.01	—	0.01	0.01	—	0.01	—	284	284	0.01	< 0.005	285
Onsite truck	0.00	0.00	0.00	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	4.10	2.70	46.8	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	12,028	12,028	0.19	0.10	12,099
Vendor	0.47	16.8	7.46	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,556	14,556	0.61	2.13	15,242
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.94	3.24	41.2	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,160	11,160	0.26	0.51	11,319

Vendor	0.46	17.8	7.67	0.11	0.22	4.09	4.31	0.22	1.13	1.35	—	14,569	14,569	0.61	2.15	15,225
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.80	2.28	28.7	0.00	0.00	8.61	8.61	0.00	2.02	2.02	—	8,048	8,048	0.16	0.34	8,165
Vendor	0.34	12.5	5.41	0.08	0.15	2.91	3.06	0.15	0.80	0.96	—	10,429	10,429	0.44	1.53	10,906
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.51	0.42	5.23	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,332	1,332	0.03	0.06	1,352
Vendor	0.06	2.27	0.99	0.01	0.03	0.53	0.56	0.03	0.15	0.17	—	1,727	1,727	0.07	0.25	1,806
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

3.15. Building Construction (2029) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	3.88	2.26	44.4	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,823	11,823	0.19	0.10	11,891
Vendor	0.36	16.1	7.23	0.11	0.22	4.09	4.31	0.11	1.13	1.24	—	14,165	14,165	0.50	2.13	14,846
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.81	3.21	39.0	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,970	10,970	0.26	0.48	11,120
Vendor	0.35	17.0	7.43	0.11	0.22	4.09	4.31	0.11	1.13	1.24	—	14,178	14,178	0.50	2.13	14,828
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.65	1.98	27.0	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	7,889	7,889	0.16	0.34	8,005
Vendor	0.25	11.9	5.24	0.08	0.15	2.90	3.05	0.08	0.80	0.88	—	10,122	10,122	0.36	1.52	10,595
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.36	4.94	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,306	1,306	0.03	0.06	1,325

Vendor	0.05	2.17	0.96	0.01	0.03	0.53	0.56	0.01	0.15	0.16	—	1,676	1,676	0.06	0.25	1,754
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

3.16. Building Construction (2029) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	3.88	2.26	44.4	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,823	11,823	0.19	0.10	11,891
Vendor	0.36	16.1	7.23	0.11	0.22	4.09	4.31	0.11	1.13	1.24	—	14,165	14,165	0.50	2.13	14,846
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.81	3.21	39.0	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,970	10,970	0.26	0.48	11,120
Vendor	0.35	17.0	7.43	0.11	0.22	4.09	4.31	0.11	1.13	1.24	—	14,178	14,178	0.50	2.13	14,828
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.65	1.98	27.0	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	7,889	7,889	0.16	0.34	8,005
Vendor	0.25	11.9	5.24	0.08	0.15	2.90	3.05	0.08	0.80	0.88	—	10,122	10,122	0.36	1.52	10,595
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.48	0.36	4.94	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,306	1,306	0.03	0.06	1,325
Vendor	0.05	2.17	0.96	0.01	0.03	0.53	0.56	0.01	0.15	0.16	—	1,676	1,676	0.06	0.25	1,754
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

3.17. Building Construction (2030) - Unmitigated

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

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

Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	3.78	2.23	42.1	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,630	11,630	0.16	0.10	11,693
Vendor	0.36	15.5	7.00	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,742	13,742	0.50	2.03	14,387
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.62	2.80	36.7	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,792	10,792	0.23	0.48	10,940

Vendor	0.34	16.3	7.19	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,755	13,755	0.50	2.03	14,372
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.56	1.95	25.5	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	7,761	7,761	0.16	0.07	7,795
Vendor	0.25	11.4	5.06	0.08	0.08	2.90	2.98	0.08	0.80	0.88	—	9,820	9,820	0.36	1.45	10,269
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.47	0.36	4.66	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,285	1,285	0.03	0.01	1,290
Vendor	0.05	2.09	0.92	0.01	0.01	0.53	0.54	0.01	0.15	0.16	—	1,626	1,626	0.06	0.24	1,700
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

3.18. Building Construction (2030) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	3.78	2.23	42.1	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,630	11,630	0.16	0.10	11,693
Vendor	0.36	15.5	7.00	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,742	13,742	0.50	2.03	14,387
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.62	2.80	36.7	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,792	10,792	0.23	0.48	10,940
Vendor	0.34	16.3	7.19	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,755	13,755	0.50	2.03	14,372
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.56	1.95	25.5	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	7,761	7,761	0.16	0.07	7,795
Vendor	0.25	11.4	5.06	0.08	0.08	2.90	2.98	0.08	0.80	0.88	—	9,820	9,820	0.36	1.45	10,269
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.47	0.36	4.66	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,285	1,285	0.03	0.01	1,290

Vendor	0.05	2.09	0.92	0.01	0.01	0.53	0.54	0.01	0.15	0.16	—	1,626	1,626	0.06	0.24	1,700
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

3.19. Building Construction (2031) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.08	2.46	1.86	< 0.005	0.09	—	0.09	0.08	—	0.08	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	3.58	2.20	40.1	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,471	11,471	0.16	0.10	11,530
Vendor	0.36	14.9	6.77	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,297	13,297	0.50	2.03	13,940
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.49	2.77	35.3	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,644	10,644	0.23	0.10	10,679
Vendor	0.34	15.8	6.95	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,311	13,311	0.50	2.03	13,928
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.42	1.64	24.3	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	7,654	7,654	0.14	0.07	7,687
Vendor	0.25	11.0	4.89	0.08	0.08	2.90	2.98	0.08	0.80	0.88	—	9,502	9,502	0.36	1.45	9,951
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.44	0.30	4.44	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,267	1,267	0.02	0.01	1,273
Vendor	0.05	2.01	0.89	0.01	0.01	0.53	0.54	0.01	0.15	0.16	—	1,573	1,573	0.06	0.24	1,647
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

3.20. Building Construction (2031) - Mitigated

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

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

Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,712	1,712	0.07	0.01	1,718
Onsite truck	0.00	0.00	0.00	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	0.26	1.86	< 0.005	0.01	—	0.01	0.01	—	0.01	—	283	283	0.01	< 0.005	284
Onsite truck	0.00	0.00	0.00	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	3.58	2.20	40.1	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,471	11,471	0.16	0.10	11,530
Vendor	0.36	14.9	6.77	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,297	13,297	0.50	2.03	13,940
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.49	2.77	35.3	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,644	10,644	0.23	0.10	10,679

Vendor	0.34	15.8	6.95	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	13,311	13,311	0.50	2.03	13,928
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.42	1.64	24.3	0.00	0.00	8.59	8.59	0.00	2.01	2.01	—	7,654	7,654	0.14	0.07	7,687
Vendor	0.25	11.0	4.89	0.08	0.08	2.90	2.98	0.08	0.80	0.88	—	9,502	9,502	0.36	1.45	9,951
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.44	0.30	4.44	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,267	1,267	0.02	0.01	1,273
Vendor	0.05	2.01	0.89	0.01	0.01	0.53	0.54	0.01	0.15	0.16	—	1,573	1,573	0.06	0.24	1,647
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

3.21. Building Construction (2032) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.44	13.5	10.2	0.02	0.49	—	0.49	0.46	—	0.46	—	1,717	1,717	0.07	0.01	1,723
Onsite truck	0.00	0.00	0.00	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	0.08	2.47	1.87	< 0.005	0.09	—	0.09	0.08	—	0.08	—	284	284	0.01	< 0.005	285
Onsite truck	0.00	0.00	0.00	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	3.45	1.82	38.2	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,308	11,308	0.16	0.10	11,363
Vendor	0.36	14.4	6.53	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,859	12,859	0.49	1.92	13,467
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.36	2.36	33.6	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,492	10,492	0.23	0.10	10,527
Vendor	0.34	15.2	6.72	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,873	12,873	0.49	1.92	13,458
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.38	1.64	23.2	0.00	0.00	8.61	8.61	0.00	2.02	2.02	—	7,566	7,566	0.14	0.07	7,597
Vendor	0.25	10.7	4.74	0.08	0.08	2.91	2.99	0.08	0.80	0.88	—	9,215	9,215	0.35	1.37	9,640
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.43	0.30	4.24	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,253	1,253	0.02	0.01	1,258

Vendor	0.05	1.95	0.87	0.01	0.01	0.53	0.54	0.01	0.15	0.16	—	1,526	1,526	0.06	0.23	1,596
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

3.22. Building Construction (2032) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.45	10.2	0.02	0.03	—	0.03	0.03	—	0.03	—	1,717	1,717	0.07	0.01	1,723
Onsite truck	0.00	0.00	0.00	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	0.27	1.87	< 0.005	0.01	—	0.01	0.01	—	0.01	—	284	284	0.01	< 0.005	285
Onsite truck	0.00	0.00	0.00	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	3.45	1.82	38.2	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,308	11,308	0.16	0.10	11,363
Vendor	0.36	14.4	6.53	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,859	12,859	0.49	1.92	13,467
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.36	2.36	33.6	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,492	10,492	0.23	0.10	10,527
Vendor	0.34	15.2	6.72	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,873	12,873	0.49	1.92	13,458
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	2.38	1.64	23.2	0.00	0.00	8.61	8.61	0.00	2.02	2.02	—	7,566	7,566	0.14	0.07	7,597
Vendor	0.25	10.7	4.74	0.08	0.08	2.91	2.99	0.08	0.80	0.88	—	9,215	9,215	0.35	1.37	9,640
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.43	0.30	4.24	0.00	0.00	1.57	1.57	0.00	0.37	0.37	—	1,253	1,253	0.02	0.01	1,258
Vendor	0.05	1.95	0.87	0.01	0.01	0.53	0.54	0.01	0.15	0.16	—	1,526	1,526	0.06	0.23	1,596
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

3.23. Building Construction (2033) - Unmitigated

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

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

Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.62	18.9	14.3	0.02	0.69	—	0.69	0.64	—	0.64	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.12	3.62	2.74	< 0.005	0.13	—	0.13	0.12	—	0.12	—	460	460	0.02	< 0.005	461
Onsite truck	0.00	0.00	0.00	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	0.66	0.50	< 0.005	0.02	—	0.02	0.02	—	0.02	—	76.1	76.1	< 0.005	< 0.005	76.4
Onsite truck	0.00	0.00	0.00	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	3.36	1.78	36.8	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,159	11,159	0.16	0.10	11,212
Vendor	0.36	13.9	6.32	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,436	12,436	0.49	1.81	13,009
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.23	2.32	31.9	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,355	10,355	0.19	0.10	10,389

Vendor	0.34	14.7	6.50	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,450	12,450	0.49	1.81	13,002
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.61	0.43	5.99	0.00	0.00	2.31	2.31	0.00	0.54	0.54	—	1,999	1,999	0.04	0.02	2,008
Vendor	0.06	2.76	1.23	0.02	0.02	0.78	0.80	0.02	0.22	0.24	—	2,386	2,386	0.09	0.35	2,494
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.08	1.09	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	331	331	0.01	< 0.005	332
Vendor	0.01	0.50	0.22	< 0.005	< 0.005	0.14	0.15	< 0.005	0.04	0.04	—	395	395	0.02	0.06	413
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

3.24. Building Construction (2033) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.23	2.03	14.3	0.02	0.04	—	0.04	0.04	—	0.04	—	2,397	2,397	0.10	0.02	2,405
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.04	0.39	2.74	< 0.005	0.01	—	0.01	0.01	—	0.01	—	460	460	0.02	< 0.005	461
Onsite truck	0.00	0.00	0.00	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	0.07	0.50	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	76.1	76.1	< 0.005	< 0.005	76.4
Onsite truck	0.00	0.00	0.00	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	3.36	1.78	36.8	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	11,159	11,159	0.16	0.10	11,212
Vendor	0.36	13.9	6.32	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,436	12,436	0.49	1.81	13,009
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	3.23	2.32	31.9	0.00	0.00	12.1	12.1	0.00	2.85	2.85	—	10,355	10,355	0.19	0.10	10,389
Vendor	0.34	14.7	6.50	0.11	0.11	4.09	4.20	0.11	1.13	1.24	—	12,450	12,450	0.49	1.81	13,002
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.61	0.43	5.99	0.00	0.00	2.31	2.31	0.00	0.54	0.54	—	1,999	1,999	0.04	0.02	2,008
Vendor	0.06	2.76	1.23	0.02	0.02	0.78	0.80	0.02	0.22	0.24	—	2,386	2,386	0.09	0.35	2,494
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.08	1.09	0.00	0.00	0.42	0.42	0.00	0.10	0.10	—	331	331	0.01	< 0.005	332

Vendor	0.01	0.50	0.22	< 0.005	< 0.005	0.14	0.15	< 0.005	0.04	0.04	—	395	395	0.02	0.06	413
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

3.25. Paving (2033) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	13.3	10.6	0.01	0.58	—	0.58	0.54	—	0.54	—	1,511	1,511	0.06	0.01	1,516
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.50	13.3	10.6	0.01	0.58	—	0.58	0.54	—	0.54	—	1,511	1,511	0.06	0.01	1,516
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.21	5.47	4.36	0.01	0.24	—	0.24	0.22	—	0.22	—	621	621	0.03	0.01	623
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.04	1.00	0.80	< 0.005	0.04	—	0.04	0.04	—	0.04	—	103	103	< 0.005	< 0.005	103
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.38	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	114	114	< 0.005	< 0.005	115
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.33	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	106	106	< 0.005	< 0.005	106
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	43.8	43.8	< 0.005	< 0.005	43.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.25	7.25	< 0.005	< 0.005	7.27
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
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

3.26. Paving (2033) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	—	1,511	1,511	0.06	0.01	1,516
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.16	1.93	10.6	0.01	0.03	—	0.03	0.03	—	0.03	—	1,511	1,511	0.06	0.01	1,516
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.79	4.36	0.01	0.01	—	0.01	0.01	—	0.01	—	621	621	0.03	0.01	623
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.14	0.80	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	103	103	< 0.005	< 0.005	103
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
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.38	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	114	114	< 0.005	< 0.005	115
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.33	0.00	0.00	0.12	0.12	0.00	0.03	0.03	—	106	106	< 0.005	< 0.005	106
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.13	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	43.8	43.8	< 0.005	< 0.005	43.9
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	0.02	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	7.25	7.25	< 0.005	< 0.005	7.27
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
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

3.27. Architectural Coating (2033) - Unmitigated

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

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

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.12	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	14.4	14.4	< 0.005	< 0.005	14.4
Architectural Coatings	26.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.02	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	2.39
Architectural Coatings	4.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.65	0.46	6.38	0.00	0.00	2.43	2.43	0.00	0.57	0.57	—	2,071	2,071	0.04	0.02	2,078

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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.67	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	224	224	< 0.005	< 0.005	225
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	37.2	37.2	< 0.005	< 0.005	37.3
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
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

3.28. Architectural Coating (2033) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	134
Architectural Coatings	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	< 0.005	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14.4	14.4	< 0.005	< 0.005	14.4
Architectural Coatings	26.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.01	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.38	2.38	< 0.005	< 0.005	2.39
Architectural Coatings	4.84	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.65	0.46	6.38	0.00	0.00	2.43	2.43	0.00	0.57	0.57	—	2,071	2,071	0.04	0.02	2,078
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.05	0.67	0.00	0.00	0.26	0.26	0.00	0.06	0.06	—	224	224	< 0.005	< 0.005	225
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.12	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	37.2	37.2	< 0.005	< 0.005	37.3

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
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

3.29. Architectural Coating (2034) - Unmitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	1.09	0.96	< 0.005	0.07	—	0.07	0.06	—	0.06	—	134	134	0.01	< 0.005	134
Architectural Coatings	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.33	0.29	< 0.005	0.02	—	0.02	0.02	—	0.02	—	40.0	40.0	< 0.005	< 0.005	40.1

Architectural Coatings	73.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.62	6.62	< 0.005	< 0.005	6.64
Architectural Coatings	13.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.63	0.35	6.99	0.00	0.00	2.43	2.43	0.00	0.57	0.57	—	2,205	2,205	0.03	0.02	2,215
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.62	0.46	6.12	0.00	0.00	2.43	2.43	0.00	0.57	0.57	—	2,046	2,046	0.04	0.02	2,053
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.11	1.77	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	617	617	0.01	0.01	619
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.03	0.02	0.32	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	102	102	< 0.005	< 0.005	103
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
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

3.30. Architectural Coating (2034) - Mitigated

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

Location	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	134
Architectural Coatings	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.65	0.96	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	134	134	0.01	< 0.005	134
Architectural Coatings	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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.19	0.29	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	40.0	40.0	< 0.005	< 0.005	40.1

Architectu Coatings	73.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	0.04	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	6.62	6.62	< 0.005	< 0.005	6.64
Architectu ral Coatings	13.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	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	0.63	0.35	6.99	0.00	0.00	2.43	2.43	0.00	0.57	0.57	—	2,205	2,205	0.03	0.02	2,215
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
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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.62	0.46	6.12	0.00	0.00	2.43	2.43	0.00	0.57	0.57	—	2,046	2,046	0.04	0.02	2,053
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
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
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.18	0.11	1.77	0.00	0.00	0.72	0.72	0.00	0.17	0.17	—	617	617	0.01	0.01	619
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
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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.02	0.32	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	102	102	< 0.005	< 0.005	103

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
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

4. Operations Emissions Details

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	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	6/3/2024	9/27/2024	5.00	85.0	—
Grading	Grading	9/30/2024	7/11/2025	5.00	205	—
Building Construction	Building Construction	7/14/2025	4/8/2033	5.00	2,020	—
Paving	Paving	4/11/2033	11/4/2033	5.00	150	—
Architectural Coating	Architectural Coating	11/7/2033	6/2/2034	5.00	150	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 2	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 2	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 2	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Tier 2	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 2	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Tier 2	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 2	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 2	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 2	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 2	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 2	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 2	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 2	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 2	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 2	1.00	6.00	37.0	0.48

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38

Grading	Graders	Diesel	Tier 4 Final	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Tier 4 Final	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Tier 4 Final	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Tier 4 Final	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Tier 2	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Tier 4 Final	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Tier 4 Final	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Tier 4 Final	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Tier 4 Final	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	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	20.0	11.7	LDA,LDT1,LDT2
Grading	Vendor	—	8.40	HHDT,MHDT

Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1,469	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	581	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	294	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	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	20.0	11.7	LDA,LDT1,LDT2

Grading	Vendor	—	8.40	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	1,469	11.7	LDA,LDT1,LDT2
Building Construction	Vendor	581	8.40	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	11.7	LDA,LDT1,LDT2
Paving	Vendor	—	8.40	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	294	11.7	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	8.40	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	5,316,492	1,772,164	—

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	—	—	128	0.00	—
Grading	—	—	615	0.00	—
Paving	0.00	0.00	0.00	0.00	0.00

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Manufacturing	0.00	0%
Hotel	0.00	0%
Regional Shopping Center	0.00	0%
Government Office Building	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2024	0.00	204	0.03	< 0.005
2025	0.00	204	0.03	< 0.005
2026	0.00	204	0.03	< 0.005
2027	0.00	204	0.03	< 0.005
2028	0.00	204	0.03	< 0.005
2029	0.00	204	0.03	< 0.005
2030	0.00	204	0.03	< 0.005
2031	0.00	204	0.03	< 0.005
2032	0.00	204	0.03	< 0.005
2033	0.00	204	0.03	< 0.005
2034	0.00	204	0.03	< 0.005

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)

8. User Changes to Default Data

Screen	Justification
Land Use	Total acreage for Phase 3 is approximately 134 acres.
Construction: Construction Phases	Construction of Phase 3 would occur from June 204 to June 2034.
Construction: Off-Road Equipment	Default construction equipment list and assuming use of Tier 2 construction equipment.

Dublin Fallon 580 - Buildout Custom Report

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5.18.2. Sequestration

5.18.2.1. Unmitigated

5.18.2.2. Mitigated

8. User Changes to Default Data

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Dublin Fallon 580 - Buildout
Operational Year	2034
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	3.00
Precipitation (days)	14.8
Location	37.706775792032246, -121.84691330316261
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	2022.1.1.20

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Apartments Low Rise	238	Dwelling Unit	8.00	252,280	162,000	—	671	—

Manufacturing	2,888	1000sqft	109	2,888,400	0.00	—	—	—
Hotel	314	Room	17.3	455,928	0.00	—	—	—
Regional Shopping Center	100	1000sqft	3.80	100,000	0.00	—	—	—
General Office Building	100	1000sqft	3.80	100,000	0.00	—	—	—
Parking Lot	34.9	1000sqft	0.70	0.00	0.00	—	—	—
Other Asphalt Surfaces	220	1000sqft	5.00	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-10	Provide End-of-Trip Bicycle Facilities
Transportation	T-31-A*	Locate Project in Area with High Destination Accessibility
Transportation	T-32*	Orient Project Toward Transit, Bicycle, or Pedestrian Facility
Transportation	T-34*	Provide Bike Parking

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	177	85.9	674	1.64	4.19	143	147	4.07	36.2	40.2	3,584	215,892	219,477	375	9.59	233,357
Mit.	177	85.7	672	1.64	4.18	142	146	4.07	36.0	40.0	3,584	215,111	218,695	375	9.56	232,564

% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	1%	< 0.5%	1%	1%	—	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	149	91.4	477	1.55	3.91	143	147	3.86	36.2	40.0	3,584	207,249	210,833	375	10.1	224,688
Mit.	148	91.2	474	1.55	3.90	142	146	3.86	36.0	39.8	3,584	206,512	210,096	375	10.0	223,940
% Reduced	< 0.5%	< 0.5%	1%	< 0.5%	< 0.5%	1%	1%	< 0.5%	1%	1%	—	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	161	86.9	543	1.54	3.85	140	144	3.78	35.6	39.4	3,584	204,489	208,073	375	9.85	221,929
Mit.	161	86.6	540	1.54	3.85	140	143	3.77	35.4	39.2	3,584	203,753	207,338	375	9.82	221,182
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	1%	< 0.5%	1%	1%	—	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	29.4	15.9	99.0	0.28	0.70	25.6	26.3	0.69	6.49	7.18	593	33,856	34,449	62.1	1.63	36,743
Mit.	29.3	15.8	98.6	0.28	0.70	25.5	26.2	0.69	6.46	7.15	593	33,734	34,327	62.1	1.63	36,619
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	1%	1%	< 0.5%	1%	1%	—	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	55.7	42.5	473	1.38	0.70	143	143	0.65	36.2	36.8	—	140,798	140,798	4.72	5.70	142,805
Area	119	3.77	169	0.02	0.47	—	0.47	0.40	—	0.40	0.00	3,652	3,652	0.08	0.01	3,657

Energy	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	68,869	68,869	7.67	0.51	69,213
Water	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Waste	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Total	177	85.9	674	1.64	4.19	143	147	4.07	36.2	40.2	3,584	215,892	219,477	375	9.59	233,357
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	54.0	49.4	443	1.30	0.70	143	143	0.65	36.2	36.8	—	132,825	132,825	5.25	6.20	134,809
Area	92.5	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Energy	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	68,869	68,869	7.67	0.51	69,213
Water	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Waste	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Total	149	91.4	477	1.55	3.91	143	147	3.86	36.2	40.0	3,584	207,249	210,833	375	10.1	224,688
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	53.3	46.5	427	1.30	0.69	140	141	0.65	35.6	36.2	—	132,643	132,643	5.01	5.98	134,630
Area	105	0.76	82.7	0.01	0.14	—	0.14	0.11	—	0.11	0.00	404	404	0.02	< 0.005	405
Energy	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	68,869	68,869	7.67	0.51	69,213
Water	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Waste	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Total	161	86.9	543	1.54	3.85	140	144	3.78	35.6	39.4	3,584	204,489	208,073	375	9.85	221,929
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.73	8.49	77.9	0.24	0.13	25.6	25.7	0.12	6.49	6.61	—	21,960	21,960	0.83	0.99	22,290
Area	19.2	0.14	15.1	< 0.005	0.03	—	0.03	0.02	—	0.02	0.00	66.9	66.9	< 0.005	< 0.005	67.1
Energy	0.40	7.24	5.99	0.04	0.55	—	0.55	0.55	—	0.55	—	11,402	11,402	1.27	0.08	11,459
Water	—	—	—	—	—	—	—	—	—	—	225	426	651	23.2	0.56	1,396

Waste	—	—	—	—	—	—	—	—	—	—	368	0.00	368	36.8	0.00	1,289
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	243
Total	29.4	15.9	99.0	0.28	0.70	25.6	26.3	0.69	6.49	7.18	593	33,856	34,449	62.1	1.63	36,743

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	55.4	42.3	470	1.37	0.69	142	143	0.65	36.0	36.6	—	140,016	140,016	4.69	5.67	142,013
Area	119	3.77	169	0.02	0.47	—	0.47	0.40	—	0.40	0.00	3,652	3,652	0.08	0.01	3,657
Energy	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	68,869	68,869	7.67	0.51	69,213
Water	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Waste	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Total	177	85.7	672	1.64	4.18	142	146	4.07	36.0	40.0	3,584	215,111	218,695	375	9.56	232,564
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	53.7	49.2	440	1.29	0.69	142	143	0.65	36.0	36.6	—	132,087	132,087	5.22	6.17	134,061
Area	92.5	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Energy	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	68,869	68,869	7.67	0.51	69,213
Water	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Waste	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Total	148	91.2	474	1.55	3.90	142	146	3.86	36.0	39.8	3,584	206,512	210,096	375	10.0	223,940
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Mobile	53.0	46.2	425	1.29	0.69	140	140	0.64	35.4	36.0	—	131,907	131,907	4.98	5.94	133,883
Area	105	0.76	82.7	0.01	0.14	—	0.14	0.11	—	0.11	0.00	404	404	0.02	< 0.005	405
Energy	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	68,869	68,869	7.67	0.51	69,213
Water	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Waste	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Total	161	86.6	540	1.54	3.85	140	143	3.77	35.4	39.2	3,584	203,753	207,338	375	9.82	221,182
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.67	8.44	77.5	0.24	0.13	25.5	25.6	0.12	6.46	6.58	—	21,839	21,839	0.82	0.98	22,166
Area	19.2	0.14	15.1	< 0.005	0.03	—	0.03	0.02	—	0.02	0.00	66.9	66.9	< 0.005	< 0.005	67.1
Energy	0.40	7.24	5.99	0.04	0.55	—	0.55	0.55	—	0.55	—	11,402	11,402	1.27	0.08	11,459
Water	—	—	—	—	—	—	—	—	—	—	225	426	651	23.2	0.56	1,396
Waste	—	—	—	—	—	—	—	—	—	—	368	0.00	368	36.8	0.00	1,289
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	243
Total	29.3	15.8	98.6	0.28	0.70	25.5	26.2	0.69	6.46	7.15	593	33,734	34,327	62.1	1.63	36,619

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	3.92	2.94	32.5	0.09	0.05	9.73	9.78	0.04	2.47	2.51	—	9,617	9,617	0.33	0.39	9,755

Manufactu	34.5	27.5	310	0.92	0.46	95.3	95.8	0.43	24.2	24.6	—	93,852	93,852	3.02	3.73	95,166
Hotel	6.31	5.03	56.8	0.17	0.08	17.4	17.5	0.08	4.42	4.50	—	17,162	17,162	0.55	0.68	17,402
Regional Shopping Center	8.27	4.85	48.7	0.12	0.07	12.6	12.7	0.06	3.21	3.27	—	12,751	12,751	0.58	0.60	12,962
General Office Building	2.73	2.17	24.5	0.07	0.04	7.53	7.57	0.03	1.91	1.94	—	7,415	7,415	0.24	0.29	7,519
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	55.7	42.5	473	1.38	0.70	143	143	0.65	36.2	36.8	—	140,798	140,798	4.72	5.70	142,805
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	3.80	3.42	30.6	0.09	0.05	9.73	9.78	0.04	2.47	2.51	—	9,073	9,073	0.37	0.43	9,210
Manufacturing	33.5	32.0	288	0.87	0.46	95.3	95.8	0.43	24.2	24.6	—	88,519	88,519	3.34	4.05	89,813
Hotel	6.12	5.85	52.6	0.16	0.08	17.4	17.5	0.08	4.42	4.50	—	16,187	16,187	0.61	0.74	16,424
Regional Shopping Center	8.01	5.64	49.2	0.12	0.07	12.6	12.7	0.06	3.21	3.27	—	12,052	12,052	0.67	0.66	12,266
General Office Building	2.64	2.53	22.7	0.07	0.04	7.53	7.57	0.03	1.91	1.94	—	6,994	6,994	0.26	0.32	7,096
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	54.0	49.4	443	1.30	0.70	143	143	0.65	36.2	36.8	—	132,825	132,825	5.25	6.20	134,809

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.69	0.59	5.40	0.02	0.01	1.76	1.77	0.01	0.45	0.45	—	1,510	1,510	0.06	0.07	1,533
Manufacturing	6.03	5.52	51.0	0.16	0.08	17.2	17.3	0.08	4.37	4.45	—	14,732	14,732	0.53	0.65	14,948
Hotel	1.10	1.01	9.33	0.03	0.02	3.15	3.17	0.01	0.80	0.81	—	2,694	2,694	0.10	0.12	2,733
Regional Shopping Center	1.43	0.93	8.13	0.02	0.01	2.11	2.12	0.01	0.54	0.55	—	1,861	1,861	0.10	0.10	1,895
General Office Building	0.48	0.44	4.03	0.01	0.01	1.36	1.37	0.01	0.35	0.35	—	1,164	1,164	0.04	0.05	1,181
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	9.73	8.49	77.9	0.24	0.13	25.6	25.7	0.12	6.49	6.61	—	21,960	21,960	0.83	0.99	22,290

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	3.92	2.94	32.5	0.09	0.05	9.73	9.78	0.04	2.47	2.51	—	9,617	9,617	0.33	0.39	9,755
Manufacturing	34.3	27.4	309	0.91	0.46	94.7	95.2	0.43	24.0	24.5	—	93,293	93,293	3.00	3.71	94,599
Hotel	6.27	5.00	56.4	0.17	0.08	17.3	17.4	0.08	4.39	4.47	—	17,060	17,060	0.55	0.68	17,299

Regional Shopping Center	8.22	4.82	48.4	0.12	0.07	12.6	12.6	0.06	3.19	3.25	—	12,675	12,675	0.57	0.60	12,885
General Office Building	2.71	2.16	24.4	0.07	0.04	7.48	7.52	0.03	1.90	1.93	—	7,371	7,371	0.24	0.29	7,474
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	55.4	42.3	470	1.37	0.69	142	143	0.65	36.0	36.6	—	140,016	140,016	4.69	5.67	142,013
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	3.80	3.42	30.6	0.09	0.05	9.73	9.78	0.04	2.47	2.51	—	9,073	9,073	0.37	0.43	9,210
Manufacturing	33.3	31.8	286	0.86	0.46	94.7	95.2	0.43	24.0	24.5	—	87,992	87,992	3.32	4.03	89,278
Hotel	6.08	5.82	52.3	0.16	0.08	17.3	17.4	0.08	4.39	4.47	—	16,090	16,090	0.61	0.74	16,326
Regional Shopping Center	7.96	5.61	48.9	0.12	0.07	12.6	12.6	0.06	3.19	3.25	—	11,980	11,980	0.67	0.66	12,193
General Office Building	2.63	2.51	22.6	0.07	0.04	7.48	7.52	0.03	1.90	1.93	—	6,952	6,952	0.26	0.32	7,054
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	53.7	49.2	440	1.29	0.69	142	143	0.65	36.0	36.6	—	132,087	132,087	5.22	6.17	134,061
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	0.69	0.59	5.40	0.02	0.01	1.76	1.77	0.01	0.45	0.45	—	1,510	1,510	0.06	0.07	1,533
Manufacturing	6.00	5.48	50.7	0.16	0.08	17.1	17.2	0.08	4.34	4.42	—	14,644	14,644	0.53	0.65	14,859
Hotel	1.10	1.00	9.28	0.03	0.02	3.13	3.15	0.01	0.79	0.81	—	2,678	2,678	0.10	0.12	2,717
Regional Shopping Center	1.42	0.93	8.08	0.02	0.01	2.10	2.11	0.01	0.53	0.54	—	1,850	1,850	0.10	0.10	1,883
General Office Building	0.47	0.43	4.01	0.01	0.01	1.35	1.36	0.01	0.34	0.35	—	1,157	1,157	0.04	0.05	1,174
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	9.67	8.44	77.5	0.24	0.13	25.5	25.6	0.12	6.46	6.58	—	21,839	21,839	0.82	0.98	22,166

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	499	499	0.08	0.01	504
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	17,611	17,611	2.85	0.35	17,785
Hotel	—	—	—	—	—	—	—	—	—	—	—	1,684	1,684	0.27	0.03	1,701

Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	478	478	0.08	0.01	482
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1,183	1,183	0.19	0.02	1,195
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	14.9	14.9	< 0.005	< 0.005	15.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	21,470	21,470	3.47	0.42	21,682
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	499	499	0.08	0.01	504
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	17,611	17,611	2.85	0.35	17,785
Hotel	—	—	—	—	—	—	—	—	—	—	—	1,684	1,684	0.27	0.03	1,701
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	478	478	0.08	0.01	482
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1,183	1,183	0.19	0.02	1,195
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	14.9	14.9	< 0.005	< 0.005	15.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	21,470	21,470	3.47	0.42	21,682
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartments	—	—	—	—	—	—	—	—	—	—	—	82.6	82.6	0.01	< 0.005	83.4
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	2,916	2,916	0.47	0.06	2,945
Hotel	—	—	—	—	—	—	—	—	—	—	—	279	279	0.05	0.01	282
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	79.8
General Office Building	—	—	—	—	—	—	—	—	—	—	—	196	196	0.03	< 0.005	198
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	2.47	2.47	< 0.005	< 0.005	2.50
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3,555	3,555	0.58	0.07	3,590

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	499	499	0.08	0.01	504
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	17,611	17,611	2.85	0.35	17,785
Hotel	—	—	—	—	—	—	—	—	—	—	—	1,684	1,684	0.27	0.03	1,701
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	478	478	0.08	0.01	482

General Office Building	—	—	—	—	—	—	—	—	—	—	—	1,183	1,183	0.19	0.02	1,195
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	14.9	14.9	< 0.005	< 0.005	15.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	21,470	21,470	3.47	0.42	21,682
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	499	499	0.08	0.01	504
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	17,611	17,611	2.85	0.35	17,785
Hotel	—	—	—	—	—	—	—	—	—	—	—	1,684	1,684	0.27	0.03	1,701
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	478	478	0.08	0.01	482
General Office Building	—	—	—	—	—	—	—	—	—	—	—	1,183	1,183	0.19	0.02	1,195
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	14.9	14.9	< 0.005	< 0.005	15.1
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	21,470	21,470	3.47	0.42	21,682
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	82.6	82.6	0.01	< 0.005	83.4

Manufacturing	—	—	—	—	—	—	—	—	—	—	—	2,916	2,916	0.47	0.06	2,945
Hotel	—	—	—	—	—	—	—	—	—	—	—	279	279	0.05	0.01	282
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	79.1	79.1	0.01	< 0.005	79.8
General Office Building	—	—	—	—	—	—	—	—	—	—	—	196	196	0.03	< 0.005	198
Parking Lot	—	—	—	—	—	—	—	—	—	—	—	2.47	2.47	< 0.005	< 0.005	2.50
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	3,555	3,555	0.58	0.07	3,590

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,522	1,522	0.13	< 0.005	1,527
Manufacturing	1.87	34.0	28.5	0.20	2.58	—	2.58	2.58	—	2.58	—	40,535	40,535	3.59	0.08	40,648
Hotel	0.20	3.69	3.10	0.02	0.28	—	0.28	0.28	—	0.28	—	4,398	4,398	0.39	0.01	4,410
Regional Shopping Center	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	183	183	0.02	< 0.005	183
General Office Building	0.04	0.64	0.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	761	761	0.07	< 0.005	763

Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	47,399	47,399	4.19	0.09	47,531
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,522	1,522	0.13	< 0.005	1,527
Manufacturing	1.87	34.0	28.5	0.20	2.58	—	2.58	2.58	—	2.58	—	40,535	40,535	3.59	0.08	40,648
Hotel	0.20	3.69	3.10	0.02	0.28	—	0.28	0.28	—	0.28	—	4,398	4,398	0.39	0.01	4,410
Regional Shopping Center	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	183	183	0.02	< 0.005	183
General Office Building	0.04	0.64	0.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	761	761	0.07	< 0.005	763
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	47,399	47,399	4.19	0.09	47,531
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.01	0.22	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	252	252	0.02	< 0.005	253
Manufacturing	0.34	6.20	5.21	0.04	0.47	—	0.47	0.47	—	0.47	—	6,711	6,711	0.59	0.01	6,730
Hotel	0.04	0.67	0.57	< 0.005	0.05	—	0.05	0.05	—	0.05	—	728	728	0.06	< 0.005	730

Regional Shopping Center	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	30.3
General Office Building	0.01	0.12	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	126	126	0.01	< 0.005	126
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	0.40	7.24	5.99	0.04	0.55	—	0.55	0.55	—	0.55	—	7,847	7,847	0.69	0.01	7,869

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,522	1,522	0.13	< 0.005	1,527
Manufacturing	1.87	34.0	28.5	0.20	2.58	—	2.58	2.58	—	2.58	—	40,535	40,535	3.59	0.08	40,648
Hotel	0.20	3.69	3.10	0.02	0.28	—	0.28	0.28	—	0.28	—	4,398	4,398	0.39	0.01	4,410
Regional Shopping Center	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	183	183	0.02	< 0.005	183
General Office Building	0.04	0.64	0.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	761	761	0.07	< 0.005	763
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00

Other 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
Total	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	47,399	47,399	4.19	0.09	47,531
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.07	1.20	0.51	0.01	0.10	—	0.10	0.10	—	0.10	—	1,522	1,522	0.13	< 0.005	1,527
Manufacturing	1.87	34.0	28.5	0.20	2.58	—	2.58	2.58	—	2.58	—	40,535	40,535	3.59	0.08	40,648
Hotel	0.20	3.69	3.10	0.02	0.28	—	0.28	0.28	—	0.28	—	4,398	4,398	0.39	0.01	4,410
Regional Shopping Center	0.01	0.15	0.13	< 0.005	0.01	—	0.01	0.01	—	0.01	—	183	183	0.02	< 0.005	183
General Office Building	0.04	0.64	0.54	< 0.005	0.05	—	0.05	0.05	—	0.05	—	761	761	0.07	< 0.005	763
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	2.18	39.6	32.8	0.24	3.02	—	3.02	3.02	—	3.02	—	47,399	47,399	4.19	0.09	47,531
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	0.01	0.22	0.09	< 0.005	0.02	—	0.02	0.02	—	0.02	—	252	252	0.02	< 0.005	253
Manufacturing	0.34	6.20	5.21	0.04	0.47	—	0.47	0.47	—	0.47	—	6,711	6,711	0.59	0.01	6,730
Hotel	0.04	0.67	0.57	< 0.005	0.05	—	0.05	0.05	—	0.05	—	728	728	0.06	< 0.005	730
Regional Shopping Center	< 0.005	0.03	0.02	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	30.2	30.2	< 0.005	< 0.005	30.3

General Office Building	0.01	0.12	0.10	< 0.005	0.01	—	0.01	0.01	—	0.01	—	126	126	0.01	< 0.005	126
Parking Lot	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	0.00
Other 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
Total	0.40	7.24	5.99	0.04	0.55	—	0.55	0.55	—	0.55	—	7,847	7,847	0.69	0.01	7,869

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.14	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Consumer Products	81.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	11.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	26.5	1.42	168	0.01	0.28	—	0.28	0.21	—	0.21	—	670	670	0.03	0.01	672
Total	119	3.77	169	0.02	0.47	—	0.47	0.40	—	0.40	0.00	3,652	3,652	0.08	0.01	3,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.14	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985

Consumer Products	81.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	11.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	92.5	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	12.2	12.2	< 0.005	< 0.005	12.2
Consumer Products	14.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.39	0.13	15.1	< 0.005	0.03	—	0.03	0.02	—	0.02	—	54.7	54.7	< 0.005	< 0.005	54.9
Total	19.2	0.14	15.1	< 0.005	0.03	—	0.03	0.02	—	0.02	0.00	66.9	66.9	< 0.005	< 0.005	67.1

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.14	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Consumer Products	81.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	11.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Landscape Equipmen	26.5	1.42	168	0.01	0.28	—	0.28	0.21	—	0.21	—	670	670	0.03	0.01	672
Total	119	3.77	169	0.02	0.47	—	0.47	0.40	—	0.40	0.00	3,652	3,652	0.08	0.01	3,657
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.14	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Consumer Products	81.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	11.1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	92.5	2.35	1.00	0.01	0.19	—	0.19	0.19	—	0.19	0.00	2,982	2,982	0.06	0.01	2,985
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	0.01	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	12.2	12.2	< 0.005	< 0.005	12.2
Consumer Products	14.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	2.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	2.39	0.13	15.1	< 0.005	0.03	—	0.03	0.02	—	0.02	—	54.7	54.7	< 0.005	< 0.005	54.9
Total	19.2	0.14	15.1	< 0.005	0.03	—	0.03	0.02	—	0.02	0.00	66.9	66.9	< 0.005	< 0.005	67.1

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	16.2	36.8	53.0	1.67	0.04	107
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,280	2,417	3,697	132	3.17	7,931
Hotel	—	—	—	—	—	—	—	—	—	—	15.3	28.8	44.1	1.57	0.04	94.6
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	14.2	26.8	41.0	1.46	0.04	88.0
General Office Building	—	—	—	—	—	—	—	—	—	—	34.1	64.3	98.4	3.50	0.08	211
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	16.2	36.8	53.0	1.67	0.04	107
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,280	2,417	3,697	132	3.17	7,931
Hotel	—	—	—	—	—	—	—	—	—	—	15.3	28.8	44.1	1.57	0.04	94.6
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	14.2	26.8	41.0	1.46	0.04	88.0

General Office Building	—	—	—	—	—	—	—	—	—	—	34.1	64.3	98.4	3.50	0.08	211
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	2.68	6.09	8.77	0.28	0.01	17.7
Manufacturing	—	—	—	—	—	—	—	—	—	—	212	400	612	21.8	0.52	1,313
Hotel	—	—	—	—	—	—	—	—	—	—	2.53	4.77	7.30	0.26	0.01	15.7
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	2.35	4.44	6.79	0.24	0.01	14.6
General Office Building	—	—	—	—	—	—	—	—	—	—	5.64	10.6	16.3	0.58	0.01	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	225	426	651	23.2	0.56	1,396

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	16.2	36.8	53.0	1.67	0.04	107
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,280	2,417	3,697	132	3.17	7,931
Hotel	—	—	—	—	—	—	—	—	—	—	15.3	28.8	44.1	1.57	0.04	94.6
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	14.2	26.8	41.0	1.46	0.04	88.0
General Office Building	—	—	—	—	—	—	—	—	—	—	34.1	64.3	98.4	3.50	0.08	211
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	16.2	36.8	53.0	1.67	0.04	107
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,280	2,417	3,697	132	3.17	7,931
Hotel	—	—	—	—	—	—	—	—	—	—	15.3	28.8	44.1	1.57	0.04	94.6
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	14.2	26.8	41.0	1.46	0.04	88.0

General Office Building	—	—	—	—	—	—	—	—	—	—	34.1	64.3	98.4	3.50	0.08	211
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	1,360	2,574	3,934	140	3.36	8,432
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	2.68	6.09	8.77	0.28	0.01	17.7
Manufacturing	—	—	—	—	—	—	—	—	—	—	212	400	612	21.8	0.52	1,313
Hotel	—	—	—	—	—	—	—	—	—	—	2.53	4.77	7.30	0.26	0.01	15.7
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	2.35	4.44	6.79	0.24	0.01	14.6
General Office Building	—	—	—	—	—	—	—	—	—	—	5.64	10.6	16.3	0.58	0.01	34.9
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	225	426	651	23.2	0.56	1,396

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	94.8	0.00	94.8	9.48	0.00	332
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,930	0.00	1,930	193	0.00	6,753
Hotel	—	—	—	—	—	—	—	—	—	—	92.7	0.00	92.7	9.26	0.00	324
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	56.6	0.00	56.6	5.66	0.00	198
General Office Building	—	—	—	—	—	—	—	—	—	—	50.1	0.00	50.1	5.01	0.00	175
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	94.8	0.00	94.8	9.48	0.00	332
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,930	0.00	1,930	193	0.00	6,753
Hotel	—	—	—	—	—	—	—	—	—	—	92.7	0.00	92.7	9.26	0.00	324
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	56.6	0.00	56.6	5.66	0.00	198

General Office Building	—	—	—	—	—	—	—	—	—	—	50.1	0.00	50.1	5.01	0.00	175
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	15.7	0.00	15.7	1.57	0.00	54.9
Manufacturing	—	—	—	—	—	—	—	—	—	—	320	0.00	320	31.9	0.00	1,118
Hotel	—	—	—	—	—	—	—	—	—	—	15.3	0.00	15.3	1.53	0.00	53.7
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	9.37	0.00	9.37	0.94	0.00	32.8
General Office Building	—	—	—	—	—	—	—	—	—	—	8.30	0.00	8.30	0.83	0.00	29.0
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	368	0.00	368	36.8	0.00	1,289

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

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	94.8	0.00	94.8	9.48	0.00	332
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,930	0.00	1,930	193	0.00	6,753
Hotel	—	—	—	—	—	—	—	—	—	—	92.7	0.00	92.7	9.26	0.00	324
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	56.6	0.00	56.6	5.66	0.00	198
General Office Building	—	—	—	—	—	—	—	—	—	—	50.1	0.00	50.1	5.01	0.00	175
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	94.8	0.00	94.8	9.48	0.00	332
Manufacturing	—	—	—	—	—	—	—	—	—	—	1,930	0.00	1,930	193	0.00	6,753
Hotel	—	—	—	—	—	—	—	—	—	—	92.7	0.00	92.7	9.26	0.00	324
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	56.6	0.00	56.6	5.66	0.00	198

General Office Building	—	—	—	—	—	—	—	—	—	—	50.1	0.00	50.1	5.01	0.00	175
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	2,224	0.00	2,224	222	0.00	7,783
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	15.7	0.00	15.7	1.57	0.00	54.9
Manufacturing	—	—	—	—	—	—	—	—	—	—	320	0.00	320	31.9	0.00	1,118
Hotel	—	—	—	—	—	—	—	—	—	—	15.3	0.00	15.3	1.53	0.00	53.7
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	9.37	0.00	9.37	0.94	0.00	32.8
General Office Building	—	—	—	—	—	—	—	—	—	—	8.30	0.00	8.30	0.83	0.00	29.0
Parking Lot	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Other Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	—	—	—	—	—	—	—	—	—	—	368	0.00	368	36.8	0.00	1,289

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.81
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	752
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	713
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.81
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	752
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	713
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Apartment Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30
Manufactu ring	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	124
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	118
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	243

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	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartment s Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.81
Manufactu ring	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	752
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	713
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.81
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	752
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	713
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.48
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.24
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1,467
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.30
Manufacturing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	124
Hotel	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	118
Regional Shopping Center	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.08
General Office Building	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.04
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	243

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

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

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

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

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

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

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

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

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

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

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

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

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

5.9. 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
Apartments Low Rise	1,604	1,604	1,604	585,504	13,779	13,779	13,779	5,029,317
Manufacturing	13,720	13,720	13,720	5,007,764	134,922	134,922	134,922	49,246,536
Hotel	2,509	2,509	2,509	915,734	24,672	24,672	24,672	9,005,362
Regional Shopping Center	3,701	3,701	3,701	1,350,865	16,006	17,899	17,899	6,039,492

General Office Building	1,084	1,084	1,084	395,660	10,660	10,660	10,660	3,890,935
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other 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
Apartments Low Rise	1,604	1,604	1,604	585,504	13,779	13,779	13,779	5,029,317
Manufacturing	13,638	13,638	13,638	4,977,929	134,118	134,118	134,118	48,953,139
Hotel	2,494	2,494	2,494	910,278	24,525	24,525	24,525	8,951,711
Regional Shopping Center	3,679	3,679	3,679	1,342,817	15,910	17,792	17,792	6,003,511
General Office Building	1,078	1,078	1,078	393,303	10,597	10,597	10,597	3,867,754
Parking Lot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other 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

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	121
Propane Fireplaces	0

Electric Fireplaces	0
No Fireplaces	117
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	121
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	117
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
510867	170,289	5,316,492	1,772,164	14,898

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)
Apartments Low Rise	892,616	204	0.0330	0.0040	4,750,315
Manufacturing	31,512,867	204	0.0330	0.0040	126,480,455
Hotel	3,013,606	204	0.0330	0.0040	13,722,093
Regional Shopping Center	854,497	204	0.0330	0.0040	569,857
General Office Building	2,116,863	204	0.0330	0.0040	2,375,029
Parking Lot	26,711	204	0.0330	0.0040	0.00
Other 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)
Apartments Low Rise	892,616	204	0.0330	0.0040	4,750,315
Manufacturing	31,512,867	204	0.0330	0.0040	126,480,455
Hotel	3,013,606	204	0.0330	0.0040	13,722,093

Regional Shopping Center	854,497	204	0.0330	0.0040	569,857
General Office Building	2,116,863	204	0.0330	0.0040	2,375,029
Parking Lot	26,711	204	0.0330	0.0040	0.00
Other 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)
Apartments Low Rise	8,451,582	2,249,539
Manufacturing	667,942,500	0.00
Hotel	7,965,166	0.00
Regional Shopping Center	7,407,252	0.00
General Office Building	17,773,375	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Apartments Low Rise	8,451,582	2,249,539
Manufacturing	667,942,500	0.00
Hotel	7,965,166	0.00
Regional Shopping Center	7,407,252	0.00
General Office Building	17,773,375	0.00
Parking Lot	0.00	0.00
Other Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Low Rise	176	—
Manufacturing	3,582	—
Hotel	172	—
Regional Shopping Center	105	—
General Office Building	93.0	—
Parking Lot	0.00	—
Other Asphalt Surfaces	0.00	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Apartments Low Rise	176	—
Manufacturing	3,582	—
Hotel	172	—
Regional Shopping Center	105	—
General Office Building	93.0	—
Parking Lot	0.00	—
Other 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

Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0
Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Regional Shopping Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Manufacturing	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

Hotel	Household refrigerators and/or freezers	R-134a	1,430	0.00	0.60	0.00	1.00
Hotel	Other commercial A/C and heat pumps	R-410A	2,088	1.80	4.00	4.00	18.0
Hotel	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Regional Shopping Center	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Regional Shopping Center	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
General Office Building	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
General Office Building	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

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

5.15.2. 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)

8. User Changes to Default Data

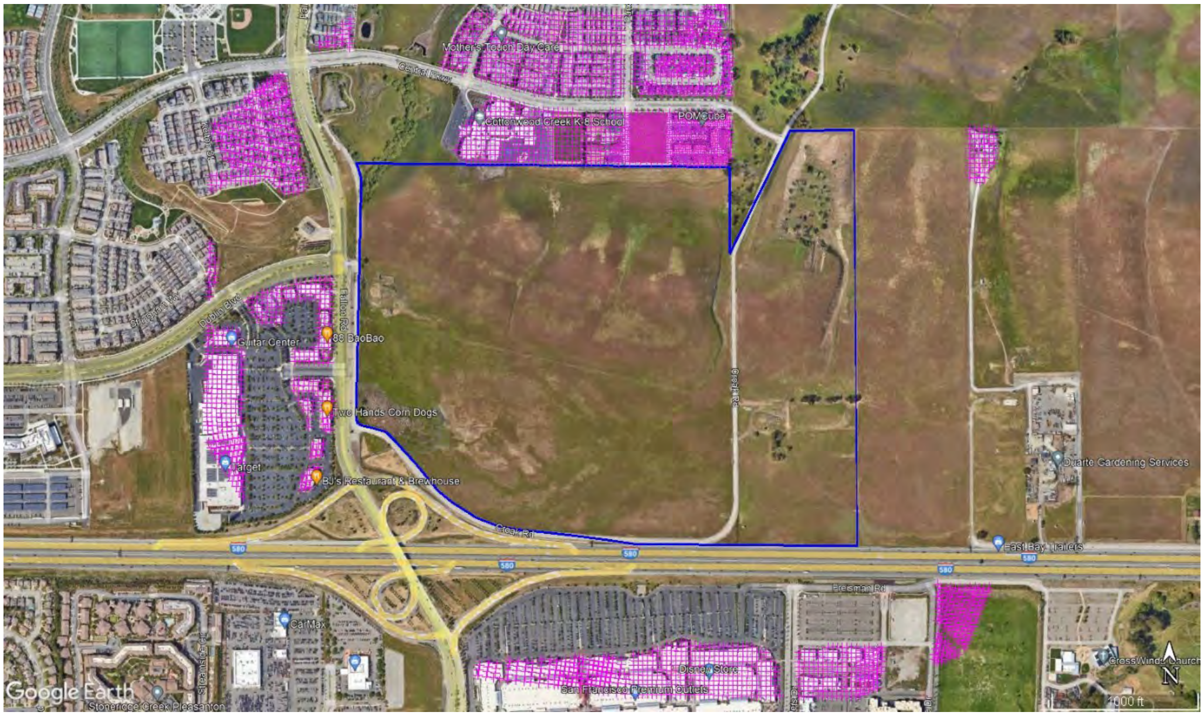
Screen	Justification
Land Use	The total site acreage is 192. Other asphalt surfaces include non-parking asphalt and hardscape.
Operations: Vehicle Data	Trip gen is 22,618 ADT.
Operations: Hearths	Assuming that the proposed project would not include any hearths.

Appendix B

Model Snap Shots

Project Location

Receptor Grid



Unmitigated Cancer Risk – Residential Receptor

Unmitigated Chronic Hazard Index – Residential Receptor

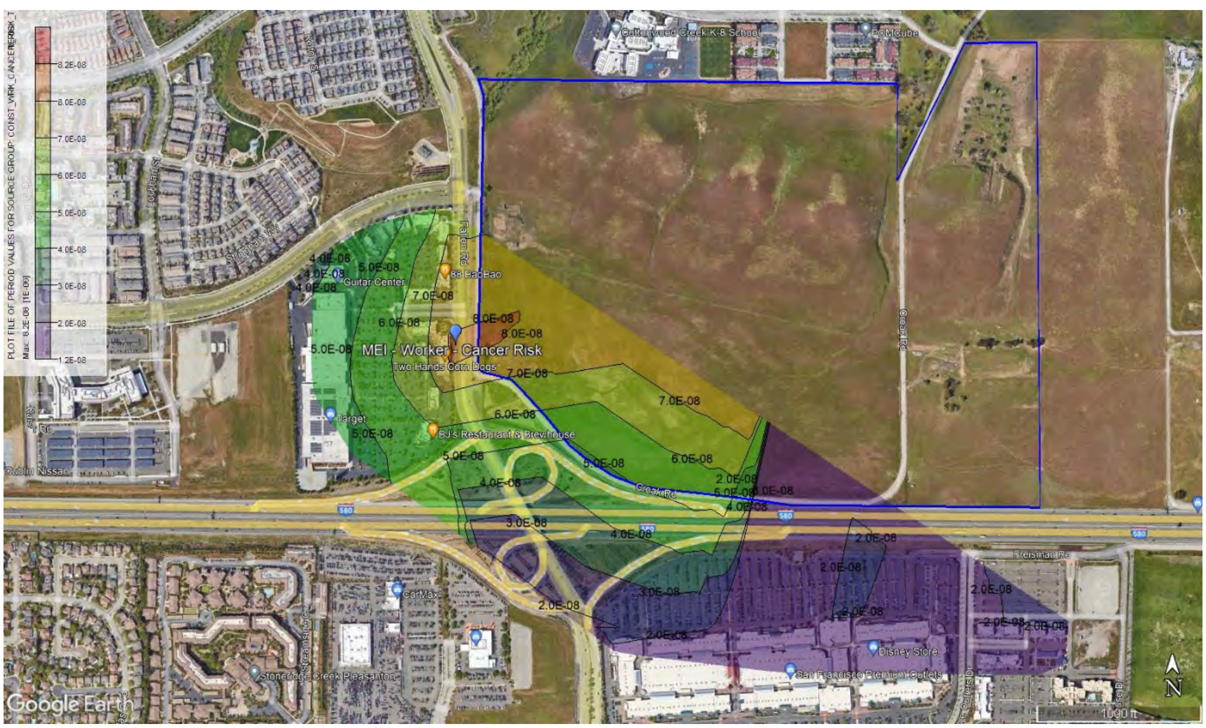
Unmitigated $PM_{2.5}$ Concentrations – Residential Receptor

Unmitigated Cancer Risk – School Receptor

Unmitigated Chronic Hazard Index – School Receptor

Unmitigated $PM_{2.5}$ Concentrations – School Receptor

Unmitigated Cancer Risk – Worker Receptor



Unmitigated Chronic Hazard Index – Worker Receptor

Unmitigated $PM_{2.5}$ Concentrations – Worker Receptor

Mitigated Cancer Risk – Residential Receptor

Mitigated Chronic Hazard Index – Residential Receptor

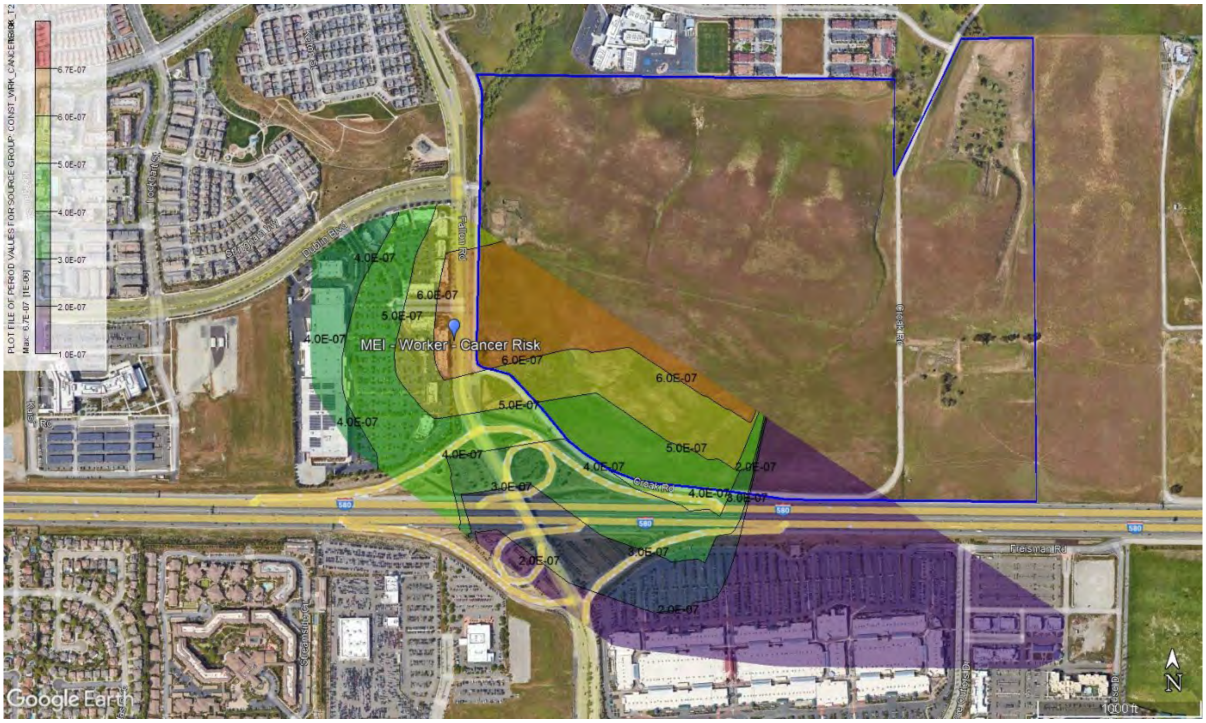
Mitigated $PM_{2.5}$ Concentrations – Residential Receptor

Mitigated Cancer Risk – School Receptor

Mitigated Chronic Hazard Index – School Receptor

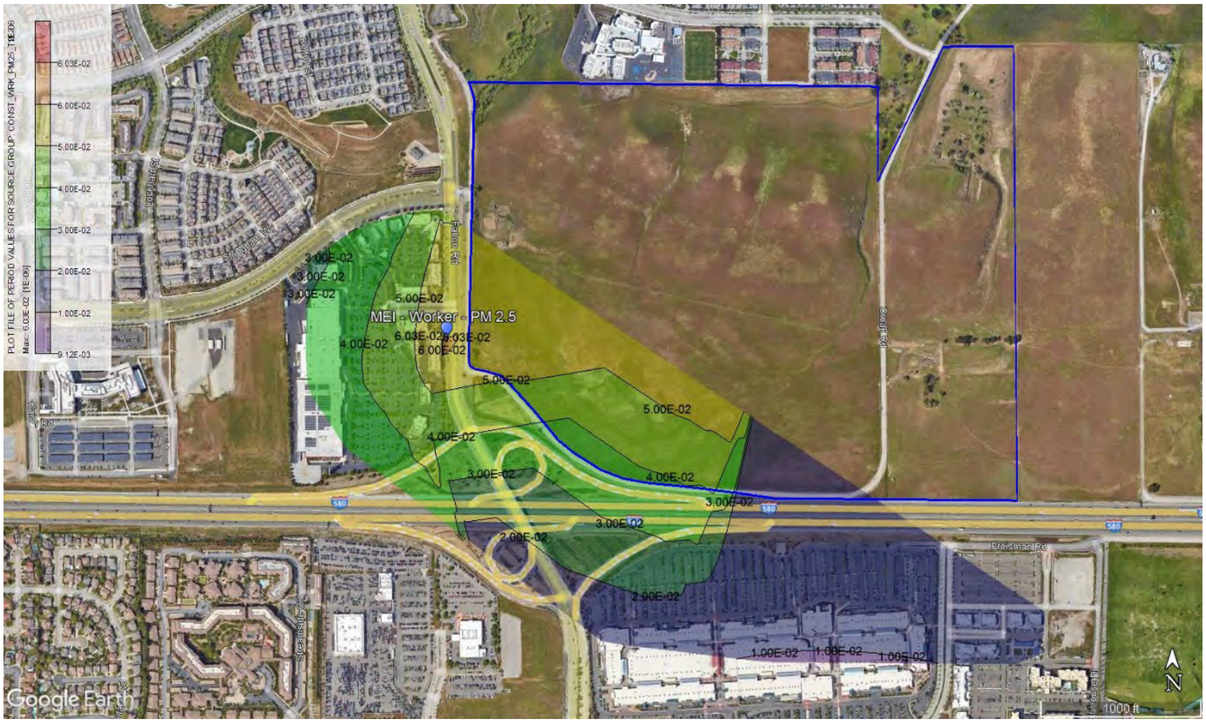
Mitigated $PM_{2.5}$ Concentrations – School Receptor

Mitigated Cancer Risk – Worker Receptor



Mitigated Chronic Hazard Index – Worker Receptor

Mitigated $PM_{2.5}$ Concentrations – Worker Receptor



Construction MEI (Sensitive) - Cancer Risk (in a Million) HARP Rec #: 1313 X: 602011.31 Y: 4174109.3			
Unmitigated	T2L3	T4	0
19.20	2.90	1.80	0.00
MEI (Sensitive) - Chronic Hazard Index HARP Rec #: 1313 X: 602011.31 Y: 4174109.3			
Unmitigated	T2L3	T4	0
5.37E-02	3.08E-03	2.03E-03	0.00E+00
MEI (Sensitive) - Acute Hazard Index HARP Rec #: NA X: NA Y: NA			
Unmitigated	T2L3	T4	0
0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEI (Sensitive) - PM 2.5 HARP Rec #: 1313 X: 602011.31 Y: 4174109.3			
Unmitigated	T2L3	T4	0
0.268	0.062	0.041	0.000

Construction MEI (Worker) - Cancer Risk (in a Million) HARP Rec #: 743 X: 601279.87 Y: 4173612.26			
Unmitigated	T2L3	T4	0
1.36	0.21	0.13	0.00
MEI (Worker) - Chronic Hazard Index HARP Rec #: 743 X: 601279.87 Y: 4173612.26			
Unmitigated	T2L3	T4	0
5.21E-02	2.99E-03	1.97E-03	0.00E+00
MEI (Worker) - Acute Hazard Index HARP Rec #: NA X: NA Y: NA			
Unmitigated	T2L3	T4	0
0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEI (Worker) - PM 2.5 HARP Rec #: 743 X: 601279.87 Y: 4173612.26			
Unmitigated	T2L3	T4	0
0.261	0.060	0.040	0.000

Construction MEI (School) - Cancer Risk (in a Million) HARP Rec #: 25 X: 601790.77 Y: 4174114.08			
Unmitigated	T2L3	T4	0
17.52	2.65	1.69	0.00
MEI (School) - Chronic Hazard Index HARP Rec #: 25 X: 601790.77 Y: 4174114.08			
Unmitigated	T2L3	T4	0
4.46E-02	2.56E-03	1.69E-03	0.00E+00
MEI (School) - Acute Hazard Index HARP Rec #: NA X: NA Y: NA			
Unmitigated	T2L3	T4	0
0.00E+00	0.00E+00	0.00E+00	0.00E+00
MEI (School) - PM 2.5 HARP Rec #: 25 X: 601790.77 Y: 4174114.08			
Unmitigated	T2L3	T4	0
0.2231	0.0517	0.0340	0.0000

	Zone	10	Process Coordinates											
	Datum	WGS 1984												
	KML File Name	DUB2101.04 Project MEI									Sensitive			
Description	**Receptor Type**	**Model Type**	**UTM X**	**UTM Y**	**Latitude**	**Longitude**			Unmitigated	T2	T2L3	T4	**Row**
Construction	Sensitive	Cancer Risk	602011.31	4174109.30	37.70855235	-121.8426899		**Col**	2	3	4	5	4
Construction	Sensitive	Chronic HI	602011.31	4174109.30	37.70855235	-121.8426899			2	3	4	5	7
Construction	Sensitive	Acute HI	0	0					2	3	4	5	10
Construction	Sensitive	PM 2.5	602011.31	4174109.30	37.70855235	-121.8426899			2	3	4	5	13
Construction	School	Cancer Risk	601790.77	4174114.08	37.70861995	-121.8451907			12	13	14	15	4
Construction	School	Chronic HI	601790.77	4174114.08	37.70861995	-121.8451907			12	13	14	15	7
Construction	School	Acute HI	0	0					12	13	14	15	10
Construction	School	PM 2.5	601790.77	4174114.08	37.70861995	-121.8451907			12	13	14	15	13
Construction	Worker	Cancer Risk	601279.87	4173612.26	37.70415441	-121.8510556			7	8	9	10	4
Construction	Worker	Chronic HI	601279.87	4173612.26	37.70415441	-121.8510556			7	8	9	10	7
Construction	Worker	Acute HI	0	0					7	8	9	10	10
Construction	Worker	PM 2.5	601279.87	4173612.26	37.70415441	-121.8510556			7	8	9	10	13

General AERMOD Input Parameters			
Project Boundary			
	Based on site plan		
Project Elevation Data			
	Source	**Lakes Environmental**	
	Link	http://www.webgis.com/terraindata.html	
	Evel Data Descr.	**7.5 min DEM**	
Project Receptor Grid			
	Telescoping Grid	Spacing (m)	Distance (m)
	Grid 1	**10**	**310**
	Comments	**Receptors on roads or parking lot areas have been removed.**	
Meteorological Dataset			
	Location	**Livermore**	
	Provided By	**Bay AREA AQMD**	
	Years	**2013 - 2017**	
	Elevation (m)	**119.8**	
Construction Modeling Specific Inputs			
AERMOD Input Options			
	Regulatory Options	**Default**	
	Pollutant Type	**Other**	
	Averaging Period	**Period & Hourly**	
	Dispersion Coefficient	**Urban**	
	County	**Dublin**	
	Urban Grouping / Pop	**Y**	**67,632**
	# of Worker Receptors	**1,095**	
	# of Sensitive Receptors	**1,247**	
	# of School Receptors	**618**	
Construction Area Parameters			
	Source Type	**Polygon Area**	
	Project Area (m^2)	**759,253**	
	Ht. of Source (m)	**3.048**	

General HARP Input Parameters		
Construction		
School Receptors		
School Scenario Parameters		
	Class Grade	**K-12**
	Starting Age	**4**
	Age Range	**4 Year Old -12 Years Old**
	Receptor Type	**Individual Resident**
	Assessment Type	**Cancer / Chronic / Acute**
	Exposure Duration	**1**
	Intake Rate	**RMP using the Derived Merthod**
	Comments	**Each year of construction is modeled seperately and the impact to each recepetor is summed to estimate the total esposure from construction emissions. Additionally, the starting age is increased for each year of construction.**
School Pathway Parameters		
	Pathways	**BAAQMD Manadatory minimum Pathways**
	Deposition Rate	**0.02**
	TAH < 16 yrs	**N**
	TAH ≥ 16 yrs	**N**
Sensitive Receptors		
Sensitive Scenario Parameters		
	Starting Age	**3rd Trimester**
	Age Range	**3rd Trimester - 11 Year**
	Receptor Type	**Individual Resident**
	Assessment Type	**Cancer / Chronic / Acute**
	Exposure Duration	**1**
	Intake Rate	**RMP using the Derived Merthod**
	Comments	**Each year of construction is modeled seperately and the impact to each recepetor is summed to estimate the total esposure from construction emissions. Additionally, the starting age is increased for each year of construction.**
Sensitive Pathway Parameters		
	Pathways	**BAAQMD Mandatory Minimum Pathways**
	Deposition Rate	**0.02**
	TAH < 16 yrs	**Y**
	TAH ≥ 16 yrs	**Y**
Worker Receptors		
Worker Scenario Parameters		
	Starting Age	**16**
	Age Range	**16 - 27**
	Receptor Type	**Worker**
	Assessment Type	**Cancer / Chronic / Acute**
	Exposure Duration	**1**
	Intake Rate	**OEHHA Derived Merthod**
	Comments	**Each year of construction is modeled seperately and the impact to each recepetor is summed to estimate the total esposure from construction emissions. Additionally, the starting age is increased for each year of construction.**
Worker Pathway Parameters		
	Pathways	**OEHHA Minimum Pathways**
	Deposition Rate	**0.02**
	TAH < 16 yrs	**N**
	TAH ≥ 16 yrs	**N**

PM 10				
Tons/Yr	Unmitigated	T2L3	T4	
Year 1	0.1462	0.021985	0.012335	0
Year 2	1.2013	0.048115	0.006514	0
Year 3	0.29765	0.068905	0.0454	0
Year 4	0.15417	0.047045	0.036155	0
Year 5	0.1181	0.04162	0.03367	0
Year 6	0.11775	0.041505	0.03367	0
Year 7	0.10375	0.027485	0.01915	0
Year 8	0.10375	0.027485	0.01965	0
Year 9	0.10405	0.02756	0.0197	0
Year 10	0.0725	0.014075	0.00743	0
Year 11	0.00390945	0.000539	0.000129	0

PM 2.5				
Tons/Yr	UM	T2L3	T4	
Year 1	1.34E-01	2.01E-02	1.23E-02	0.00E+00
Year 2	2.01E-01	4.53E-02	6.51E-03	0.00E+00
Year 3	2.79E-01	6.62E-02	4.54E-02	0.00E+00
Year 4	1.46E-01	4.58E-02	3.63E-02	0.00E+00
Year 5	1.12E-01	4.07E-02	1.97E-02	0.00E+00
Year 6	9.77E-02	2.66E-02	1.97E-02	0.00E+00
Year 7	9.77E-02	2.66E-02	1.97E-02	0.00E+00
Year 8	9.77E-02	2.66E-02	1.97E-02	0.00E+00
Year 9	9.79E-02	2.66E-02	1.97E-02	0.00E+00
Year 10	6.83E-02	1.34E-02	7.43E-03	0.00E+00
Year 11	3.34E-03	5.01E-04	1.29E-04	0.00E+00

PM 10				
Lbs /Yr	Unmitigated	T2L3	T4	0
Year 1	292.4	43.97	24.67	0
Year 2	2402.6	96.23	13.02828	0
Year 3	595.3	137.81	90.8	0
Year 4	308.34	94.09	72.31	0
Year 5	236.2	83.24	67.34	0
Year 6	235.5	83.01	67.34	0
Year 7	207.5	54.97	38.3	0
Year 8	207.5	54.97	39.3	0
Year 9	208.1	55.12	39.4	0
Year 10	145	28.15	14.86	0
Year 11	7.8189	1.078	0.257	0

PM 2.5				
Lbs /Yr	UM	T2L3	T4	0
Year 1	267.15	40.17	24.67	0
Year 2	401.72	90.65	13.02828	0
Year 3	558.7	132.32	90.8	0
Year 4	291.37	91.54	72.5	0
Year 5	224	81.4	39.3	0
Year 6	195.3	53.14	39.3	0
Year 7	195.3	53.14	39.3	0
Year 8	195.3	53.14	39.3	0
Year 9	195.8	53.28	39.4	0
Year 10	136.6	26.89	14.86	0
Year 11	6.675	1.001	0.257	0

For Running Each Base Year

PM 10				
% Chng	Unmitigated	T2L3	T4	0
Year 1	100%	15%	8%	0%
Year 2	100%	4%	1%	0%
Year 3	100%	23%	15%	0%
Year 4	100%	31%	23%	0%
Year 5	100%	35%	29%	0%
Year 6	100%	35%	29%	0%
Year 7	100%	26%	18%	0%
Year 8	100%	26%	19%	0%
Year 9	100%	26%	19%	0%
Year 10	100%	19%	10%	0%
Year 11	100%	14%	3%	0%

PM 2.5				
g/sec	UM	T2L3	T4	0
Year 1	0.003843	0.000578	0.000355	0
Year 2	0.005778	0.001304	0.000187	0
Year 3	0.008036	0.001903	0.001306	0
Year 4	0.004191	0.001317	0.001043	0
Year 5	0.003222	0.001171	0.000565	0
Year 6	0.002809	0.000764	0.000565	0
Year 7	0.002809	0.000764	0.000565	0
Year 8	0.002809	0.000764	0.000565	0
Year 9	0.002816	0.000766	0.000567	0
Year 10	0.001965	0.000387	0.000214	0
Year 11	9.6E-05	1.44E-05	3.7E-06	0

Run only 1 & 2 Years	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
Unmitigated	100%	100%	25%	13%	10%	10%	9%	9%	9%	6%	0%
T2L3	15%	4%	6%	4%	3%	3%	2%	2%	2%	1%	0%
T4	8%	1%	4%	3%	3%	3%	2%	2%	2%	1%	0%
0	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Appendix C
Biological Resources Report

BIOLOGICAL RESOURCES ANALYSIS REPORT

FOR THE

DUBLIN FALLON EAST PROPERTY

CITY OF DUBLIN, ALAMEDA COUNTY, CALIFORNIA

Prepared for:
GH PAC VEST, INC.
2800 Post Oak Boulevard, Suite 5115
Houston, Texas 75056

Prepared by:
OLBERDING ENVIRONMENTAL, INC.
Wetland Regulatory Consultants
3170 Crow Canyon Place, Suite 260
San Ramon, California 94583

Phone: (925) 866-2111 ~ Fax: (925) 866-2126
E-mail: jeff@olberdingenv.com
Contact: Jeff Olberding

OCTOBER 2022

TABLE OF CONTENTS

LIST OF ATTACHMENTS

This report should be cited as: Olberding Environmental, Inc. October 2022. *Biological Resources Analysis Report for the Dublin Fallon East Property, City of Dublin, Alameda County, California*. Prepared for GH Pac Vest LLC.

SUMMARY

On August 31, 2022, Olberding Environmental, Inc. conducted an updated field reconnaissance survey of the Dublin Fallon East Property (Property) for the purpose of identifying sensitive plant and wildlife species, sensitive habitats, and biological constraints associated with the Property. A previous survey of the Property was completed in October 2016. The Property surveyed is comprised of approximately 186.20 acres within the City of Dublin, Alameda County, California. The Property is comprised of two separate parcels. The larger parcel, located to the east of Croak Road and Fallon Road is referred to as the Chen Parcel (Chen) while the portion to the east of the Chen Parcel is the Anderson Parcel (Anderson).

Olberding Environmental conducted a jurisdictional delineation within the Property during 2016. Results of the delineation were verified by the U.S. Army Corps of Engineers (Corps) in 2017 indicating that the Property contains wetlands/waters that are considered jurisdictional by the Corps, Regional Water Quality Control Board (RWQCB), and/or the California Department of Fish and Wildlife (CDFW). Currently there are four linear drainage features that flow down multiple hills from north to south across the northern portion of the Chen Parcel. Water from an intermittent drainage in the northwestern corner of the Chen Parcel enters a culvert which flows under the Property and then exits a second culvert just south where the water discharges into a roadside ditch adjacent to the Property. The roadside ditch and culvert eventually overflow onto the Chen parcel creating a large emergent wetland. A complex of five seasonal additional wetland depressions were observed along the southern boundary of the Chen Parcel. There are five seasonal wetland features within the Anderson parcel. Two small wetlands were noted in the southeastern corner and along the southwestern boundary of the Property. Three other wetlands were observed along the fringe of the quarry pond. All of these features are considered jurisdictional waters/wetlands by the Corps due to their hydric soils, dominant hydrophytic vegetation and hydrological conditions. In October 2022, the City of Dublin conducted routine maintenance to allow water to flow through the roadside ditch and exit through a culvert at the bend in Croak Road. This will likely change the hydrology across the site thus a new verification will be requested from the Corps in 2024.

A query of the California Natural Diversity Database (CNDDB) showed that 13 special-status plant species have a high to moderate potential to occur on the Property. San Joaquin spearscale (*Extriplex depressa*), Congdon's tarplant (*Centromadia parryi* ssp. *condonii*), and saline clover (*Trifolium depauperatum* var. *hydrophilum*) all have a high potential to occur on the Property. Large flowered-fiddleneck (*Amsinckia grandiflora),* alkali milk vetch (*Astragalus tener* var. *tener*), heartscale (*Atriplex cordulata)*, brittlescale (*Atriplex depressa*), lesser saltscale (*Atriplex minuscula)* big tarplant (*Blepharizonia plumosa),* round-leaved filaree (*California macrophylla),*

prostrate vernal pool navarretia (*Navarretia prostrata*) and long-styled sand spurrey (*Spergularia macrotheca longistyla)* were identified as having a moderate potential to occur on the Property based on the presence of suitable habitat located within the vicinity of the Property. Hairless popcorn flower (*Plagiobothrys glaber*) has a low potential to occur onsite due to the absence of suitable habitat and the fact it is presumed extinct in California. Suitable habitats for the plants occur throughout the Property are within the grassland habitat and the seasonal wetland features. Olberding Environmental conducted multiple rare plant species surveys in 2017 and 2022 across all the appropriate blooming periods to assume absence for 10 of the 13 species above. The three special status plant species that were determined to have a high potential on site were observed during the August 2022 survey; San Joaquin spearscale, Congdon's tarplant, and saline clover are present within the Property. No additional plant surveys are warranted.

A total of 17 bird species were identified to have a potential to occur on the Property in a nesting and/or foraging capacity. Four bird species that were determined to have a high potential on site and were observed during the August 2022 survey; Red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), red-shouldered hawk (*Buteo lineatus*), and Cooper's hawk (*Accipiter cooperii*) were all observed within the Property. Loggerhead shrike (*Lanius ludovicianus*), western screech owl (*Megascops kennicotti),* barn owl (*Tyto alba),* white-tailed kite (*Elanus leucurus),* northern harrier (*Circus cyaneus),* great horned owl (*Bubo virginianus)*, burrowing owl (*Athene cunicularia),* and tricolored blackbird (*Agelaius tricolor)* have a high potential to occur in a nesting and foraging capacity, while the California horned lark (*Eremophila alpestris actia)* has a moderate potential to occur. The golden eagle (*Aquila chrysaetos),* ferruginous hawk (*Buteo regalis),* American peregrine falcon (*Falco peregrinus anatum)* and sharp-shinned hawk (*Accipiter striatus)* all have a low to moderate potential to occur on the Property in a foraging capacity only. If project construction-related activities such as tree and vegetation removal or grading take place during the nesting season (February through August), preconstruction surveys for nesting passerine birds and raptors would be required.

CNDDB listed 38 occurrences of California red-legged frog (CRLF) (*Rana draytonii)* within five miles of the Property. The closest CNDDB occurrence (Occurrence #860, 2001) was directly adjacent to the Property on Croak Road. The next closest occurrence (Occurrence #279, 2020) is located just north of the Property where a known breeding pond is located. An adult CRLF was observed immediately east of the intersection of Croak Road and Fallon Road in 2021. Multiple CRLF have been observed within the Croak Road ditch during ditch maintenance in October 2022. Also, over 40 CRLF have been observed up stream under the Central Parkway bridge. A CRLF was also observed within the Chen parcel during a 2018 wet season protocol shrimp survey. The riparian woodland/drainage area in the northwest corner of the Property is highly suitable habitat for CRLF breeding and foraging. The seasonal pond within the quarry offers adequate water during the wet months which could support breeding, while the surrounding small mammal burrows provide upland refuge during the dry season. USFWS designated critical habitat for CRLF overlaps with the northern half of the Property. CRLF occurs on the Property in a breeding, foraging and dispersal capacity.

CNDDB has listed 58 occurrences of California tiger salamander (CTS) (*Ambystoma californiense*) within five miles of the Property. There are eight occurrences within a one-mile radius of the Property. Occurrence #893 is located on the Property within the quarry pond within the Anderson parcel. Additionally, several CTS larvae were observed during a wet season protocol shrimp survey conducted in March 2022. The Property offers suitable breeding and upland refuge habitat with the seasonal pond and the small mammal burrows. The closest USFWS designated critical habitat for CTS is approximately 1.9 miles away in unincorporated Alameda County. CTS occurs on the Property in a breeding, foraging, and dispersal capacity.

The CNDDB lists one occurrence of Alameda whipsnake within five miles of the Property. The location of this occurrence (Occurrence #39; 1991) is approximately 4.9 miles southwest of the Property. The closest USFWS designated critical habitat for Alameda whipsnake (Unit 3) is approximately 4.7 miles southwest of the Property. This occurrence lies just outside of the formal boundary of designated critical habitat. Due to the lack of rocky outcropping/scrub habitat, no recent CNDDB occurrences (within 20 years), and the Property being surrounded by development on all three sides creating a dispersal barrier, Alameda whipsnake has a low potential to occur on the Property and is presumed absent.

CNDDB has listed 11 occurrences of western pond turtle (*Emys marmorata)* (WPT) within five miles of the Property. The closest CNDDB occurrence (Occurrence #1251, 2010) is located 0.75 miles east of the Property just north of Highway 580 within a pond. The permanent water located within the intermittent drainage in the northwest corner of the Property offers suitable habitat for WPT. Therefore, WPT has a moderate potential to occur on the Property.

CNDDB lists two occurrences of fairy shrimp species (*Branchinecta* spp.) within five miles of the Property. The closest USFWS designated critical habitat for vernal pool fairy shrimp (Unit C) is approximately 4.2 miles away in unincorporated Alameda County. There is suitable habitat onsite; however, wet season protocol surveys conducted in 2018 and 2022 and dry season protocol surveys conducted in 2022 discovered only the common versatile fairy shrimp (*Branchinecta lindahli)*; no special status shrimp were observed during the surveys. Given these reasons, listed species of vernal pool fairy shrimp are presumed absent.

No sign of bat use was observed or detected on the Property during the August 2022 survey; however, based on habitat suitability, it was determined that bats have a moderate to low potential to utilize the site in a roosting and foraging capacity. These bat species include pallid bat (*Antrozous pallidus*) and Yuma myotis (*Myotis yumanensis*). If project construction-related activities such as tree removal take place it is recommended that a bat habitat assessment be conducted by a qualified bat biologist during seasonal periods when bats are active to determine suitability of the on-site habitat. If special-status bat species are discovered, construction activities may be timed to minimize impacts and additional mitigation may be required.

No sign of American badger (*Taxidea taxus)* or San Joaquin kit fox (*Vulpes macrotis mutica)* (SJKF) was observed or detected on the Property during the August 2022 survey. CNDDB lists five occurrences of American badger within five miles of the Property. The closest occurrence for American badger (Occurrence #349, 2004) was located 2 miles northwest of the Property adjacent to Camp Parks U.S. Army base. CNDDB lists one occurrence for SJKF within five miles of the Property. This occurrence (Occurrence #1031, 1975) was located 1.5 miles northwest of the Property near Tassajara Creek Regional Park. Due to the lack of substantial burrows, visual evidence, dispersal barriers and no recent CNDDB occurrence (within 20 years) for SJKF, American badger and SJKF both have a low potential to occur on the Property and are presumed absent.

1.0 INTRODUCTION

Olberding Environmental, Inc. has conducted a biological resources analysis (biological constraints assessment) of the Dublin Fallon East Property, located in the City of Dublin, Alameda County, California. This biological resources analysis included a review of pertinent literature on relevant background information and habitat characteristics of the site. Our review included researching existing information in the California Natural Diversity Database (CNDDB) maintained by the CDFW and the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California*. Also included was a review of information related to species of plants and animals that could potentially utilize the described habitats identified on and immediately surrounding the Property. To assist in the assessment, a field reconnaissance investigation of the Property was conducted on August 31, 2022. This report documents the methods, results, and conclusions for the reconnaissance-level survey associated with the biological resources analysis for the Property.

Olberding Environmental conducted an initial biological resource analysis for each parcel, Chen and Anderson, on October 27, 2016.

Several wet season protocol fairy shrimp surveys have been conducted by Olberding biologists on the following dates: April 11, May 10, and June 11, 2018; December 8, December 27, 2021; January 10, February 7, February 21, March 8, March 21, and April 5, 2022. Dry season protocol shrimp surveys were conducted by Madrone Ecological on June 1, 2022. Helm Biological Consulting also conducted rearing of cysts with the dry samples between June and October 2022.

Special status plant surveys were conducted by Olberding biologist on the following dates March 28, April 18, June 1, and June 28, 2017; March 17, April 12, May 3, June 28, and September 1, 2022.

One nighttime CRLF survey was conducted by Olberding biologists on October 3, 2022.

The results of all these surveys are discussed in further detail within their corresponding sections.

2.0 LOCATION

The Property is located just north of Interstate 580, east of Fallon Road and south of Central Parkway within the City of Dublin, Alameda County, California. Croak Road intersects the Property, splitting the two parcels. Attachment 1, Figure 1 depicts the regional location of the Property in Alameda County; Attachment 1, Figure 2 illustrates the vicinity of the Property in relationship to the City of Dublin. Attachment 1, Figure 3 identifies the location of the Property on the USGS 7.5 Quadrangle Map for Dublin. An aerial photograph of the Property has been included as Attachment 1, Figure 4.

Access to the Property is provided from Interstate 580. Take the El Charro/Fallon Road exit and turn north onto Fallon Road. Continue onto Fallon Road for 0.3 miles. And then turn right onto Croak Road. Take Croak Road for 1.0 miles until the road curves to the north; the Property will be located on the right (east) and left (west)sides of Croak Road.

3.0 PROPERTY DESCRIPTION

The Property encompasses approximately 186.20 acres in a roughly rectangular shape bounded on the north by residential development and open space; the west by Fallon Road; the east by open space; and the south by Interstate 580. The Property is composed of two parcels, Chen and Anderson. The Chen parcel is the larger of the two and is located between Croak Road and Fallon Road. The Anderson parcel is located to the east of Croak Road. The Property supports five habitat types consisting of non-native annual grassland, seasonal wetland/pond, drainages, emergent marsh and riparian woodlands (Attachment 1, Figure 10). Rolling hills, located at the northern boundary, contain ephemeral drainages which capture and drain the hills into a more gradually sloped valley floor. An extension of an unnamed intermittent drainage flows through the northwestern corner of the Property adjacent to Croak Road. A road side ditch along Croak Road (located just off the western boundary of the Property) is characterized by cattails *(Typha* *latifolia)*, willow trees (*Salix* spp.), and hydrophytic foliage. During wet seasons this ditch overflows onto the Property creating a large complex of perennial marsh and seasonal wetland depressions within the Chen Parcel. This perennial marsh is suitable habitat to many wildlife species. The southern boundary of the Property contains several small wetlands intermingled within the grassland. An abandoned quarry pond in the northeast portion of the Property supports a seasonal pond feature and seasonal wetlands bordered by a small band of riparian woodland.

Characteristic grassland vegetation across the Property includes wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum* spp. *leporinum*), Italian ryegrass (*Festuca perennis*), black mustard (*Brassica nigra*), yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), filaree (*Erodium* spp.), bur clover (*Medicago polymorpha*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), rabbit's foot grass (*Polypogon monspeliensis*), cattail (*Typha* spp.), Baltic rush (*Juncus balticus*), flatsedge (*Cyperuss eragrostis*), curly dock (*Rumex crispus*), and common spike rush (*Eleocharis palustris*) Common shrubs and trees include coyote brush (*Baccharis pilularis),* cottonwood (*Populus fremontii),* coast live oak (*Quercus agrifolia),* Peruvian peppertree (*Schinus molle),* eucalyptus (*Eucalyptus* spp.), and willow trees. The Property also contains several ornamental trees within the far east-central portion, which was once developed.

The topography of the Property consists of nearly level ground along the southern boundary adjacent to Croak Road, while undulating hillsides occur along the northern boundary above the valley floor; these hillslopes range between 346 feet to 480 feet above sea level.

4.0 REGULATORY SETTING

4.1 Federal Regulatory Setting

4.1.1 Plants and Wildlife

The federal Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq., as amended) prohibits federal agencies from authorizing, permitting, or funding any action that would result in biological jeopardy to a plant or animal species listed as Threatened or Endangered under the Act. Listed species are taxa for which proposed and final rules have been published in the Federal Register (U.S. Fish and Wildlife Service [USFWS] 2022a). If a proposed project may jeopardize listed species, Section 7 of the ESA requires consideration of those species through formal consultations with the USFWS. Federal Proposed species (USFWS, 2022b) are species for which a proposed listing as Threatened or Endangered under ESA has been published in the Federal Register. If a proposed project may jeopardize proposed species, Section 7 of the ESA affords consideration of those species through informal conferences with USFWS. The USFWS defines federal Candidate species as “those taxa for which we have on file sufficient information on biological vulnerability and threats to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded by other higher priority listing actions” (USFWS, 2022b). Federal Candidate species are not afforded formal protection, although USFWS encourages other federal agencies to give consideration to Candidate species in environmental planning.

4.1.2 Wetlands/Waters

The federal government, acting through the Corps and the Environmental Protection Agency (EPA), has jurisdiction over all “waters of the United States” as authorized by §404 of the Clean Water Act (CWA) and §10 of the Rivers and Harbors Act of 1899 (33 CFR Parts 320-330). Properties that cause the discharge of dredged or fill material into waters of the United States require permitting by the Corps. Actions affecting small areas of jurisdictional waters of the United States may qualify for a Nationwide Permit (NWP), provided conditions of the permit are met, such as avoiding impacts to threatened or endangered species or to important cultural sites. Properties that affect larger areas or which do not meet the conditions of an NWP require an Individual Permit. The process for obtaining an Individual Permit requires a detailed alternatives analysis and development of a comprehensive mitigation/monitoring plan.

Waters of the United States are defined as territorial seas and traditionally navigable waters, tributaries, lakes and ponds, and impoundments of jurisdictional waters, and adjacent wetlands. Under federal regulation, wetlands are defined as areas that are inundated or saturated by surface of groundwater at a frequency or 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 Part 328.3(c)(16)). Wetlands generally include swamps, marshes, bogs, and similar areas. In addition, portions of the riparian habitat along a river or stream may be a wetland where the riparian vegetation is at or below the ordinary high water mark and thus also meets the wetland hydrology and hydric soil criteria.

Navigable waters include all waters subject to the ebb and flow of the tides, including the open ocean, tidal bays, and tidal sloughs. Navigable waters also include some large, non-tidal rivers and lakes, which are important for transportation in commerce. The jurisdictional limit over navigable waters extends laterally to the entire water surface and bed of the waterbody landward to the limits of the mean high tide line. For non-tidal rivers or lakes, which have been designated (by the Corps) to be navigable waters, the limit of jurisdiction along the shoreline is defined by the ordinary high water mark. “Other waters” refer to waters of the United States other than wetlands or navigable waters. Other waters include streams and ponds, which are generally open water bodies and are not vegetated. Other waters can be perennial or intermittent water bodies and waterways. The Corps regulates other waters to the outward limit of the ordinary high water mark. Streams should exhibit a defined channel, bed and banks to be delineated as other waters.

The Corps does not generally consider “non-tidal drainage and irrigation ditches excavated on dry land” to be jurisdictional waters of the United States (and such ditches would therefore not be regulated by the Corps (33 CFR Parts 320-330, November 13, 1986). Other areas generally not considered jurisdictional waters include: 1) artificially irrigated areas that would revert to upland habitat if the irrigation ceased; 2) artificial lakes and ponds created by excavating and/or diking of dry land to collect and retain water, used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing; 3) waste treatment ponds; 4) ponds formed by construction activities including borrow pits until abandoned; and 5) ponds created for aesthetic reasons such as reflecting or ornamental ponds (33 CFR Part 328.3). However, the preamble also states “the Corps reserves the right on a case-by-case basis to determine that a particular waterbody within these categories” can be regulated as jurisdictional water. The EPA also has authority to determine jurisdictional waters of the U.S. on a case-by-case basis. Riparian habitat that is above the ordinary high water mark and does not meet the three-parameter criteria for a wetland would not be regulated as jurisdictional waters of the United States.

4.1.3 Migratory Bird Treaty Act

Raptors are migratory bird species protected by international treaty under the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR. Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Sections 3503, 3503.5, and 3800 of the California Fish and Game Code prohibit the take, possession, or destruction of birds, their nests or eggs. Implementation of the take provisions requires that Property-related disturbance at active nesting territories be reduced or eliminated during critical phases of the nesting cycle (generally February 1 – September 1, annually). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) or the loss of habitat upon which the birds depend, is considered “taking” and is potentially punishable by fines and/or imprisonment. Such taking would also violate federal law protecting migratory birds (e.g., MBTA).

4.1.4 Federal Bald and Golden Eagle Protection Act

In addition to protection under the MBTA, both the bald eagle and the golden eagle are also protected by the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668-668c). The Bald and Golden Eagle Protection Act, and amended several times since being enacted in 1940, prohibits anyone, without a permit issued by the Secretary of the Interior, from “taking” bald or golden eagles, including their parts, nests, or eggs (USFWS 2007). 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" (USFWS 2007).

For purposes of these guidelines, "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" (USFWS 2007).

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 (USFWS 2007).

4.2 State Regulatory Setting

4.2.1 Plants and Wildlife

Property permitting and approval requires compliance with California Environmental Quality Act (CEQA), the 1984 California Endangered Species Act (CESA), and the 1977 Native Plant Protection Act (NPPA). The CESA and NPPA authorize the California Fish and Game Commission to designate Endangered, Threatened and Rare species and to regulate the taking of these species (§§2050-2098, Fish & Game Code). The California Code of Regulations (Title 14, §670.5) lists animal species considered Endangered or Threatened by the State.

The Natural Heritage Division of the CDFW administers the state rare species program. The CDFW maintains lists of designated Endangered, Threatened, and Rare plant and animal species (CDFW 2022a and 2022b). Listed species either were designated under the NPPA or designated by the Fish and Game Commission. In addition to recognizing three levels of endangerment, the CDFW can afford interim protection to candidate species while they are being reviewed by the Fish and Game Commission.

The CDFW also maintains a list of animal species of special concern (CDFW 2022b), most of which are species whose breeding populations in California may face extirpation. Although these species have no legal status, the CDFW recommends considering them during analysis of proposed property impacts to protect declining populations and avoid the need to list them as endangered in the future.

The California Fish & Game Code §3503, 3503.5, and 3513 cover native bird protection. Mitigation for avoidance of impacts to nesting birds are typically necessary to comply with these Sections of the Fish and Game Code in CEQA and other permitting documents.

Under provisions of §15380(d) of the CEQA Guidelines, the CEQA lead agency and CDFW, in making a determination of significance, must treat non-listed plant and animal species as equivalent to listed species if such species satisfy the minimum biological criteria for listing. In general, the CDFW considers plant species on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994) as qualifying for legal protection under §15380(d). Species on CNPS Lists 3 or 4 may, but generally do not, qualify for protection under this provision.

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species and CDFW Species of Special Concern, areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the CNDDB working list of "high priority" habitats (i.e., those habitats that are rare or endangered within the borders of California) (Holland 1986).

4.2.2 Wetlands/Waters

The RWQCB regulates activities in wetlands and other waters through §401 of the Clean Water Act and the Porter-Cologne Act. Section 401 requires a state water quality certification for properties subject to 404 regulations. Requirements of the certification include mitigation for loss of wetland habitat. In the San Francisco Bay region, the RWQCB may identify additional wetland mitigation beyond the mitigation required by the Corps. California Fish and Game Code §§1600-1607 require the CDFW be notified of any activity that could affect the bank or bed of any stream that has value to fish and wildlife. Upon notification, the CDFW has the discretion to execute a Streambed Alteration Agreement. The CDFW defines a stream as follows:

> *"... a body of water that flows at least periodically...through a bed or channel having banks and supporting fish and other aquatic life. This includes watercourses having a subsurface flow that supports or has supported riparian vegetation."*
>
> (Source: Streambed Alteration Program, California Department of Fish and Wildlife, 2016).

In practice, CDFW authority is extended to any “blue line” stream shown on a USGS topographic map, as well as unmapped channels with a definable bank and bed. Wetlands, as defined by the Corps, need not be present for CDFW to exert authority.

4.2.3 California Environmental Quality Act

According to Appendix G of the CEQA (CEQA 2022) Guidelines, a proposed project would have a significant impact 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 CDFW and USFWS?

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 CDFW or USFWS?

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

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?

4.3 Local Regulatory Setting

4.3.1 City of Dublin Tree Ordinance – Chapter 5.60 – Heritage Tree Regulations

The City of Dublin Code of Ordinance 5.60.50(a) Trees Subject to Or Exempt from Permit Requirements

(a) Permit or Other Authorization Required for Heritage Trees. A permit or other authorization conferred in accordance with this chapter is required to remove, cause to be removed, or effectively remove any Heritage Tree from any property within the City of Dublin.

(1) Any oak, bay, cypress, maple, redwood, buckeye and sycamore having a trunk or main stem of twenty-four inches or more in diameter measured at four to six inches above natural grade.

(2) Any tree required to be preserved as part of an approved Development Plan Zoning Permit, Use Permit, Site Development Review or Subdivision Map.

(3) A tree required to be planted as a replacement for an unlawfully removed tree.

(b) No person may remove, cause to be removed, or effectively remove any heritage tree from any property within the city of Dublin without obtaining a permit from the Director. However, a permit is not required for the following:

(1) Removal of a heritage tree that presents an immediate hazard to life or property, with the approval of the Director, City Engineer, Police Chief, Fire Chief or their designee;

(2) Removal that is specifically approved as part of a city-approved planned development plan, conditional use permit, site development review, or subdivision map;

(3) Pruning of heritage trees that conforms with the guidelines of the International Society of Arboriculture, Tree Pruning Guidelines, current edition, on file in the Community Development Department.

(c) Tree removal requested as part of the development of a property subject to zoning, subdivision, conditional use permit, or site development review application approval shall be reviewed and approved by the body having final authority over the entitlement application. (Ord. 5-02 § 2 (part): Ord. 29-99 § 1 (part).

4.3.2 *East Dublin Specific Plan: 6.3.1 Stream Corridors and Wetlands*

All planning area streams, naturally incised channels, and wetland areas are subject to Corps of Engineers (COE) jurisdiction under section 404 of the Clean Water Act, Proposed filling of any wetland area will require reviews and approval by the COE. The CDFW also has jurisdiction over streambeds in the planning area and requires notification, review, and potentially a permit for proposed alterations to any streambed. All riparian and emergent wetland habitats cannot be filled without first obtaining the appropriate permits and agreements from both the COE (Section 404 permits) and the CDFW (Stream Alteration Permit). Under the Plan, watercourses are to be preserved in open space corridors, and enhancement and stabilization will be required to restore these areas natural values. The restoration of planning area watercourses is intended to enhance the streams' natural functions as drainage channel, habitat areas, and wildlife corridors.

- *Policy 6-10:* Riparian and wetland areas should be incorporated into greenbelt and open space areas as means of preserving their hydrologic and habitat value. Unavoidable loss of riparian habitat due to development should be replaced with similar habitat on a 3:1 in kind basis. Loss of wetlands must be mitigated consistent with the COE's current policy.

- *Policy 6-11:* All stream corridors shall be managed to encourage revegetation with native plant species to enhance their natural appearance and improve habitat values. Active revegetation must be implemented by a professional revegetation/restoration specialist. Habitat management should be overseen by restoration ecologist.

5.0 METHODS OF ANALYSIS FOR GENERAL BIOLOGICAL RESOURCES

A special-status plant and wildlife species database search and review was conducted using the CNDDB and other sources. An additional search was conducted for special-status plants using CNPS *Inventory* on-line. Special-status species reports were accessed by searching the CNDDB database for the Dublin, Livermore, La Costa Valley, Niles, Tassajara, Altamont, Mendenhall Springs, and Byron Hot Springs USGS 7.5-minute quadrangles which surround the Property, and by examining those species that have been identified in the vicinity of the Property. These quadrangles will be henceforth noted as surrounding quads. The database report identified special-status species known to occur in the region or those that have the potential to occur in the vicinity of the Property. The CNDDB report was used to focus special-status species analysis of the site prior to the reconnaissance surveys.

An Olberding Environmental biologist conducted a reconnaissance-level survey of the Property on August 31, 2022. The survey consisted of walking throughout the Property and evaluating the site and adjacent lands for potential biological resources. Existing conditions, observed plants and wildlife, adjacent land use, soils and potential biological resource constraints were recorded during the visit. Plant and wildlife species observed within and adjacent to the Property during the reconnaissance survey are listed in Attachment 2, Table 1. Site photographs are provided in Attachment 3 of this document. Attachment 1, Figure 9 shows where each site photo was taken.

The objectives of the field survey were to determine the potential presence or absence of special-status species habitat listed in the CNDDB database report and to identify any wetland areas that could be potentially regulated by the Corps, RWQCB, and/or CDFW (CNDDB 2022). In addition, the Olberding Environmental biologist looked for other potential sensitive species or habitats that may not have been obvious from the background database reports or research. Surveys conducted after the growing season or conducted outside of the specific flowering period for a special-status plant cannot conclusively determine the presence or absence of such plant species; therefore, site conditions and habitat type were used to determine potential for occurrence. When suitable habitat was observed to support a special-status plant or animal species, it was noted in the discussion for that particular species. Regulatory agencies evaluate the possibility of occurrence based on habitats observed on-site and the degree of connectivity with other special-status animal habitats in the vicinity of the Property. These factors are discussed in each special-status plant or animal section. Potential for occurrence of each special-status or protected plant and animal species was evaluated using the following criteria.

- **Present**: The species has been recorded by CNDDB or other literature as occurring on the Property and/or was observed on the Property during the reconnaissance survey or protocol surveys.

- **May Occur**: The species has been recorded by CNDDB or other literature as occurring within five miles of the Property, and/or was observed within five miles of the Property, and/or suitable habitat for the species is present on the Property or its immediate vicinity.

- **Not Likely to Occur**: The species has historically occurred on or within five miles of the Property, but has no current records. The species occurs within five miles of the Property but only marginally suitable habitat conditions are present. The Property is likely to be used only as incidental foraging habitat or as an occasional migratory corridor.

- **Presumed Absent**: The species will not occur on the Property due to the absence of suitable habitat conditions, and/or the lack of current occurrences. Alternatively, if directed or protocol-level surveys were done during the proper occurrence period and the species was not found, it is presumed absent.

Sources consulted for agency status information include USFWS (2022a) for federally listed species and CDFW (2022b) for State of California listed species. Based on information from the above sources, Olberding Environmental developed a target list of special-status plants and animals with the potential to occur within or in the vicinity of the Property (Attachment 2, Table 2).

5.1 Soils Evaluation

The soils present on a property may determine if habitat on the site is suitable for certain special-status plants and animals. The host plants of some special-status invertebrates may also require specific soil conditions. In the absence of suitable soil conditions, special-status plants or animals requiring those conditions would be presumed absent. Information regarding soil characteristics for the Property was obtained by viewing the Natural Resources Conservation Service (NRCS) Web Soil Survey report for the Property (NRCS 2022).

5.2 Plant Survey Methods

The purposes of the botanical surveys were (1) to characterize the habitat types (plant communities) of the study area; (2) to determine whether any suitable habitat for any special-status plant species occurs within the study area; and (3) to determine whether any sensitive habitat types (e.g., wetlands) occur within the study area. Site conditions and plant habitat surveys are important tools in determining the potential occurrence of plants not recorded during surveys (e.g., special-status plants) because presence cannot conclusively be determined if field surveys are conducted after the growing season or conducted outside a specific flowering period.

5.2.1 Review of Literature and Data Sources

The biologist conducted focused surveys of literature and special-status species databases in order to identify special-status plant species and sensitive habitat types with potential to occur in the study area. Sources reviewed included the CNDDB occurrence records (CNDDB 2022) and CNPS *Inventory* (Skinner and Pavlik 1994) for the surrounding quads; and standard flora (The Jepson Manual 2012). From the above sources, a list of special-status plant species with potential to occur in the Property vicinity was developed (Attachment 2, Table 2).

5.2.2 Field Surveys

A biologist from Olberding Environmental conducted a reconnaissance-level survey to determine habitat types and the potential for special-status plants based on the observed habitat types. All vascular plant species that were identifiable at the time of the survey were recorded and identified using keys and descriptions in The Jepson Manual (2012).

The habitat types occurring on the Property were characterized according to pre-established categories. In classifying the habitat types on the site, the generalized plant community classification schemes of *A Manual of California Vegetation* (Sawyer, Keeler-Wolf, and Evens 2009) were consulted. The final classification and characterization of the habitat types of the study area were based on field observations.

5.3 Wildlife Survey Methods

The purposes of the wildlife survey were to identify special-status wildlife species and/or potential special-status wildlife habitats within the Property.

5.3.1 Review of Literature and Data Sources

A focused review of literature and data sources was conducted in order to determine which special-status wildlife species had potential to occur in the vicinity of the Property. Current agency status information was obtained from USFWS (2022a) for species listed as Threatened or Endangered, as well as Proposed and Candidate species for listing, under the federal ESA; and from CDFW (2022a, 2022b) for species listed as Threatened or Endangered by the state of California under the CESA, or listed as "species of special concern" by CDFW. From the above sources, a list of special-status wildlife species with potential to occur in the Property vicinity was developed (Attachment 2, Table 2).

5.3.2 Field Surveys

General Wildlife Survey – An Olberding Environmental biologist conducted a survey of species habitat within the entire study area, including visible portions of the adjacent properties. The purpose of the habitat survey was to evaluate wildlife habitats and the potential for any protected species to occur on or adjacent to the Property.

Reconnaissance-Level Raptor Survey – A reconnaissance-level raptor survey was conducted on the Property. Observation points were established on the periphery of the site to view raptor activity over a forty-five-to-sixty-minute time period. This survey was conducted with the use of binoculars and notes were taken for each species occurrence. Additionally, utility poles and perch sites in the vicinity of the Property were observed. All raptor activity within and adjacent to the Property was recorded during the reconnaissance-level observation period.

Reconnaissance-Level Burrowing Owl Badger/San Joaquin Kit Fox Survey – A reconnaissance-level survey was also conducted on the Property to identify potential burrow sites or use of on-site habitat for burrowing owl, American badger and San Joaquin kit fox. The general presence and density of suitable burrow sites (e.g., rodent burrows) was evaluated across the Property.

Rare Plant Survey - Olberding Environmental conducted focused surveys of literature and special-status species databases in order to identify special-status plant species and sensitive habitat types with potential to occur in the study area. The field surveys followed the California Department of Fish and Wildlife (2018) and CNPS (2001) published survey guidelines. These guidelines state that special-status surveys should be conducted at the proper time of year when special-status and locally significant plants are both evident and identifiable. Blooming periods for each surveyed species can be found in Table 2.

Protocol-Level Listed Large Branchiopod Surveys – All potential habitat was adequately sampled with dipnets at 14-day intervals after the initial inundation of suitable habitat. Sampling continued until habitats dried or a minimum of 90 day of inundation had occurred as specified in the USFWS Survey Guidelines for the Listed Large Branchiopods (USFWS 2015).

California Red-legged Frog and Western Pond Turtle Survey – A visual survey was conducted by OEI biologists, on September 20, 2022, for the presence or absence of western pond turtle and California red-legged frog. Visual day time surveys for these species were also conducted previously on June 10 and June 20, 2022. One nighttime survey for California red-legged frog was conducted on October 3, 2022, this survey also included western pond turtle. Any areas of suitable aquatic habitat located throughout the Property were surveyed as well as any upland areas located within 200 feet of suitable aquatic habitat. Due to the sensitivity to approach, binoculars were utilized to scan the banks of the aquatic habitat every few hundred feet. Transects were walked across all accessible parts of the Property with a primary focus on the aquatic habitats. All turtles and frogs encountered were closely examined through binoculars to determine species.

6.0 RESULTS FOR GENERAL BIOLOGICAL RESOURCES

The search and review of the CNDDB database reports revealed the occurrence of special-status plant and wildlife species that occur in the habitats found within the Property boundaries (CNDDB 2022). The CNDDB database and background data were reviewed for the surrounding quads. Animal occurrences shown on Attachment 1, Figure 5 and plant occurrences shown on Attachment 1, Figure 6 are located within 5 miles of the Property and were reviewed for their potential to occur on the Property based on general habitat types. Results of the species review is tabulated on Attachment 2, Table 2. Critical habitat within the surrounding quads is shown on Attachment 1, Figure 7.

6.1 Soil Evaluation Results

The NRCS (2019) reports seven soil types within the Property. A map of this soil type can be found in Attachment 1, Figure 8. The soil type mapped included the following:

- **Cc: Clear Lake Clay-- 0-3 percent slopes.** Clear Lake clay soils can be found at elevations between 25 and 2,000 feet with 0 to 2 percent slopes. The composition of this soil type within the Property consists of 85 percent Clear Lake and similar soils, and 15 percent of minor components including Pescadero (4%), Cropley (4%), Conejo (4%), and Unnamed (3%).

  The Clear Lake series consists of very deep, poorly drained soils that formed in fine textured alluvium derived from sandstone and shale. Clear Lake soils are in basins and in swales of drainage ways. Clear Lake soils exhibit slow to very slow permeability and negligible to high runoff.

- **DvC: Diablo Clay -- Very deep 3-15 percent slopes.** Very deep Diablo clay soils are found within the lower reaches of the intermittent drainages eat of the residence. This soil is found between 300 and 1,700 feet. Mean annual precipitation is between 10 and 15 inches. Very deep Diablo clay is a well drained soil. From zero to 15 inches it is comprised of clay, and below 15 inches, silty clay.

- **LaC, LaD LaE2: Linne Clay Loam—3-15 percent slopes, 15-30 percent slopes, 30-45 percent slopes eroded.** The Linne series consists of moderately deep, well drained soils that formed in material weathered from fairly soft shale and sandstone. These soils are on gently sloping to very steep uplands from 100 to 2,200 feet. The composition of this soil type within the Property consists of 85 percent Linne and similar soils and 15 percent of minor components including Diablo (5%), Altamont (5%), Clear Lake (3%), and Pescadero (2%).

  Typically, Linne soils exhibit medium to very rapid runoff and moderately slow permeability. These soils are used mainly for rangeland with some areas farmed to small grains, related crops, and almonds. Naturalized and native vegetation is annual grasses and forbs, some live oak, and coastal sage. This series shows no frequency of ponding or flooding and is nonsaline. Its stratified layers consist of the following (colors are for dry soil unless otherwise stated):

Ap--0 to 9 inches; very dark gray clay loam, black moist; very hard, friable; moderately alkaline (pH 8.0).

A12--9 to 14 inches; dark gray clay loam, black moist; very hard, friable; moderately alkaline (pH 8.0).

A13--14 to 29 inches; gray clay loam, very dark gray moist; very hard, friable; moderately alkaline (pH 8.0).

AC--29 to 32 inches; gray and light gray sandy clay loam, gray and light brownish gray moist; very hard, friable; moderately alkaline (pH 8.0).

Clca--32 to 36 inches; white fine sandy loam, very pale brown and white moist; extremely hard, firm; moderately alkaline (pH 8.0).

C2r--36 to 51 inches; white mudstone, light gray and pale yellow moist; very hard, firm; moderately alkaline (pH 8.0).

- **RdA, RdB: Rincon Clay Loam -- 0-3 percent slopes, 3-7 percent slopes**. The Rincon series consists of deep, well drained soils that formed in alluvium from sedimentary rocks. Rincon soils are on old alluvial fans and both stream and marine terraces at elevations of 20 to 2,000 feet. The composition of this soil type within the Property consists of 85 percent Rincon and similar soils and 6 percent of minor components including Cropley clay (3%) and Hillgate silt loam (3%).

  Typically, Rincon soils exhibit slow to rapid runoff and slow permeability. These soils are used for irrigated citrus, deciduous fruits, row crops, and alfalfa. Some dry farming for grain and pasture. Natural vegetation is annual grasses and forbs. This series shows no frequency of ponding or flooding and is non-saline. Its stratified layers consist of the following (colors are for dry soil unless otherwise stated):

  Ap--0 to 4 inches; dark gray silty clay loam, very dark gray moist; hard, firm, sticky; slightly acid (pH 6.5).

  A12--4 to 16 inches; dark gray silty clay loam, very dark gray moist; very hard, firm, sticky; slightly acid (pH 6.5).

  B21t--16 to 25 inches; dark grayish brown sandy clay, very dark grayish brown moist; extremely hard, very firm, sticky; neutral (pH 7.0).

  B22t--25 to 31 inches; dark grayish brown sandy clay, very dark grayish brown moist-coarse splotches of brown, dark brown moist; very hard, very firm, sticky; moderately alkaline (pH 7.9).

B3tca--31 to 40 inches; brown sandy clay loam, dark brown moist; very hard, firm, sticky; moderately alkaline (pH 8.0).

Cca--40 to 60 inches; yellowish brown stratified sandy clay loam and sandy loam, dark yellowish brown moist; hard, firm, sticky; moderately alkaline (pH 8.0).

6.2 Plant Survey Results

6.2.1 Floristic Inventory and Habitat Characterization

The Property supports four habitat types consisting of non-native annual grassland, seasonal wetland/pond, emergent marsh, riparian woodland and drainages. In classifying the habitat types on the Property, generalized plant community classification schemes were used (Sawyer, Keeler-Wolf, and Evens 2009). The final classification and characterization of the habitat type of the Property was based on field observations. Plant species that occurred within 5 miles of the Property are shown in Attachment 1, Figure 6.

The habitat type and a description of the plant species present within the habitat type are provided below. The habitats found on the Property are mapped on Attachment 1, Figure 10. Dominant plant species are also noted. A complete list of plant species observed on the Property can be found within Attachment 2, Table 1.

Non-native Annual Grassland

Non-native annual grassland represents the dominant plant community on the Property. As stated earlier, the Properties have been primarily used for grazing in the past. As a result, non-native annual grasses of European origin make up the dominant species. These species include wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum* spp. *leporinum*), and Italian ryegrass (*Festuca perennis*), among others. Common non-native forbs observed during field surveys include black mustard (*Brassica nigra*), Mediterranean linseed (*Bellardia trixago),* yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), filaree (*Erodium* spp.), and bur clover (*Medicago polymorpha*).

Drainage

Five drainages exist on the Chen Parcel. One intermittent channel lies within the riparian woodland on the northwestern corner while the other four are spread within the hills of the north-central part of the Property. Dominant vegetation within the drainage features consisted primarily of salt grass (*Distichilis spicata*), iris leaf rush (*Juncus xiphioides*) and rabbit's foot grass (*Polypogon monspeliensis*) with sporadic yerba mansa (*Anamopsis californica*) and watercress (*Nasturtium officinale*) within the northwestern corner. Four additional ephemeral channels exist across the northern portion of the Chen Parcel. These channels vegetation characteristics are similar to the non-native grassland composition.

Seasonal Wetland/Pond

The seasonal wetlands across the Property are characterized by Italian rye grass (*Festuca perennis),* seaside barley (*Hordeum marinum),* Baltic rush, (*Juncus balticus),* bristly oxtongue (*Helminthotheca echioides),* common toad rush (*Juncus bufonius),* beardless wild rye (*Elymus triticoides),* timothy grass (*Phleum alpinum),* bulrush (*Typha latifolia),* curly dock (*Rumex crispus),* tall flatsedge (*Cyperus eragrostis),* hyssop lossestrife (*Lythrym hyssopifolia),* brass buttons (*Cotula coronopifolia),* soft brome (*Bromus hordeaceus),* prickly lettuce (*Lactuca serriola),*Congdon's tarplant, and rabbit's foot grass.

Emergent Marsh

The emergent marsh contains water year-round and is primarily characterized by a large stand of cattails (*Typha* sp.). The cattail stand covers the entire emergent marsh along with a few scattered willow trees (*Salix* spp.) present along the boundary of Croak Road. Several hydrophytic species are present within the willow undergrowth such as, cutleaf water parsnip (*Berula erecta),* prickly lettuce, and rabbits foot grass.

Riparian Woodland

A group of willow (*Salix sp*) and cottonwood trees (*Populus fremontii*) surround the quarry pond within the northern portion of the Anderson Parcel. On the Chen Parcel, a dense group of willow, cottonwood, and coast live oak (*Quercus agrifolia*) trees surround the intermittent drainage within the northwestern corner of the Property.

Special-Status Plant Species

Special-status plant species include species listed as Rare, Threatened, or Endangered by the USFWS (2022a) or by the State of California (CDFW 2022a). Federal Proposed and Candidate species (USFWS, 2022b) are also special-status species. Special-status species also include species listed on List 1A, List 1B, or List 2 of the CNPS Inventory (Skinner and Pavlik, 1994; CNPS 2022). All species in the above categories fall under state regulatory authority under the provisions of CEQA, and may also fall under federal regulatory authority. Considered special-status species are species included on List 3 (Plants About Which We Need More Information—A Review List) or List 4 (Plants of Limited Distribution—A Watch List) of the CNPS *Inventory*. These species are considered to be of lower sensitivity and generally do not fall under specific state or federal regulatory authority. Specific mitigation considerations are not generally required for List 3 and List 4 species.

Attachment 2, Table 2 includes a list of special-status plants with the potential to occur within or in the immediate vicinity of the Property based on a review of the surrounding quads. The special-status plant species identified by the CNDDB as potentially occurring on the Property are known to grow only from specific habitat types. The specific habitats or "micro-climate" necessary for many of the plant species to occur are not found within the boundaries of the Property. The habitats necessary for the CNDDB reported plant species consist of valley and foothill grassland, cismontane woodlands, chaparral, playas, chenopod scrub, adobe clay soils, alkaline soils, serpentine soils, sandy soils, gravelly soils, coastal prairie, coastal scrub, coastal dunes, coastal bluff scrub, coastal salt marsh, vernal pools, seeps, meadows and sinks, marshes or swamps, riparian woodlands, on slopes near drainages, closed cone coniferous forest, north coast coniferous forest, redwood forest, lower montane coniferous forest, and broad-leafed upland forest.

Occurrences of special-status plants within a five-mile radius of the point roughly representing the center of the Property are described in detail. Occurrence distance from the Property is estimated from the center point found in Attachment 1, Figure 6.

Based on habitat types and nearby CNDDB occurrences, a total of 12 special plants were determined to have a potential to occur on the Property. During a 2022 plant survey, a species of unknown popcorn flower (*Plagiobothrys* sp.) was observed to be present on the Property. However, hairless popcorn flower is presumed extinct in California, therefore, it has a low potential to occur on site and is presumed absent. Three special status plants were observed on the Property during the August 2022 survey. These species are discussed in further detail below.

Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*). CNPS List 1B.

Congdon's tarplant is a member of the genus *Centromadia* in the sunflower family (*Asteraceae*). It is one of four subspecies of Parry's tarplant (*Centromadia parryi*). Congdon's tarplant is a prostrate to erect, annual herb with rigidly spine-tipped leaves and yellow ray- and disk-flowers (head). It occurs in valley and foothill grasslands in moist alkaline soils and blooms between June and

November. Historically, Congdon's tarplant was distributed from Solano County south to San Luis Obispo County.

In addition to this species being present on the Property, 14 CNDDB occurrences of this species have occurred within five miles of the Property, with the closest occurrence (Occurrence #11) from 1999, intersecting with the Property within the annual grassland between Fallon Road and Croak Road. It was estimated that approximately 76,000 plants were observed.

Saline Clover (*Trifolium hydrophilum*). CNPS List 1B.

Saline clover is member of the pea family, *Fabaceae*. Purple flowers bloom between April and June. This species is found in marshes and swamps, mesic valley and foothill grasslands with alkaline soils, and vernal pools, between 0 and 300 meters in elevation. It is thought to occur in Alameda, Colusa, Monterey, Napa, San Benito, Santa Clara, San Luis Obispo, San Mateo, Solano, and Sonoma Counties. It is threatened by development and current fieldwork is needed to determine if populations still exist in many counties.

The CNDDB lists one occurrence of this species within five miles of the Property. This occurrence (Occurrence #7) is located 500 feet west of the Property within a vernal pool habitat. 60 plants were observed in 2002 and several were observed in 2006. This species was also verified as a new occurrence within the Property during the August 2022 survey. Approximately 100 saline clover individuals were observed within the emergent wetland habitat.

San Joaquin Spearscale (*Extriplex joaquiniana*). CNPS List 1B.

San Joaquin spearscale is an annual herb in the family *Chenopodiaceae*. Leaves of the San Joaquin spearscale are ovate to triangular, with fine gray scales above. Flowers are dense and spike or panicle-like with dark brown seeds. It is found in Alameda, Contra Costa, Merced, Monterey, Napa, Sacramento, San Benito, Solano, and Yolo counties. It is considered extirpated in Santa Clara, San Joaquin, and Tulare counties. Habitat for the San Joaquin spearscale includes chenopod scrub, meadows, seeps, playas, and valley and foothill grasslands with alkaline soils. Blooming occurs between April and October.

In addition to this species being present on the Property, 11 CNDDB occurrences of this species have occurred within five miles of the Property, with the closest occurrence (Occurrence #68), located approximately 1300 feet west of the Property. During this occurrence approximately 200-300 plants were observed. In 2022, approximately 70 San Joaquin spearscale individuals were observed in the southern central portion of the Chen Parcel and along the dirt access road on the Anderson Parcel.

Nine special status plants species were determined to have a moderate potential to occur on the Property based on present habitat types and nearby CNDDB occurrences. Each of the following species' closest CNDDB occurrence is located within 5 miles of the Property. Additional information on the required habitat types for each species can be found in Table 2.

- Large flowered-fiddleneck (*Amsinckia grandiflora)*
- Alkali milk vetch (*Astragalus tener* var. *tener)* No nearby occurrences.
- Heartscale (*Atriplex cordulata)* (Occurrence #11, 1999, 4.9 miles)
- Brittlescale (*Atriplex cordulata)* (Occurrence # 65, 2000, 2.9 miles)
- Lesser saltscale (*Atriplex minuscula)* (Occurrence #46, 2010, 4.9 miles)
- Big tarplant (*Blepharizonia plumosa)* No nearby occurrences.
- Round-leaved filaree (*California macrophylla)* No nearby occurrences.
- Prostrate vernal pool navarretia (*Navarretia prostrata)* (Occurrence #61, 2010, intersects the Property)
- Long-styled sand spurrey (*Spergularia macrotheca longistyla)* (Occurrence #2, 1943, 3 miles; most recent occurrence, Occurrence #3, 2003)

Each of the above nine species were surveyed for during the 2017 and 2022 rare plant surveys conducted by Olberding Environmental during their appropriate blooming period. They were found to be absent from the Property.

6.3 Wildlife Survey Results

6.3.1 General Wildlife Species and Habitats

A complete list of wildlife species observed within the Property can be found in Attachment 2, Table 1. Wildlife species commonly occurring within habitat types present on the Property are discussed below:

Non-native Annual Grassland

The annual grassland habitat provides many foraging opportunities for a wide range of species. Passerine species observed during the survey include California towhee (*Melozone crissalis*), black phoebe (*Sayornis nigricans*), barn swallow (*Hirundo rustica*) and white-crowned sparrow (*Zonotrichia leucophrys*). Other avian species observed include American crow (*Corvus bracyrynchos*), acorn woodpecker (*Melanerpes formicivorus*), Anna's hummingbird (*Calypte anna*), and turkey vulture (*Cathartes aura*).

The red-tailed hawk, Coopers hawk, and American kestrel were raptor species observed during the survey; however, the grassland habit could potentially be utilized for nesting and/or foraging by other species including ferruginous hawk, sharp-shinned hawk, white-tailed kite, golden eagle, American peregrine falcon, red-shouldered hawk, California horned lark, loggerhead shrike, northern harrier and several owl species including the burrowing owl.

Desert cottontail (*Sylvilagus audubonii*) and coyote (*Canis latrans*) were observed foraging during the August 2022 survey. Raccoon (*Procyon lotor*) and mule deer (*Odocoileus hemionous*) droppings were seen throughout the Property. Extensive burrow colonies created by small mammals including, but not limited to, Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Otospermophilus beecheyi),* and various vole species (*Microtus* spp.) were also observed.

The cover from the grassland habitat and the extensive burrow complexes offer suitable refuge habitat for various amphibian and reptile species including special status species such as the California tiger salamander (CTS) (*Ambystoma californiense*), and California red-legged frog (CRLF) (*Rana draytonii*). Numerous western fence lizards (*Sceloporus occidentalis*) were observed throughout the Property. Other reptile species including Pacific gopher snake (*Pituophis catenifer catenifer*) and California king snake (*Lampropeltis californiae*) may also occur.

Seasonal Wetland/Pond/Emergent Marsh

The seasonal wetlands offer suitable habitat for various wildlife species. During the wet months, the full ponds can offer foraging habitat for avian species including but not limited to tricolored blackbird, killdeer (*Charadrius vociferous*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*) and various waterfowl species. Red-winged blackbird (*Agelaius phoeniceus)* and American crow were observed utilizing the large southwestern wetland during the August 2022 survey.

CTS larvae were observed to be present within the quarry pond during recent protocol-level surveys conducted for listed special-status branchiopods in 2018 and 2022.

The emergent marsh offers suitable habitat for several wildlife species including the special status CRLF. This feature is inundated with water year-round providing consistent habitat and foraging opportunities for CRLF in addition to other amphibians such as Sierran tree frog *(Pseudacris sierran)*. Multiple juvenile CRLF were observed during October 2022 within the road side ditch flowing alongside the emergent marsh and Croak Road. Other species observed foraging within this habitat include Cooper's hawk (*Accipiter cooperii*), coyote (*Canis Latrans),* Wilson's snipe (*Gallinago delicata),* black phoebe, Anna's hummingbird, and American crow.

Drainage

The intermittent drainage feature offers suitable breeding, foraging and dispersal habitat for various amphibian species including CRLF, sierran tree frog and western toad. CRLF adults, juvenile and larvae were observed within the intermittent drainage during day and nighttime surveys completed in October 2022. The ephemeral drainage features can provide habitat for amphibian species during and immediately after rain events but will mostly act as non-native grassland and provide similar habitat for the species listed above.

Riparian Woodland

Although limited in extent, the riparian woodland area within the Property may provide suitable nesting habitat for a number of passerine and raptor avian species, as well as provide suitable roosting habitat for bats including potentially sensitive species such as the pallid and Yuma myotis bats. CRLF and other amphibian species are known to use this habitat for foraging and breeding such as the sierran tree frog.

BIRDS

Tricolored Blackbird (*Agelaius tricolor*). Federal Species of Special Concern, California Species of Special Concern.

A close relative of the red-winged blackbird, the tricolored blackbird is distinguished by a white patch underscoring the bright red epaulettes that are prominent in the males of both species. Often found co-mingling in large flocks with red-winged blackbirds, this species is highly colonial. Nesting colonies usually occur in marshy habitats, often in large stands of blackberry, thistle, mustard and cattail.

The CNDDB listed six occurrences of tricolored blackbird within five miles of the Property. The closest occurrence (Occurrence #254) was observed approximately 0.6 miles southwest of the Property where several freshwater marshes are located. The willows located within the wetland habitat and the riparian corridors offer suitable habitat for foraging and nesting. Therefore, there is a high potential for tricolored blackbirds to occur in a nesting and/or foraging capacity.

<u>Burrowing Owl (*Athene cunicularia*). Federal Species of Special Concern, California Species of Special Concern.</u>

The U.S. Fish and Wildlife Service has identified the burrowing owl is as a "candidate" species. Candidate species are animals and plants that may warrant official listing as threatened or endangered, but there is no conclusive data to give them this protection at the present time. As a candidate species, burrowing owls receive no legal protection under the Endangered Species Act (ESA). However, this species does receive some legal protection from the U.S. through the Migratory Bird Treaty Act, which forbids the destruction of the birds and active nests. In California, the burrowing owl considered a "species of special concern."

Burrowing owls are ground dwelling members of the owl family and are small brown to tan colored birds with bold spots and barring. Burrowing owls generally require open annual grassland habitats in which to nest, but can be found on abandoned lots, roads, airports, and other urban areas. Burrowing owls generally use abandoned California ground squirrel holes for their nesting burrow but are also known to use pipes or other debris for nesting purposes. Burrowing owls prefer annual grassland habitats with low vegetative cover. The breeding season for burrowing owls occurs from March through August. Burrowing owls often nest in loose colonies about 100 yards apart. They lay three to twelve eggs from mid-May to early June. The female incubates the clutch for about 28 days, while the male provides her with food. The young owls begin appearing at the burrow's entrance two weeks after hatching and leave the nest to hunt for insects on their own after about 45 days. The chicks can fly well at six weeks old.

The CNDDB listed 26 occurrences of burrowing owl within five miles of the Property. The closest occurrence (Occurrence #457) was observed approximately 0.75 miles south of the Property adjacent to the Livermore airport. The Property has suitable grassland habitat for burrowing owl, and an abundance of ground squirrel burrows were observed on site. For these reasons the burrowing owl has a high potential to occur on the Property in nesting and foraging capacity and is likely to occur.

<u>California Horned Lark (*Eremophila alpestris actia*). California Species of Special Concern.</u>

The California horned lark is one of five subspecies of the horned lark. Males of this species have a distinct crest of black feathers originating above the eye that gives the appearance of "horns." The subspecies *actia* is distinguished from other subspecies by the pale-yellow shading that is restricted to the face and throat. This species typically inhabits dry, open grasslands and alkali flats. California horned larks prefer open terrain where they construct nests on the ground, often in sparsely vegetated areas. The highest nesting densities are generally found in annual grassland and oak savannah habitats in the foothill regions.

The CNDDB did not list the California horned lark as occurring within five miles of the Property. However, the annual grassland within and surrounding the Property offers potentially suitable nesting habitat. In addition, foraging opportunities occur across the Property. Given the information above the California horned lark has moderate potential to occur on the Property in a foraging and nesting capacity.

White-tailed Kite (*Elanus leucurus*). Federal Species of Concern, CDFW: Fully Protected.

The white-tailed kite is falcon-shaped with a long white tail. This raptor has black patches on the shoulders that are highly visible while the bird is flying or perching. White-tailed kites forage in annual grasslands, farmlands, orchards, chaparral, and at the edges of marshes and meadows. They are found nesting in trees and shrubs such as willows (*Salix sp.*), California sycamore (*Platanus racemosa*), and coast live oak (*Quercus agrifolia*) often near marshes, lakes, rivers, or ponds. This raptor often hovers while inspecting the ground below for prey. The White-tailed Kite eats mainly small mammals, as well as some birds, lizards, and insects. Annual grasslands are considered good foraging habitat for white-tailed kites, which will forage in human-impacted areas.

The CNDDB listed two occurrences of white-tailed kite within five miles of the Property. The closest occurrence (Occurrence #81) was observed approximately 2.9 miles northwest of the Property within a coast live oak savanna near the intersections of Contra Costa County and Alameda County. The large trees present within and surrounding the Property offer suitable nesting habitat. In addition, foraging opportunities occur throughout the Property in the grassland habitat. Given the information above the white-tailed kite has high potential to occur on the Property in a nesting and foraging capacity.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Species of Special Concern, California Species of Special Concern.

The loggerhead shrike is a black and white perching bird with a black face mask that extends over the bill. A common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches. It occurs only rarely in heavily urbanized areas, but is often found in open cropland. This species hunts large insects, small rodents and even small birds. Loggerhead shrikes are known for their habit of impaling their food on thorns or barb wire for future consumption. The range and habitat for the loggerhead shrike has steadily shrunk due to human development within grasslands; however, this species is often found on lands grazed by cattle that are fenced with barb wire. These birds use shrubs, dense trees, and thickets of vegetation for nesting sites.

The CNDDB did not list the loggerhead shrike as occurring within five miles of the Property. However, the trees and shrubs within and surrounding the Property offer potentially suitable nesting habitat. In addition, foraging opportunities occur across the Property. Given the information above the loggerhead shrike has high potential to occur on the Property in a foraging and nesting capacity.

Northern Harrier (*Circus hudsonius*). California Species of Special Concern.

Northern harriers require open annual grassland habitats and prefer dense ground vegetation or grasses in which to build nests. They are distinguished from other similar species by their prominent white rump patch. Males are pale gray in color, while females are brown with dark streaking on the breast. These birds are ground nesters and utilize habitats ranging from annual grassland to seasonal wetland for this purpose. This species breeds once per season, with primary females breeding from April to July, and secondary females breeding from May through September. Northern harriers' nest on the ground usually preferring dense vegetation clumps for cover such as willows, grasses, sedges, reeds, bulrushes, and cattails. An average of four eggs per clutch will take 28 to 36 days to hatch with the young fledging 30 to 35 days after hatching.

The CNDDB lists one occurrence of the northern harrier within five miles of the Property. This occurrence (Occurrence #27; 1992) is located 3.4 miles north of the Property just east of Tassajara Road. The open grassland provides nesting and foraging opportunities for this species. Given the information above, and the fact the occurrence is not recent, the northern harrier has a moderate potential to occur on the Property in a nesting and foraging capacity.

Golden Eagle (*Aquila chrysaetos*). California Species of Special Concern, State Protected.

The golden eagle is typically found in open grasslands, pastures, and oak woodland, often near lakes and rivers. Their plumage is dark brown overall, with some white at the base of the tail, and golden-to-blonde feathers on the nape of the neck. The bill and talons are black and the cere (soft membrane that covers the nostrils) and feet are yellow. Immature birds have a broad, white tail band with a black edge and large white patches on the undersides of the wings at the base of the primary feathers. Adult males weigh nine pounds with adult females weighing 12.5 pounds. Masters of soaring, golden eagle can reach speeds up to 200 mph with their 6.5-to-7.5-foot wingspans.

The CNDDB lists one occurrence of golden eagle within five miles of the Property. This occurrence (Occurrence #84) is located 3.1 miles north of the Property, just east of Tassajara Road. There is a known active golden eagle nest present at this location. The open grassland provides ample foraging opportunities for this species; however, there are no large trees present within the immediate vicinity to support this species in a nesting capacity. Given the information above, the golden eagle has a high potential to occur on the Property in a foraging capacity only.

American Peregrine Falcon (*Falco peregrinus anatum*). Federally Delisted, State Endangered, CDFW: Fully Protected.

The American peregrine falcon is a wide-bodied raptor with a dark nearly black head resembling a hood. Steel blue back and tail, pale to white breast and underwings. Small black horizontal bars on belly, legs, underwings and undertail. Black mustache markings, yellow base of bill, eye rings, legs and feet. Forages on the wing, catching prey in the air or on the ground. It is found mostly in open terrain including farmland, marshes and even urban environments. Prey items include waterbirds, rock doves, and other small birds and mammals. Peregrine falcons need tall sheltered areas such as cliffs or tall buildings for cover. They are increasingly able to exploit urban habitats for both foraging and nesting sites.

The CNDDB lists one occurrences of the American peregrine falcon within five miles of the Property. This occurrence (Occurrence #56) located 2.8 miles from the Property within a rocky outcropping in chapparal habitat. The open grassland provides suitable foraging opportunities for this species. Given the information above, the American peregrine falcon has a high potential to occur on the Property in a foraging capacity only.

In addition to the raptor species listed above, the following raptor and owl species protected under the Migratory Bird Treaty Act, also have a high to moderate potential to occur on the Property in a nesting and/or foraging capacity. More information regarding their habitat and nesting and foraging behavior can be found in Table 2.

- American kestrel (*Falco sparverius);* observed foraging during the August 2022 survey.
- Cooper's hawk (*Accipiter cooperii)*; observed foraging during the August 2022 survey.
- Red-tailed hawk (*Buteo jamaicensis)*; observed nesting behavior during a 2022 protocol shrimp survey and foraging during the August 2022 survey.
- Red-shouldered hawk (*Buteo lineatus);* observed foraging during a 2022 protocol shrimp survey.
- Great-horned owl (*Bubo scandiacus)*
- Western screech owl (*Megascops kennicottii)*
- Barn owl (*Tyto alba)*

- Ferruginous hawk (*Buteo regalis)*

There were two occurrences on CNDDB of ferruginous hawk (Occurrences #26 and #67) within five miles of the Property. However, the Property is not within the nesting range of ferruginous hawk, therefore, this species will be present on a foraging capacity only.

MAMMALS

<u>Special-status Bats</u>

Bats (Order - *Chiroptera*) are the only mammals capable of "true" flight. They are nocturnal feeders and locate their prey, which consists of small to medium sized insects by echolocation. Bats consume vast amounts of insects making them very effective pest control agents. They may eat as much as their weight in insects per day. Maternity roosts comprised of only females, may be found in buildings or mine shafts with temperatures up to 40 degrees Celsius and a high percentage of humidity to ensure rapid growth in the young. Female bats give birth to only one or two young annually and roost in small or large numbers. Males may live singly or in small groups, but scientists are still unsure of the whereabouts of most males in summer.

Special-status bats with the potential to occur on the Property are listed below:

- Pallid bat (*Antrozous pallidus)*

The CNDDB listed pallid bat (Occurrence #331) and Townsend's big-eared bat (Occurrence #422) as occurring within the 5-mile radius of the Property. The habitats provided on and near the Property provide an array of insects allowing for abundant foraging opportunities. Given the presence of suitable roosting habitat and foraging opportunities; the pallid bat has a moderate potential to occur on the Property in a foraging and roosting capacity. Townsend's bats are very sensitive to disturbance; therefore, as this Property is adjacent to a busy highway and residential development, it is unlikely that Townsend's bats would find the suitable roosting habitat and are not likely to occur.

Additionally, other non-special status bat species such as the Yuma myotis could also utilize the above habitats in a roosting and foraging capacity. Given the above information, multiple species of bats have a moderate potential to occur on the Property in a roosting and foraging capacity.

<u>San Joaquin Kit Fox (*Vulpes macrotis mutica*). Federally Endangered, State Threatened.</u>

The San Joaquin kit fox (SJKF) has a slim body with large, conspicuous ears, and a long, bushy, black tipped tail. It is the smallest canid species in North America. The SJKF lives in annual grassland habitats where friable soils are present in which they may excavate den sites. The general habitat requirement for the kit fox is annual grasslands or grassy open habitat stages with scattered shrubby vegetation. Food requirements for the SJKF are rodents, insects, and even garbage in urbanized areas. Grassland habitats with a large rodent prey base and loose textured soils are thought to provide the best habitat for the SJKF.

A large band of potential habitat is indicated as a corridor in which the SJKF may occur in the southwestern corner of the Brentwood quadrangle map. On the Antioch South quadrangle map this zone continues northwest across the map and is located over two and a half miles south of the Property. The Property lies well outside the band of potential SJKF habitat identified by the CNDDB. The corridor that has been identified as potential habitat for the SJKF by the CNDDB was developed by using a one mile radius around specific point locations where scat or a den site was documented. The composite of all the point locations for SJKF overlaid together during a 20-year period combined to define the corridor that has been identified by the database. The goal of the database was to identify a habitat zone for SJKF rather than unrelated point locations, as the SJKF is highly mobile and will use a larger area than what a point location would represent.

The CNDDB lists one occurrence for SJKF within five miles of the Property. This occurrence (Occurrence #1031, 1975) was located 1.5 miles northwest of the Property near Tassajara Creek Regional Park. Due to the lack of substantial burrows, dispersal barriers, and no recent CNDDB occurrence (within 20 years) SJKF has a low potential to occur on the Property and is presumed absent.

American Badger (*Taxidea taxus*). California Species of Special Concern.

This large member of the weasel family is an excellent digger, with a flat body with short, stout legs ideally suited for digging burrows. A distinctive white stripe extends from the nose, and over the back of the head, that is rather small in proportion to its body. This species has long foreclaws which they use to excavate dens for refuge, food caches, and birthing sites. Their den entrance is generally shaped like a sideways "D" with the excavated soil piled outside of the entrance. Found in open plains, prairies, forests and grasslands, this carnivorous species feeds on ground squirrels, mice, and gophers, but will also consume rattlesnakes and other reptiles, and ground-nesting birds such as burrowing owl. Primarily solitary outside of the breeding season, badgers mate during late summer, but do not give birth until March or April.

The CNDDB lists five occurrences of American badger within five miles of the Property. The closest occurrence for American badger (Occurrence #349, 2004) was located 2 miles northwest of the Property adjacent to Camp Parks U.S. Army base. Due to the lack of substantial burrows and visual evidence, American badger has a low potential to occur on the Property and is presumed absent.

AMPHIBIANS

California Red-Legged Frog (*Rana draytonii*). Federally Threatened, California Species of Special Concern.

California red-legged frog (CRLF) was listed as a Federal threatened species on May 31, 1996 (61 FR 25813) and is considered threatened throughout its range. If a proposed Property may jeopardize listed species, Section 7 of the ESA requires consideration of those species through formal consultations with the USFWS. Federal Proposed species (USFWS 2022) are species for which a proposed listing as Threatened or Endangered under the ESA has been published in the Federal Register. If a proposed Property may jeopardize proposed species, Section 7 of the ESA affords consideration of those species through informal conferences with USFWS. On April 13, 2006, USFWS designated critical habitat for the CRLF under the ESA. In total, approximately 450,288 acres fell within the boundaries of critical habitat designation. A new ruling by the USFWS on March 17, 2010, revised the designation of critical habitat for CRLF (75 FR 12815 12959). In total, approximately 1,636,609 acres of critical habitat in 27 California counties fall within the boundaries of the final revised critical habitat designation. This rule became effective on April 16, 2010.

The CRLF is a rather large frog, measuring one and a half to five inches in length. They are reddish-brown to gray in color, with many poorly defined dark specks and blotches. Dorsolateral folds are present. The underside of the CRLF is washed with red on the lower abdomen and hind legs. The CRLF has a dark mask bordered by a light stripe on the jaw, smooth eardrums, and not fully webbed toes. The male has enlarged forearms and swollen thumbs. Its vocals consist of a series of weak throaty notes, rather harsh, and lasting two to three seconds. Breeding occurs from December to March with egg masses laid in permanent bodies of water.

The CRLF is found in lowlands, foothill woodland and grasslands, near marshes, lakes, ponds or other water sources. These amphibians require dense shrubby or emergent vegetation closely associated with deep still or slow-moving water. Generally, these frogs favor intermittent streams with water at least two and a half feet deep and where the shoreline has relatively intact emergent or shoreline vegetation. CRLF is known from streams with relatively low gradients and those waters where introduced fish and bullfrogs are absent. CRLF are known to take refuge upland in small mammal burrows during periods of high-water flow. CRLF occurs west of the Sierra Nevada-Cascade and in the Coast Ranges along the entire length of the state. Historically, they occurred throughout the Central Valley and Sierra Nevada foothills south to northern Baja

California. Now they are found from Sonoma and Butte Counties south to Riverside County, but mainly in Monterey, San Luis Obispo, and Santa Barbara Counties.

The CNDDB listed 40 occurrences of the CRLF occurring within five miles of the Property. There were two occurrences (Occurrence #279 and #860) which intersect with the Property. The seasonal ponds and intermittent drainage offer suitable habitat to support breeding, upland refuge and dispersal. The seasonal pond offers adequate water during the wet months that support breeding, while the surrounding small mammal burrows provide upland refuge. The northern half of the Property intersects with USFWS designated critical habitat for CRLF (Unit CCS-2B) (Attachment 1, Figure 7). CRLF were found on the Property during a protocol- level surveys conducted for special-status branchiopods in 2018 and again while presence/absence surveys took place for CRLF in October 2022. CRLF are known to occur on site in a breeding and foraging capacity.

California Tiger Salamander (*Ambystoma californiense*). Federally Threatened, State Threatened.

Adult California tiger salamanders (CTS) inhabit rolling grassland and oak savanna. Adults spend most of the year in subterranean retreats such as rodent burrows, but may be found on the surface during dispersal to and from breeding sites. The preferred breeding sites are vernal pools and other temporary ponds. However, CTS may use permanent manmade ponds as breeding habitat. CTS adults begin migrating to ponds after the first heavy rains of fall and can be found in or around the breeding ponds during and after winter rainstorm events. In extremely dry years, CTS may not reproduce.

After mating, females lay several small clusters of eggs, which contain from one to over 100 eggs. The eggs are deposited on both emergent and submerged vegetation, as well as submerged detritus. A minimum of ten weeks is required to complete larval development through metamorphosis, at which time the larvae will normally weigh about ten grams. Larvae remaining in pools for a longer time period can grow to much larger sizes. Upon metamorphosis, juvenile CTS migrate in large masses at night from the drying breeding sites to refuge sites. Prior to this migration, the juveniles spend anywhere from a few hours to a few days near the pond margin. Adult CTS are largely opportunistic feeders, preying upon arthropod and annelid species that occur in burrow systems, as well as aquatic invertebrates found within seasonal pools. The larvae feed on aquatic invertebrates and insects, showing a distinct preference for larvae of the Pacific tree frog.

On August 4, 2004, the USFWS announced the listing of the CTS as threatened throughout its range with the exception of the Sonoma and Santa Barbara County populations which are listed as endangered (USFWS 2004). On March 3, 2010, the California Fish and Game Commission designated CTS as threatened under the California Endangered Species Act. On August 23, 2005, the Service designated 199,109 acres of critical habitat in 19 counties for the central California population of the CTS. On August 2, 2005, they proposed 74,223 acres of critical habitat for CTS in Sonoma County, California. This habitat is located in the Santa Rosa Plain in central Sonoma and includes lands bordered on the west by Laguna de Santa Rosa, to the south by Skillman Road, northwest of Petaluma, to the east by foothills, and to the north by Windsor Creek. On December 14, 2005, in a final decision, USFWS designated and excluded 17,418 acres of critical habitat for CTS, so that no critical habitat is being designated for the Sonoma County population.

The CNDDB has listed 58 occurrences of CTS occurring within five miles of the Property. The location of the closest occurrence (Occurrence #893) from 2003, intersects with the Property. The most recent occurrence (Occurrence #1262) from 2021 is located approximately 4.5 miles southeast of the Property. The closest USFWS designated critical habitat for CTS (Unit cv_18) is approximately 2 miles northeast of the Property (Attachment 1, Figure 7). The Property offers suitable breeding and upland refuge habitat within the seasonal pond and the small mammal burrows. CTS were found on the Property within the seasonal pond on the Anderson Parcel during protocol-level surveys conducted for special-status branchiopods in early 2022. CTS are known to occur on the Property in a breeding and dispersal capacity.

REPTILES

Alameda Whipsnake (*Masticophis lateralis euryxanthus*). Federally Threatened, State Threatened.

The Alameda whipsnake is one of two subspecies of the California whipsnake. It is distinguished from the chaparral whipsnake (*M. l. lateralis*) by the broad orange striping on its sides. Adults reach approximately three to five feet in length and show a sooty black to dark brown back, cream colored undersides and pinkish tail. This species is typically found in chaparral, northern coastal sage scrub, and coastal sage habitats; however annual grasslands, oak woodlands, and oak savannah serve as habitat during the breeding season. Egg-laying occurs near scrub habitat on ungrazed grasslands with scattered shrub cover. The known distribution for Alameda whipsnake includes Sobrante Ridge, Oakland Hills, Mount Diablo, the Black Hills, and Wauhab Ridge.

Male and female snakes are active from April to November finding mates. During the breeding season from late March through mid-June, male snakes exhibit more movement throughout their home range, while female snakes remain sedentary from March until egg laying. Females lay a clutch of 6 to 11 eggs, usually in loose soil or under logs or rocks.

The CNDDB lists one occurrence of Alameda whipsnake within five miles of the Property. The location of this occurrence (Occurrence #39; 1991) is approximately 4.9 miles southwest of the Property. The closest USFWS designated critical habitat for Alameda whipsnake (Unit 3) is approximately 4.7 miles southwest of the Property. This occurrence lies just outside of the formal boundary of designated critical habitat. Due to the lack of rocky outcropping, no recent CNDDB occurrences (within 20 years), and the Property being surrounded by development on all three sides creating a dispersal barrier, Alameda whipsnake has a low potential to occur on the Property and is presumed absent.

Western Pond Turtle (*Emys marmorata*). California Species of Special Concern.

The western pond turtle is a thoroughly aquatic turtle that may be found in marshes, ponds, streams and irrigation ditches where aquatic vegetation is present. The turtles, which range from nine to ten inches in size, require basking sites and suitable upland habitat for egg laying. Suitable breeding upland habitats may consist of sandy banks or grassy open fields. The western pond turtle has a dark brown to olive-colored carapace with hexagonal scales that lack prominent markings.

Nesting and incubation occur from April to September, with a peak time for mating and egg laying occurring from March to May. After a 73 to 80-day gestation or incubation period, 5 to 13 eggs will be laid from July to October. Eggs are produced either once or twice a year. Females may travel some distance from water for egg-laying, moving as much as 0.8 kilometers (a hale mile) away from and up to 90 meters (300 feet) above the nearest source of water. Most nests are with 90 meters (300 feet) of water. The female usually leaves the water in the evening and may wander far before selecting a nest site, often in an open area of sand or hardpan that is facing southwards. The nest is flask-shaped with an opening of about five centimeters (two inches). Females spend considerable time covering up the nest with soil and adjacent low vegetation, making it difficult for a person to find unless it has been disturbed by a predator.

Activity slows from November to February. During the winter when water and air temperatures cool, usually from September to March, the turtles begin to hibernate. During hibernation, turtles either bury themselves in the mud at the bottom of ponds or will bury themselves on land in duff (top layer of decomposing vegetation and soil). Some turtles travel more than a half mile to over-winter on land, though many select the nearest wooded or shrubby area they can bury in. Turtles then emerge from hibernation in the spring to start the yearly cycle again.

CNDDB has listed 11 occurrences of western pond turtle within five miles of the Property. The closest CNDDB occurrence (Occurrence #1251) is located 0.75 miles east of the Property just north of Highway 580 within a pond. The permanent water located within the intermittent drainage in the northwest corner of the Property offers suitable habitat for WPT. Therefore, WPT has a moderate potential to occur on the Property.

INVERTEBRATES

Special Status Branchiopods (*Branchinecta* spp.) Federally Threatened or Endangered

The federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*) is approximately three quarters of an inch in length. This species inhabits seasonal wetlands such as alkaline pools, intermittent drainages, drainage ditches, oxbows, stockponds, and vernal pools and swales. Like the longhorn fairy shrimp, eggs become encysted during dry periods and hatch when seasonal wetlands refill. Threats to the vernal pool fairy shrimp include loss of habitat, agriculture, foot traffic, and off-road vehicles.

The federally endangered longhorn fairy shrimp (*Branchinecta longiantenna)* is a small aquatic crustacean is 0.5 to 0.8 inches in length and has an elongated boy, large compound eyes on stalks, and eleven pairs of swimming legs. They can be found in clear to turbid vernal pools feeding on algae, bacteria, and detritus. Eggs are laid in vernal pools and become encysted during the dry season, hatching when the pools refill. The longhorn fairy shrimp is found in isolated locations from Contra Costa County to San Luis Obispo County.

CNDDB lists one occurrence of vernal pool fairy shrimp and one occurrence of longhorn fairy shrimp within five miles of the Property. The location of the vernal pool fairy shrimp occurrence (Occurrence #99; 2000) is located 4.2 miles northeast of the Property within an alkali sink. The location of the longhorn fairy shrimp occurrence (Occurrence #24; 2018), is located 4.8 miles east of the Property. The closest USFWS critical habitat for vernal pool fairy shrimp (Unit C) is approximately 4.2 miles east of the Property in unincorporated Alameda County. There is suitable habitat onsite for these species; however, wet season protocol surveys conducted in 2018 and 2022 and dry season protocol surveys conducted in 2022 discovered only the versatile fairy shrimp (*Branchinecta lindahli)* to be present. No special status shrimp were observed during these surveys. Given this information the vernal pool fairy shrimp and longhorn fairy shrimp are presumed absent from the site.

7.0 CONCLUSIONS

7.1 Wetlands

Results of the biological resource analysis survey conducted by Olberding Environmental indicate that the Property contains wetlands/waters that are considered jurisdictional by the Army Corps of Engineers, RWQCB and CDFW. A jurisdictional delineation has been prepared and verified by the Corps, however changes to the surrounding hydrology indicates that site conditions may change which would warrant additional fieldwork with a reverification from the Corps.

7.2 Special-status Plants

Results of the biological resource analysis and rare plant surveys conducted by Olberding Environmental indicate that the Property has three special-status plant species occurring on the Property: San Joaquin spearscale, Congdon's tarplant, and saline clover. Additional species such as the Large flowered-fiddleneck, alkali milk vetch, heartscale, brittlescale, lesser saltscale, big tarplant, round-leaved filaree, prostrate vernal pool navarretia, hairless popcorn flower and long-styled sand spurrey were surveyed for on the Property at the appropriate blooming period. These nine plants were found to be absent from the Property. A rare plant survey report has been prepared as a separate document. No additional surveys are warranted.

7.3 Special-status Wildlife

Foraging or Nesting Raptor/Passerine Species – A total of 17 bird species were identified as having potential to occur on the Property. Three species - red-tailed hawk, American kestrel, and Cooper's hawk - were all observed during the August 2022 survey and potentially utilize the Property in a foraging and/or nesting capacity. A red-tailed hawk has utilized the eucalyptus trees on the Anderson Parcel in a nesting capacity during previous years.

Nine bird species including the tricolored blackbird, burrowing owl, loggerhead shrike, great-horned owl, white-tailed kite, western screech owl, red-shouldered hawk and barn owl were all identified to have a high potential to occur on the site in a nesting and foraging capacity. The northern harrier and California horned lark were identified as having a moderate potential to be present on the Property, while the sharp-shinned hawk, golden eagle, ferruginous hawk, and the American peregrine falcon have a potential to occur on the Property in a foraging capacity only

Special-Status Mammals – Given the presence of suitable onsite habitat; the pallid bat and Yuma myotis have a moderate potential to occur on the Property in a foraging and roosting capacity. The Townsend's big-eared bat has a low potential to occur on the Property due to the nearby human disturbance. No immediate signs were present during the initial survey, but the riparian trees and the large eucalyptus and oak trees could provide roosting habitat while the wetlands and drainages could provide foraging opportunities. The Property was surveyed signs of American badger and the federally endangered San Joaquin kit fox, but none were observed. With the lack of recent CNDDB occurrences (within 20 years) and substantial burrows San

Joaquin kit fox is presumed absent from the Property. Due to the lack of burrows and visual evidence American badger is also presumed absent from the Property.

Special-Status Amphibians – Two amphibian species, CRLF and CTS, have been observed on the Property during various surveys. Both species have many CNDDB occurrences within five miles including a large population of CRLF just north of the Property within the Jordan Ranch ponds and drainage channel. USFWS designated critical habitat for CRLF intersects with the northern half of the Property and the CTS critical habitat is located 2 miles northeast of the Property. CRLF have been observed within the Property and just adjacent to the Property within the ditch along Croak Road. The quarry pond provides suitable breeding habitat for CTS and were found present on the Property in March 2022. The Property contains suitable habitat for breeding and dispersal in the seasonal wetlands and drainages for CRLF and the multiple ground squirrel burrow complexes provide both species with suitable upland refuge. CRLF and CTS are present on-site and are likely to continue to utilize the site in a breeding, foraging and dispersal capacity.

Special-Status Reptiles – The Alameda whipsnake was identified by the CNDDB as occurring within five miles of the Property; however, after an assessment of the Property, it was concluded that the site does not provide habitat to support Alameda whipsnake. Due to the distance of the CNDDB occurrence and the abundance of dispersal barriers, Alameda whipsnake is presumed absent. The CNDDB listed western pond turtle as occurring within five miles of the Property. Given the intermittent drainage located within the northwest corner of the Property, and the closest CNDDB occurrence within one mile of the Property, western pond turtle has a potential to occur on the Property.

Special Status Invertebrates – The vernal pool fairy shrimp and longhorn fairy shrimp were identified by the CNDDB as occurring within five miles of the Property; suitable habitat in the form of seasonal wetlands/ponds occur within the Property, however, after wet and dry season protocol surveys were conducted in 2018 and 2022 with negatives findings these species are presumed absent. A listed branchiopod survey report has been prepared as a separate document. No additional surveys are warranted.

8.0 RECOMMENDATIONS

- **Corps and State Regulated Wetlands/Waters** – Jurisdictional wetlands and waters regulated under the authority of the Corps, RWQCB, and CDFW are present on the Property. Fill of these regulated features may require authorization under Sections 404 and 401 of the Clean Water Act (CWA) and authorization under Section 1600 of the Fish and Wildlife Code. An updated Corps wetland delineation should be prepared to document if any changes to the extent of jurisdictional features has occurred. This should take place prior to any construction activity that could result in impacts to wetlands/waters. If the wetlands/waters are deemed jurisdictional and construction activities are proposed that could impact these features, permits must be obtained prior to construction. Setbacks from the wetlands/water features may be required to protect habitat quality and to protect water quality. Permitting to allow impacts to wetlands/waters features will require mitigation.

- **Pre-Construction Avian Survey** – If project construction-related activities take place during the nesting season (February through August), preconstruction surveys for all nesting birds (including waterfowl, passerines, raptors, and other birds) within and adjacent to (within 1,000 feet) the Property should be conducted by a competent biologist 14 days prior to the commencement of the tree removal or site grading activities. Surveys should focus on areas where birds are likely to nest, including trees, shrubs, grasslands, rock faces, stream banks, or under eves of structures. If any bird listed under the Migratory Bird Treaty Act is found to be nesting within the project site or within the area of influence, an adequate protective buffer zone should be established by a qualified biologist to protect the nesting site. This buffer shall be a minimum of 75 feet from the project activities for small passerine birds, and a minimum of 250 feet for raptors. The distance shall be determined by a competent biologist based on the site conditions (topography, if the nest is in a line of sight of the construction and the sensitivity of the birds nesting). The nest site(s) shall be monitored by a competent biologist periodically to see if the birds are stressed by the construction activities and if the protective buffer needs to be increased. Once the young have fledged and are flying well enough to avoid project construction zones (typically by August), the project can proceed without further regard to the nest site(s). Active nests, including those in the process of being constructed shall not be disturbed. Surveys shall be repeated in areas where Project activities lapse for a period of 7 days or more.

- **Burrowing Owl Surveys** – A burrowing owl pre-construction survey should take place before any construction activities commence. Occupancy of burrowing owl habitat is confirmed at a site when at least one burrowing owl or its sign at or near a burrow entrance is observed within the last three years. If a burrowing owl or sign is present on the Property three additional protocol level surveys will be initiated. Once these surveys have been completed to identify the owl's location, disturbance buffers should be placed around each active burrow. No disturbance should occur within 200 meters of occupied burrows during the breeding season (February 1 through August 31) and/or within 50 meters of occupied burrows during non-breeding season (September 1 through January 31). Pre-construction surveys shall be completed 14 days prior to initiating activities.

- **Special-status Bats Surveys –** For all Project activities planned in or adjacent to potential bat roosting habitat, such as structures and/or involving woody vegetation modification or removal of any and all trees, a qualified biologist shall conduct daytime and evening acoustic surveys in addition to extensive visual surveys of potential habitat for special-status bats at least 7 days prior to initiation of Project activities. If bats are found on-site, a qualified biologist shall identify the species, estimated quantity present, roost type, and roost status, but shall avoid disturbing bats during surveys. A qualified biologist shall also create a Bat Mitigation and Monitoring Plan if special-status bat species are detected prior to the start of Project activities. The Bat Mitigation and Monitoring Plan shall include: (1) an assessment of all Project impacts to special-status bats, including noise disturbance during construction; (2) effective avoidance and minimization measures to protect special-status bats; (3) and compensatory mitigation for permanent impacts to special-status bats or their nesting/roosting habitat. If structures, trees, or other refugia equivalents are slated for limbing, removal, or modification, the Bat Mitigation and Monitoring Plan shall include the following measures:

    - To ensure that special-status bats have left potential roosting refugia, work shall occur over the course of two days. On the first day, smaller limbs or items from the identified trees or structures shall be brushed back or modified in the late afternoon. This disturbance should cause any potential roosting bats to seek other roosts during their nighttime foraging. The remainder of the refugia item can then be further limbed or removed as needed on the second day as late in the afternoon as feasible. If bats are found injured, or if bat mortality occurs during the course of tree work, a qualified biologist shall record the species impacted, and the number of individuals documented.

    - Tree limbing, modification, removal, or work on structural refugia shall not be performed under any of the following conditions: during any precipitation events, when ambient temperatures are below 4.5 degrees Celsius, when windspeeds exceed 11 miles per hour, and/or any other condition which may lead to bats seeking refuge.

    - If special-status bats are found utilizing a tree, structure, or equivalent for roosting, the Bat Mitigation and Monitoring Plan shall include permanent artificial roosting habitat installations that shall be adjacent to, and sufficient for, the species observed and associated ecology thereof. Effective buffer zones for the installation and monitoring of the artificial roosts shall be determined and established by a qualified biologist.

- **Pre-construction CRLF Protocol Survey** - A qualified biologist shall survey the project site for CRLF (and other sensitive wildlife species) preceding the commencement of construction activities to verify location of the species. Surveys should be perform using USFWS protocol.

  - ***<u>Surveys Performed during the breeding season (October 1- June 30):</u>***
    USFWS recommends a total of up to eight surveys to determine the absence of CRLF at or a near a project site. Two day surveys and four night surveys would be required during the breeding season. If CRLF are identified at any time during the course of surveys, no additional surveys are needed.

  - ***<u>Surveys Performed during the non-breeding season (July 1- September 30)</u>***
    One day and one night survey would be required during the non-breeding season. At least one survey must be completed between January 1 and August 15. If CRLF are identified at any time during the course of surveys, no additional surveys are needed.

  The main purpose of day surveys during breeding season are to look for larvae, metamorphs and egg masses while the purpose for day surveys during non-breeding season are to look for metamorphosing sub-adults and non-breeding adults. Day surveys should be conducted between one hour after sunrise and one hour before sunset. Night surveys are used to identify and locate adult and metamorphosed frogs and are to take place no earlier than one hour after sunset.

- **Pre-construction Amphibian Surveys** – Directed pre-construction surveys for CTS and CRLF are recommended prior to construction activities. A qualified biologist shall survey the project site for CRLF and CTS preceding the commencement of construction activities to verify the location of the species. All ruts, holes, and burrows shall be inspected for CTS and CRLF prior to and during excavation or removal. The biological monitor shall precede initial grading equipment to look for and avoid amphibians that may be present on the Property. If any amphibians are found during initial grubbing a qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat outside the fenced Project site. A special-status amphibian Mortality Reduction and Relocation Plan may be required prior to commencement of project activities.

- **Pre-construction Upland CTS Survey –** An upland survey for CTS should be conducted preceding the commencement of construction activities. Survey protocols include the installation drift fences, pitfall traps, or coverboards in order to protect existing CTS on the Property. Additional protection measures such as environmental training of construction crews and biological monitoring will take place to reduce take of the species. If any amphibians are found during initial grubbing a qualified biologist possessing a valid ESA Section 10(a)(1)(A) permit or Service approved under an active biological opinion, will be contracted to trap and to move amphibians to nearby suitable habitat outside the fenced Project site. A special-status amphibian Mortality Reduction and Relocation Plan may be required prior to commencement of project activities.

- **Erosion Control** – Grading and excavation activities could expose soil to increased rates of erosion during construction periods. During construction, runoff from the Property could adversely affect aquatic life within the adjacent water features. Surface water runoff could remove particles of fill or excavated soil from the site, or could erode soil down-gradient, if the flow were not controlled. Deposition of eroded material in adjacent water features could increase turbidity, thereby endangering aquatic life, and reducing wildlife habitat. Implementation of appropriate mitigation measures would ensure that impacts to aquatic organisms would be avoided or minimized. Mitigation measures may include best management practices (BMP's) such as hay bales, silt fencing, placement of straw mulch and hydro seeding of exposed soils after construction as identified in the Storm Water Pollution Prevention Plan (SWPPP).

- **City Ordinance Adherence** – If any heritage trees are to be removed from the Property, a permit from the Director must be obtained. According the City of Dublin, a Heritage tree is considered as, any oak, bay cypress, maple, redwood, buckeye and sycamore having a trunk or main stem of 24 inches or more in diameter measured at four feet six inches above natural grade, a tree required to be preserved as part of an approved development plant, zoning permit, use permit, site development review or subdivision map, as well as a tree required to be planted as a replacement for an unlawfully removed tree. Tree removal requested as part of the development of a property subject to zoning, subdivision, conditional use permit, or site development review application approval shall be reviewed and approved by the body having final authority over the entitlement application. Ord. 5-02 § 2 (part): Ord. 29-99 § 1 (part)

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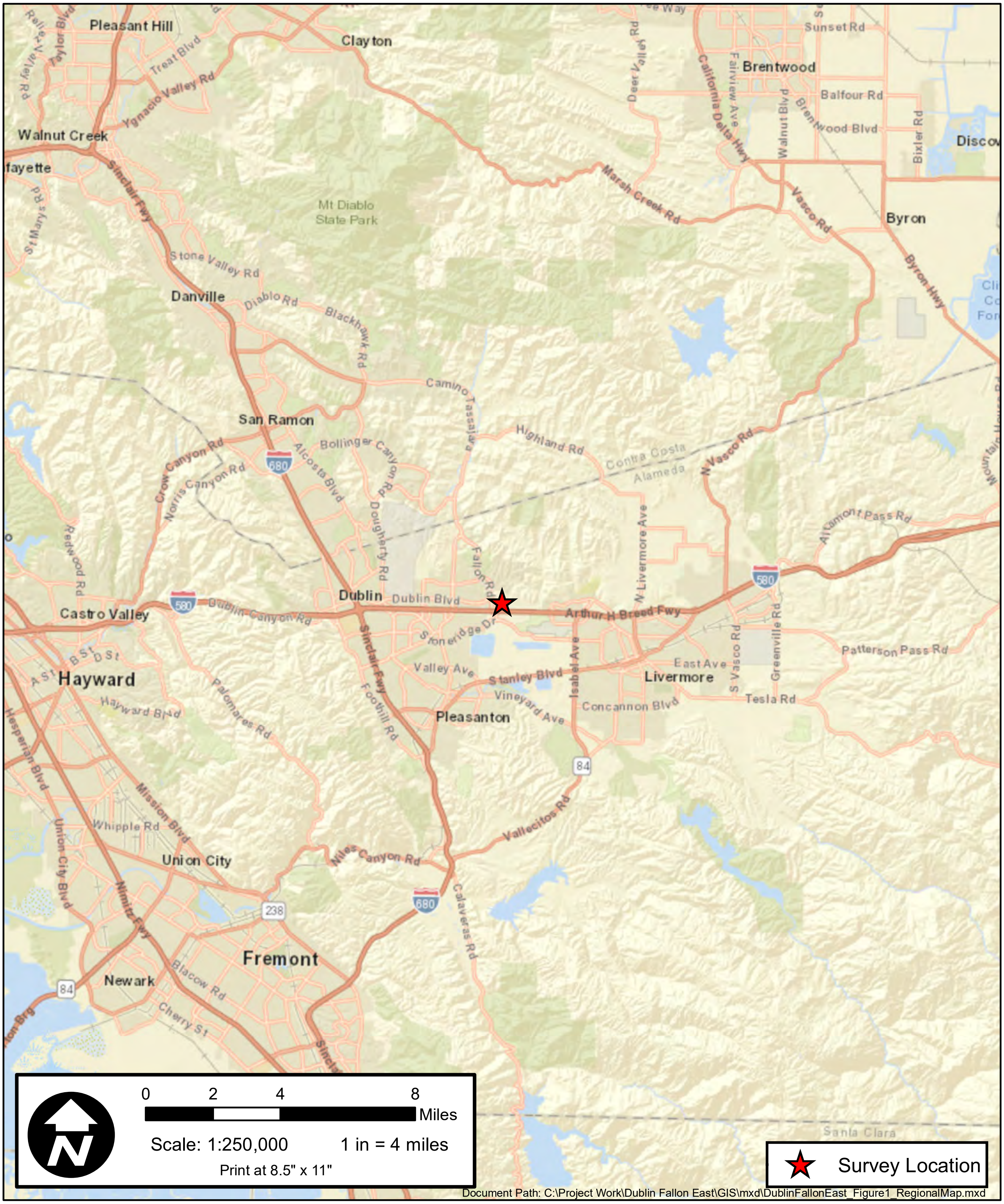
ATTACHMENTS

ATTACHMENT 1
FIGURES

Figure 1
Regional Map



193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 1: Regional Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 2
Vicinity Map

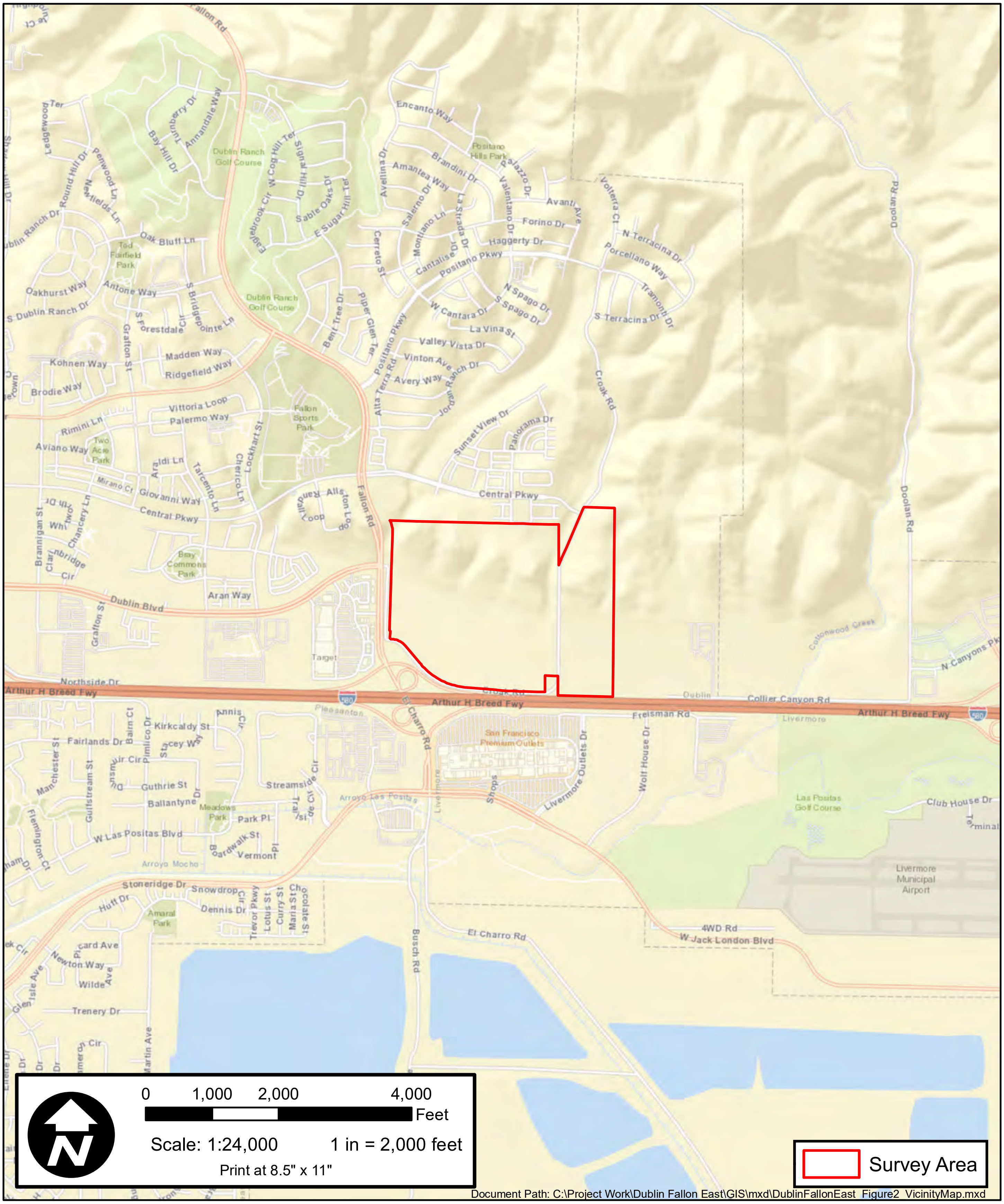


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Figure 2: Vicinity Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 3
USGS Quadrangle Map

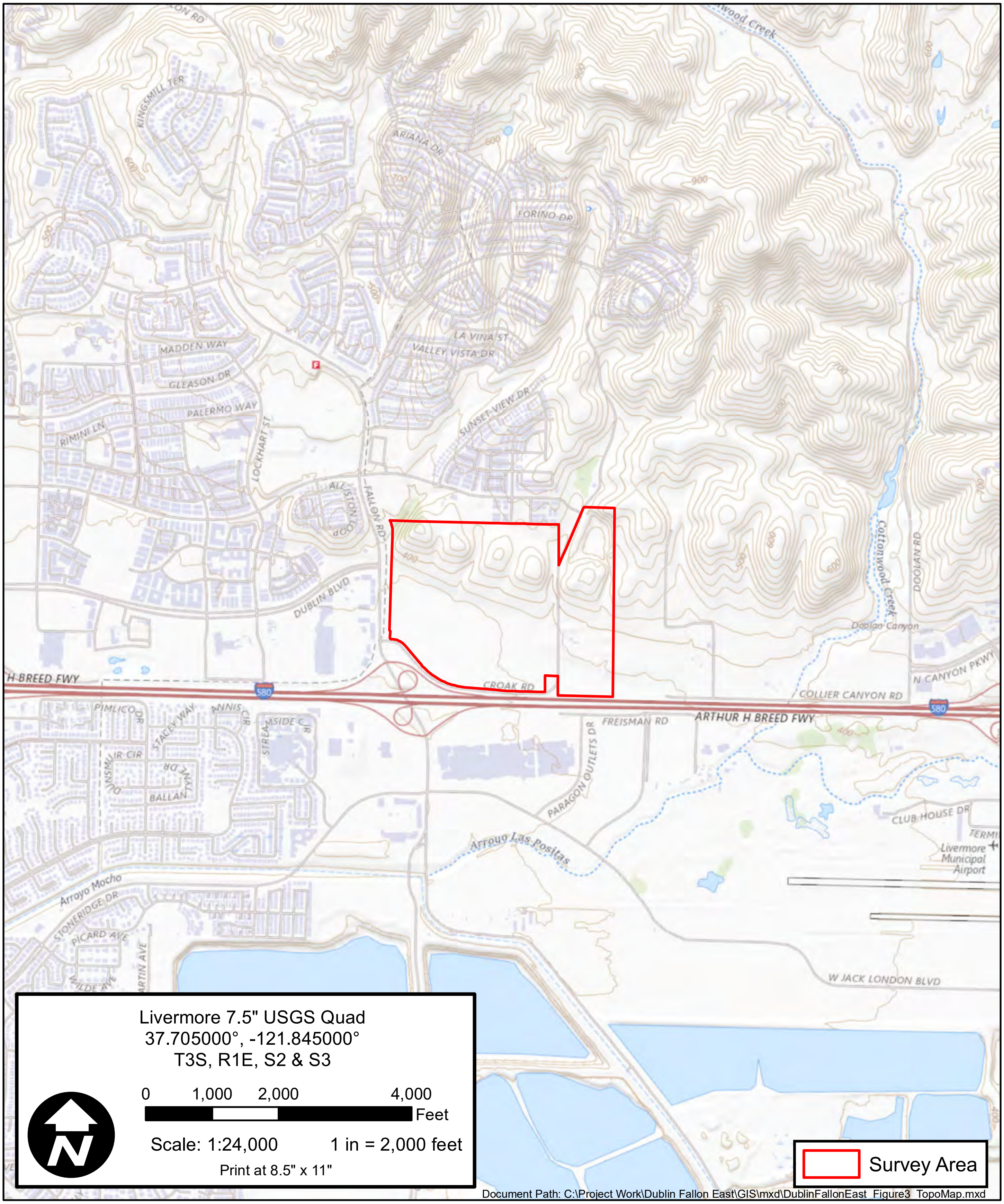

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Figure 3: USGS Topographic Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 4
Aerial Photograph

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Figure 4: Aerial Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 5
CNDDB Map of Special Status Wildlife

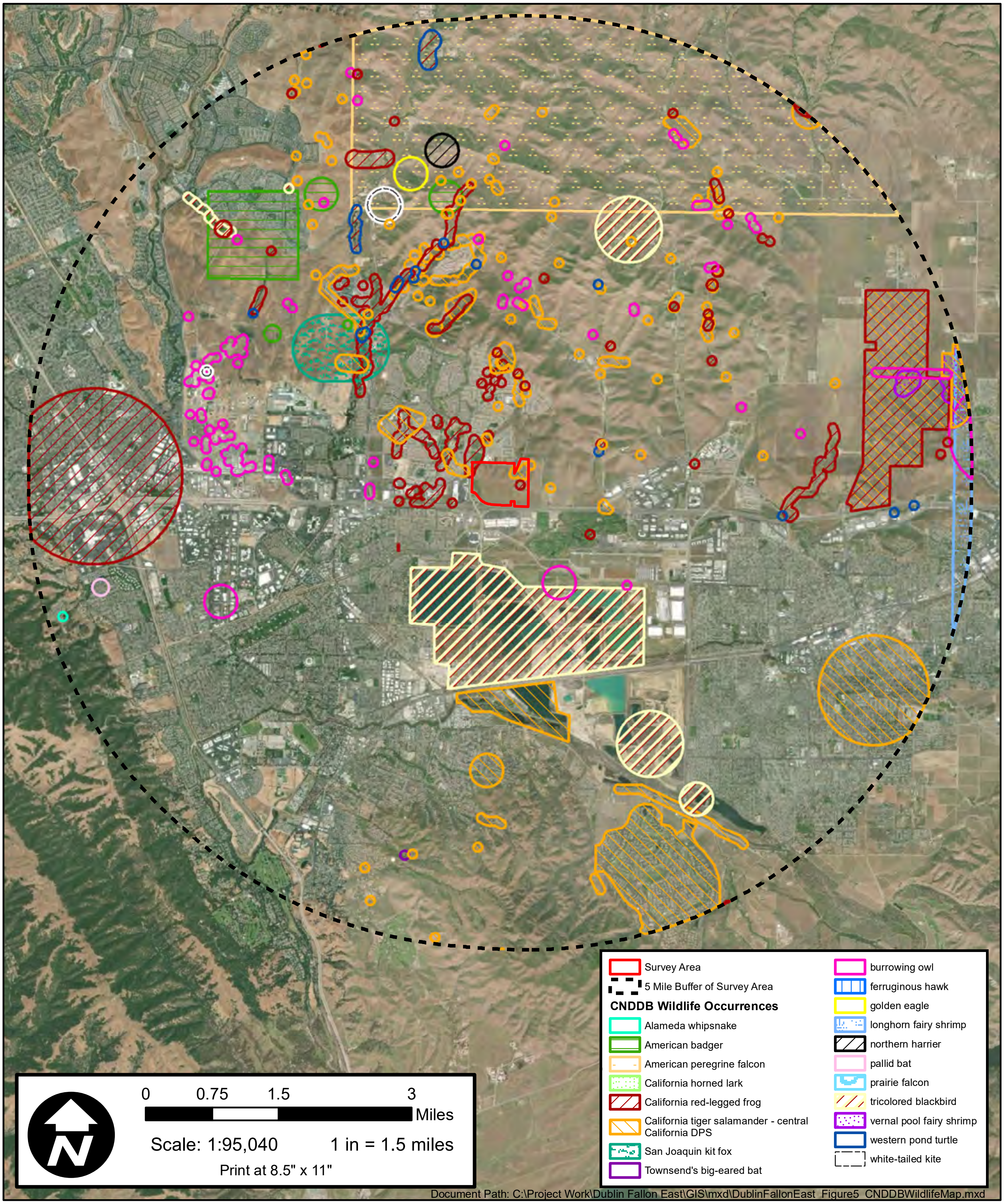

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Figure 5: CNDDB Wildlife Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 6
CNDDB Map of Special Status Plants

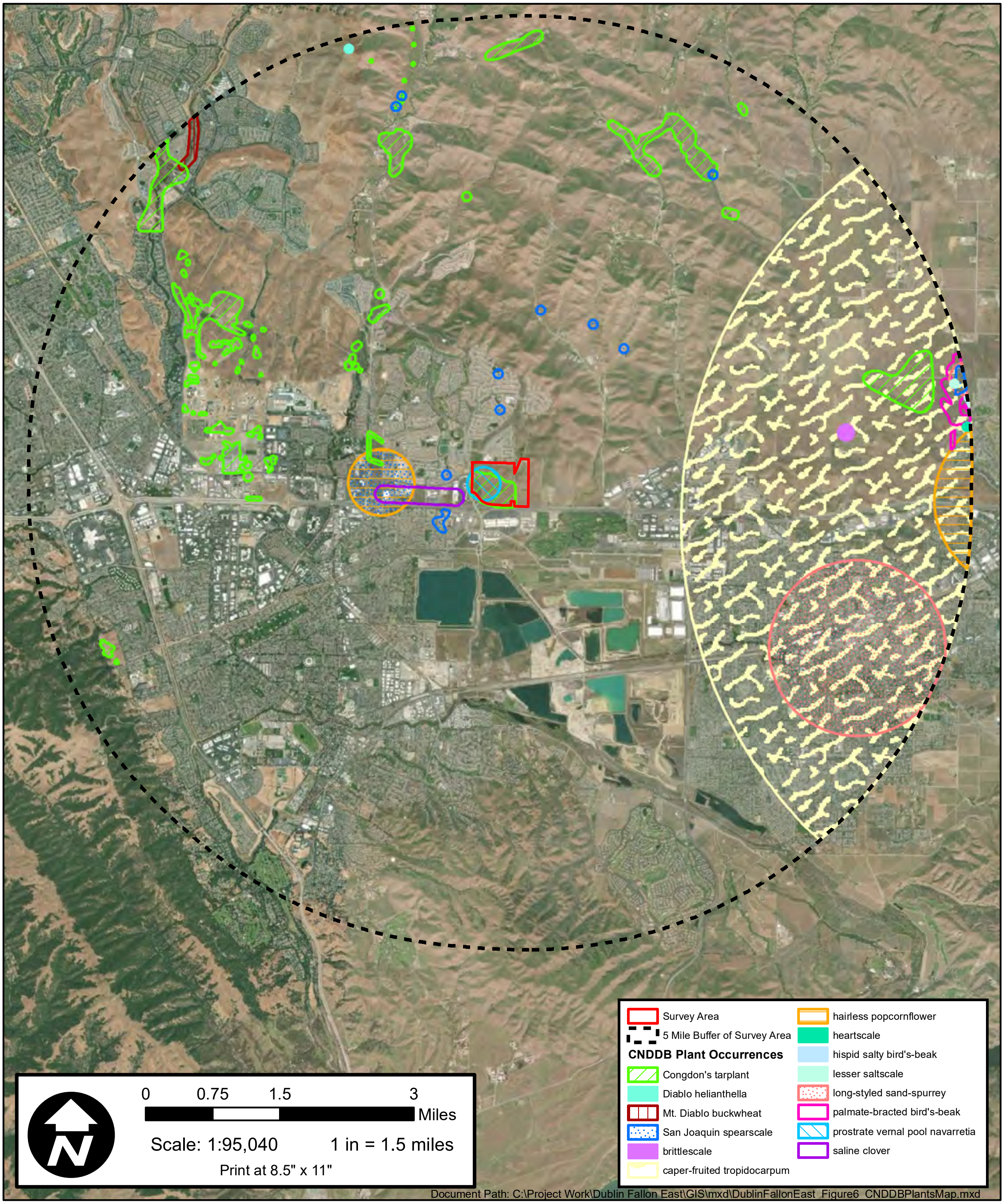

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Figure 6: CNDDB Plants Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 7
USFWS Designated Critical Habitat

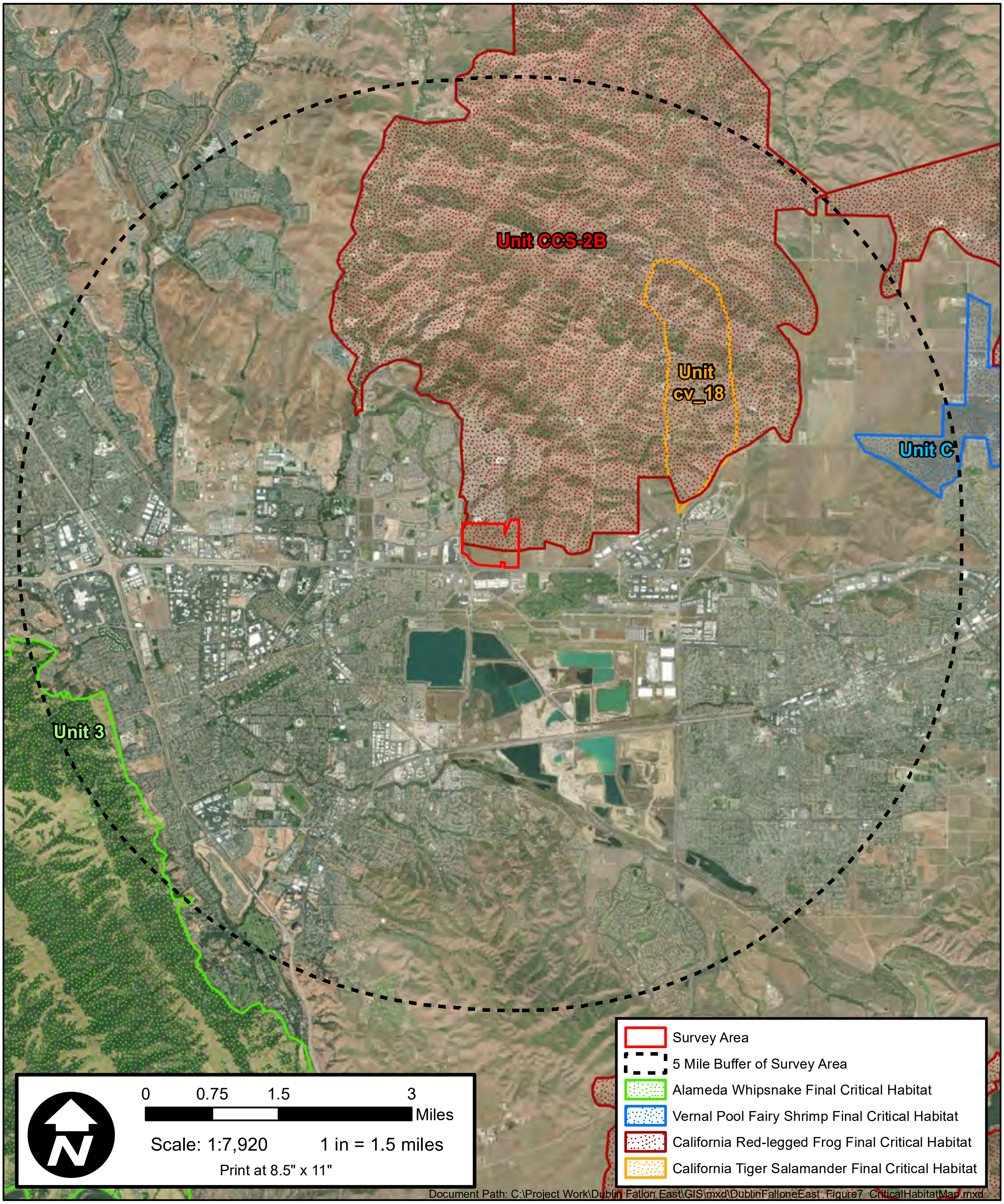

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Figure 7: Critical Habitat Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 8
Soils Map

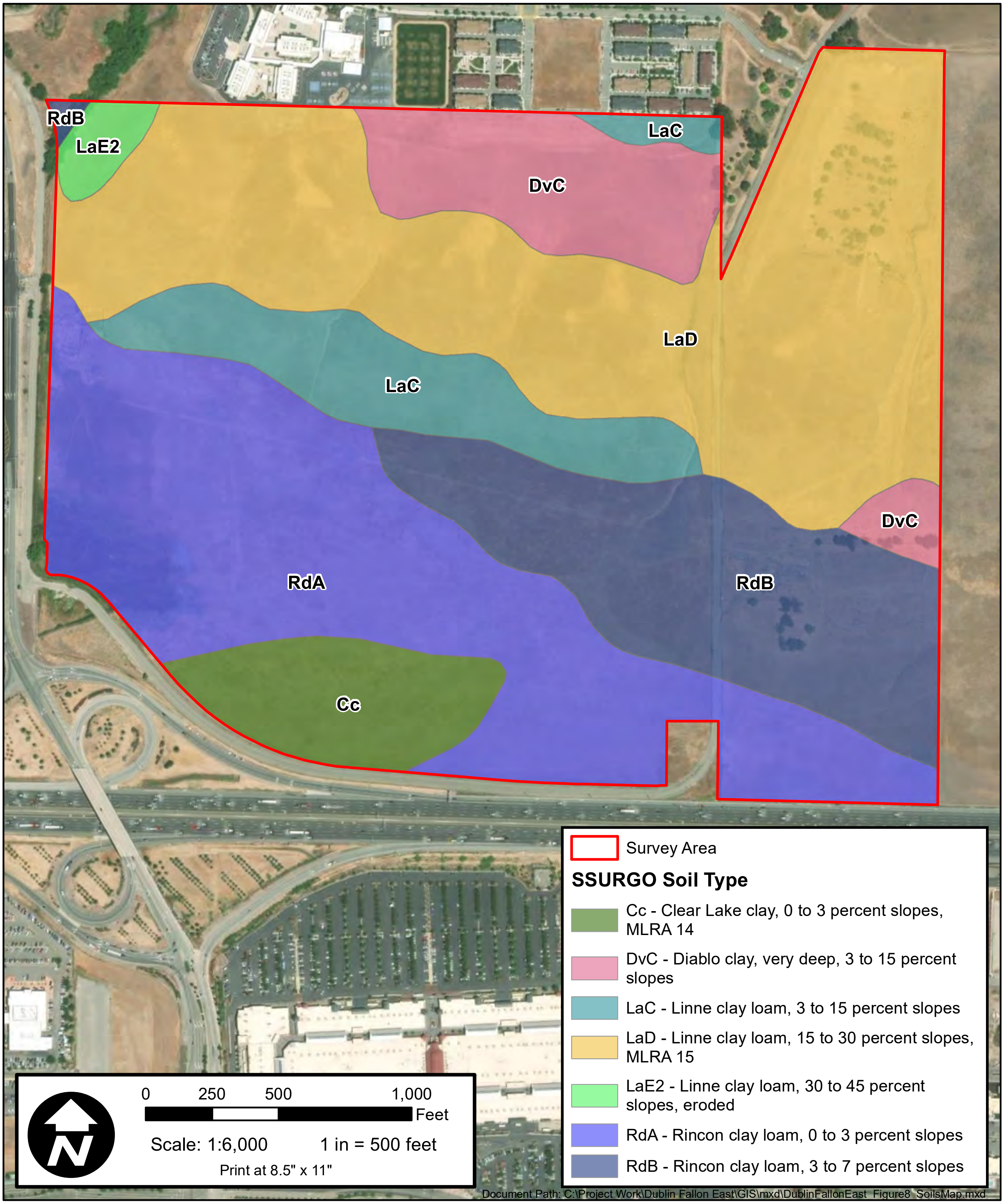

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Figure 8: Soils Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

Figure 9
Photo Location Map

Figure 9: Photo Points Map
Dublin Fallon East Property
Alameda County, CA

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Figure 10
Habitat Map

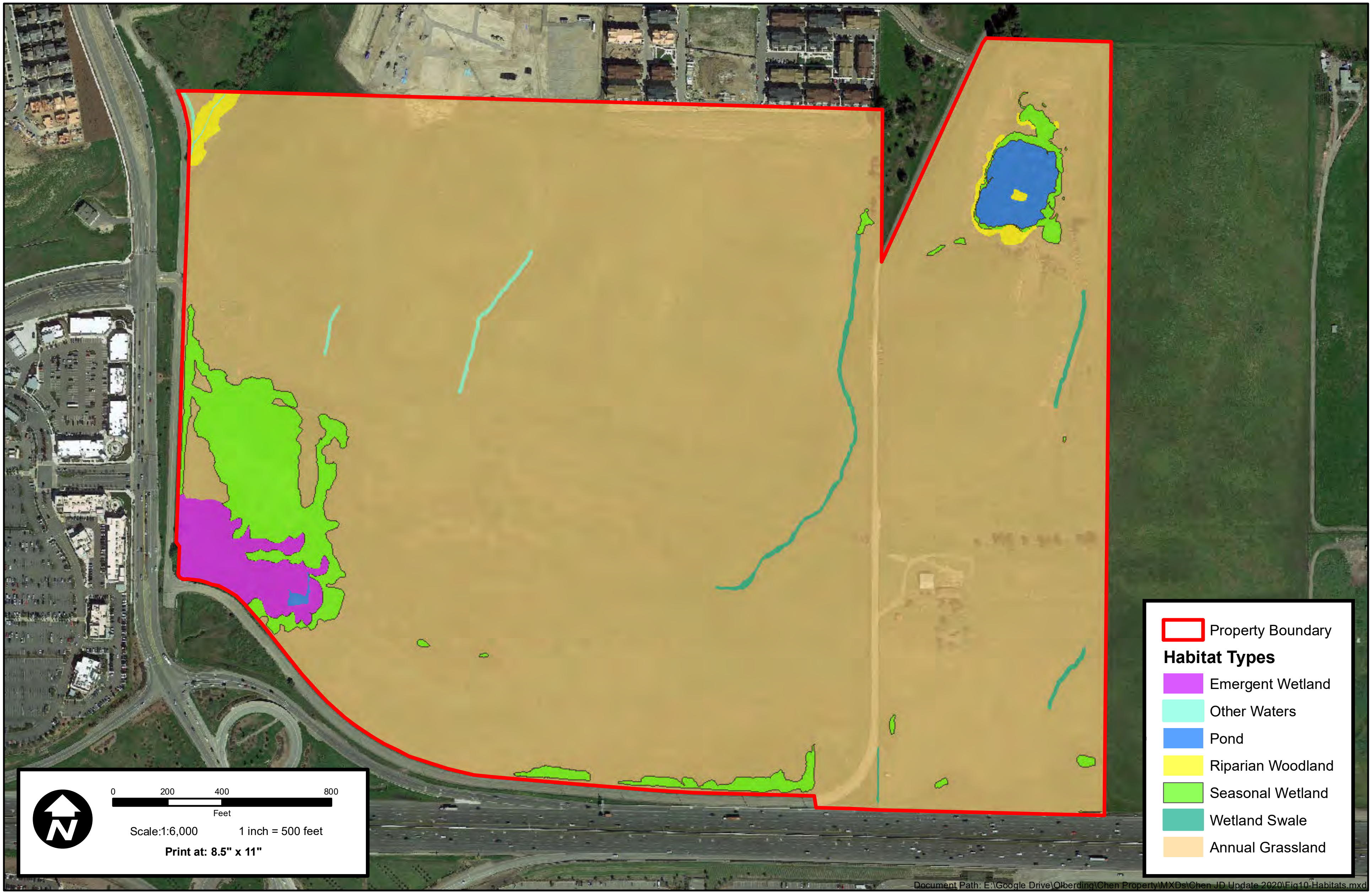

Figure 10: Habitat Map
Dublin Fallon East Property
Alameda County, California

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Revision Date: 10/18/2022

ATTACHMENT 2

TABLES

Table 1

Plant and Wildlife Species Observed

Within/Adjacent to the Survey Area

Table 1

Plant and Wildlife Species Observed Within/Adjacent to the Survey Area

Scientific Name	Common Name
Plant Species Observed	
Anemopsis californica	Yerba mansa
Avena fatua	Wild oat
Baccharis pilularis	Coyote brush
Bellardia trixago	Mediterranean linseed
Brassica nigra	Black mustard
Bromus diandrus	Rip-gut brome
Bromus hordeaceous	Soft chess
Centaurea solstitialis	Yellow star thistle
Centromadia parryi ssp. *condonii*	Congdon's tarplant
Cirsium vulgare	Bull thistle
Convolvulus arvensis	Field bindweed
Cotula coronopifolia	Brass buttons
Cupressus sempervirens	Italian cypress
Cynara cardunculus	Artichoke thistle
Cyperus eragrostis	Tall flatsedge
Distichilis spicata	Salt grass
Erodium botrys	Broadleaf filaree
Eucalyptus sp.	Eucalyptus tree
Extriplex joaquiniana	San Joaquin spearscale
Festuca perennis	Italian rye grass
Helminthotheca echioides	Bristly ox-tongue
Hordeum murinum	Hare barley
Lythrym hyssopifolia	Hyssop loosestrife
Lactuca serriola	Prickly lettuce
Medicago polymorpha	California bur clover
Nerium oleander	Oleander
Phleum alpinum	Timothy grass
Polypogon monspeliensis	Rabbit's foot grass
Poplus fremontii	Fremont cottonwood
Rumex cripsus	Curly dock
Salix sp.	Willow tree
Schinus molle	Peruvian pepper tree
Trifolium hydrophilum	Saline clover
Typha latifolia	Broadleaf cattail

Table 1

Plant and Wildlife Species Observed Within/Adjacent to the Survey Area

Scientific Name	Common Name
Wildlife Species Observed	
Birds	
Accipiter cooperii	Cooper's hawk
Agelaius phoeniceus	Red-winged blackbird
Aphelocoma californica	Western scrub jay
Bubo virginianus	Great horned owl
Buteo jamaicenesis	Red-tailed hawk
Calypte anna	Anna's hummingbird
Carpdacus mexicanus	House finch
Cathartes aura	Turkey vulture
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Falco sparverius	American kestrel
Melozone crissalis	California towhee
Mimus polyglottos	Northern mockingbird
Pipilo crissalis	California towhee
Sayornis nigricans	Black phoebe
Sayornis saya	Say's phoebe
Sturnella neglecta	Western meadowlark
Turdus migratorius	American robin
Zenaida macroura	Mourning dove
Zonotrichia leucophyrs	White-crowned sparrow
Mammals	
Lepus californicus	Black tailed jack rabbit
Otospermophilus beecheyi	California ground squirrel
Sylvilagus audubonii	Desert cottontail
Thomomys bottae	Botta's pocket gopher
Canis latrans	Coyote
Reptiles	
Sceloporus occidentalis	Western fence lizard
Amphibians	
Ambystoma californiense	California tiger salamander
Rana draytonii	California red-legged frog

Table 2

Special-Status Species for the Livermore, Tassajara, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs, and Byron Hot Springs 7.5 Minute Quadrangle Maps

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
PLANTS					
Large-Flowered Fiddleneck (*Amsinckia grandiflora*)	E/E/1B	April – May	Cismontane woodland, valley and foothill grassland, annual grassland in various soils.	Survey conducted during blooming period	Presumed absent
Slender Silver-Moss (*Anomobryum julaceum*)	-/-/2	N/A	Broadleafed upland forest; lower montane coniferous forest; North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts.	No suitable habitat present	Presumed absent
Contra Costa Manzanita (*Arctostaphylos manzanita* ssp. *laevigata*)	-/-/1B	January – February	Chaparral, rocky slopes.	No suitable habitat present	Presumed absent
Alkali Milk-Vetch (*Astragalus tener* var. *tener*)	-/-/1B	March – June	Playas, valley and foothill grasslands in adobe clay soils, and vernal pools in alkaline soils.	Survey conducted during blooming period	Presumed absent
Heartscale (*Atriplex cordulata*)	-/-/1B	April – October	Chenopod scrub, valley and foothill grassland on alkaline flats and scalds, sandy soils.	Survey conducted during blooming period	Presumed absent
Brittlescale (*Atriplex depressa*)	-/-/1B	May – October	Chenopod scrub, meadows and sinks, playas, valley and foothill grasslands, and alkaline vernal pools with clay substrate.	Survey conducted during blooming period	Presumed absent
San Joaquin Spearscale (*Atriplex joaquiniana*)	-/-/1B	April – October	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland in alkaline soils.	Present	Present

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Lesser saltscale (*Atriplex minuscula*)	-/-/1B	May – October	Chenopod scrub, meadows and seeps, playas, valley grassland and alkaline sinks.	Survey conducted during blooming period	Presumed absent
Big-Scale Balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)	-/-/1B	March – June	Chaparral, cismontane woodland, and valley and foothills grasslands, sometimes in serpentinite outcrops.	Low Annual grassland may provide marginally suitable habitat	Not likely to occur
Big Tarplant (*Blepharizonia plumosa*)	-/-/1B	July – October	Valley and foothill grassland, dry hills and plains in annual grassland, clay to clay-loam soils; usually on slopes and often in burned areas.	Survey conducted during blooming period	Presumed absent
Round-Leaved Filaree (*California macrophylla*)	-/-/1B	March – May	Cismontane woodland, valley and foothill grassland, clay soils.	Survey conducted during blooming period	Presumed absent
Mount Diablo Fairy-Lantern (*Calochortus pulchellus*)	-/-/1B	April – June	Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland; on wooded and brushy slopes.	No suitable habitat present	Presumed absent
Chaparral Harebell (*Campanula exigua*)	-/-/1B	May – June	Chaparral, in rocky, usually serpentine soils.	No suitable habitat present	Presumed absent
Congdon's Tarplant (*Centromadia parryi* ssp. *condonii*)	-/-/1B	June – November	Valley and foothill grasslands in alkaline soils.	Present	Present

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Hispid bird's beak (*Chloropyron molle* ssp. *hispidus*)	-/-/1B.1	June – September	Alkaline soils on meadows and seeps, playas, and valley and foothill grassland	Low Marginally suitable habitat present	Not likely to occur
Palmate-Bracted Bird's-Beak (*Cordylanthus palmatus*)	E/E/1B	May – October	Chenopod scrub, valley and foothill grassland; usually on Pescadero silty clay which is alkaline, with *Distichlis*, *Frankenia*, etc.	Low Marginally suitable habitat present	Not likely to occur
Mount Diablo Buckwheat (*Eriogonum truncatum*)	-/-/1B	April – November	Chaparral, coastal scrub, and valley and foothill grasslands in sandy soils.	Low Marginally suitable habitat present	Not likely to occur
Hall's Bush-Mallow (*Malacothamnus hallii*)	-/-/1B	May – September	Chaparral and coastal scrub, some populations on serpentine soil.	No suitable habitat or soil substrates present	Presumed absent
Legenere (*Legenere limosa*)	-/-/1B	April – June	Vernal pools.	Low No suitable habitat present	Presumed absent
Prostrate Vernal Pool Navarretia (*Navarretia prostrata*)	-/-/1B	April – June	Coastal scrub, valley and foothill grassland, vernal pools, alkaline soils in grassland, or in mesic vernal pools, meadows and seeps.	Survey conducted during blooming period	Presumed absent
Mount Diablo Phacelia (*Phacelia phacelioides*)	-/-/1B	April – May	Chaparral, cismontane woodland; adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine.	No suitable habitat present	Presumed absent

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Hairless Popcorn-Flower (*Plagiobothrys glaber*)	-/-/1A	March – May	Meadows and seeps, marshes and swamps, coastal salt marshes and alkaline meadows.	While suitable freshwater wetland habitat is present, plant is presumed extinct in California	Presumed extinct
Chaparral Ragwort (*Senecio aphanactis*)	-/-/2	January – April	Cismontane woodland, coastal scrub, drying alkaline flats, chaparral.	No suitable habitat present	Presumed absent
Long-Styled Sand Spurrey (*Spergularia macrotheca longistyla*)	-/-/1B	February – May	Alkaline meadows and seeps, marshes and swamps.	Survey conducted during blooming period	Presumed absent
Most Beautiful Jewel-Flower (*Streptanthus albidus* ssp. *peramoenus*)	-/-/1B	April – June	Chaparral, cismontane woodland, and valley and foothill grasslands in serpentine soils on ridges and slopes.	No suitable soil substrates present	Presumed absent
Mount Diablo Jewel-Flower (*Streptanthus hispidus*)	-/-/1B	March – June	Valley and foothill grassland, chaparral; talus or rocky outcrops.	No suitable talus or rock outcroppings present	Presumed absent
Saline Clover (*Trifolium depauperatum* var. *hydrophilum*)	-/-/1B	April – June	Marshes and swamps, valley and foothill grasslands with mesic, alkaline soils, and vernal pools.	Present	Present
Coastal Triquetrella (Moss) (*Triquetrella californica*)	-/-/1B	N/A	Coastal bluff scrub, coastal scrub; moss growing on soil.	No suitable habitat present	Presumed absent

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Caper-Fruited Tropidocarpum (*Tropidocarpum capparideum*)	-/-/1B	March – April	Valley and foothill grasslands on alkaline hills.	Low Marginally suitable habitat present	Not likely to occur
INVERTEBRATES					
Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)	T/-	Resident	Endemic to central valley vernal pools and swales.	Species not detected during protocol-level surveys in 2018 and 2022.	Presumed absent
Longhorn Fairy Shrimp (*Branchinecta longiantenna)*	E/-/-	Resident	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.	Species not detected during protocol-level surveys in 2018 and 2022.	Presumed Absent
California Linderiella (*Linderiella occidentalis*)	SOC/-	Resident	Vernal pools and seasonal pools in unplowed grasslands	Species not detected during protocol-level surveys in 2018 and 2022.	Presumed Absent
BIRDS					

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Cooper's Hawk (*Accipiter cooperii*)	-/CP	February – August	Oak woodlands, coniferous forests, riparian corridors. Often hunts on edges between habitats.	High Suitable habitat present	Present
Sharp-Shinned Hawk (*Accipiter striatus*)	-/CP	February – August	Oak woodlands, coniferous forests, riparian corridors. Often hunts on edges between habitats.	Low Suitable foraging habitat present	May occur In a foraging capacity only as a winter migrant
Tricolored Blackbird (*Agelaius tricolor*)	SOC/-/SSC	February – August	Nesting within seasonal wetland marshes, blackberry brambles or other protected substrates. Forages in annual grassland and wetland habitats.	High Suitable habitat present	May Occur
Golden Eagle (*Aquila chrysaetos*)	FP/CP/-	February – August	Nests in cliff-walled canyons and tall trees in open areas. (Nesting and wintering) Rolling foothills mountain areas, sage-juniper flats, and desert.	High Suitable foraging habitat present	May Occur In a foraging capacity only
Burrowing Owl (*Athene cunicularia*)	SOC/-/SC	February – August	Dry open annual or perennial grassland, desert and scrubland. Uses abandoned mammal burrows for nesting.	High Suitable habitat present	May Occur
Great Horned Owl (*Bubo virginianus*)	-/CP/-	February – August	Take over nests of large birds in trees that include deciduous, coniferous, and mixed forests, tropical rainforests, prairie, mountainous areas, rocky coasts, mangrove swamps, and some urban areas. Also, in cavities of trees, cliffs, deserted buildings, and artificial platforms.	High Suitable habitat present	May Occur
Red-tailed Hawk (*Buteo jamaicensis*)	-/CP/-	February – August	Various grassland habitats, urban land, oak woodlands with grassland for foraging.	High Suitable habitat present	Present

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Red-shouldered Hawk (*Buteo lineatus*)	-/CP/-	February – August	Forages in variety of semi-developed habitats including orchards. Forages in woodlands and riparian areas. Nests in riparian habitat but also eucalyptus groves.	High Suitable habitat present. Present during a 2022 protocol shrimp survey.	Present
Ferruginous Hawk (*Buteo regalis*)	-/CP/-	Late Fall – Winter	Open country such as semiarid grasslands with few trees, rocky outcrops, and open valleys. Also, along streams or in agricultural areas during migration.	Low Suitable foraging habitat present	May occur In a foraging capacity only as a winter migrant
Swainson's Hawk (*Buteo swainsoni*)	-/T/-	February – October	Nests in riparian areas and in oak savannah near foraging areas. Forages in alfalfa and grain fields with rodent populations.	Low No suitable habitat present	Presumed absent
Northern Harrier (*Circus cyaneus*)	-/SC	February – August	Nests in grasslands and marshlands, ground nesting bird.	Moderate Suitable habitat present	May Occur
White-tailed Kite (*Elanus leucurus*)	SOC/CP/FP	February – August	Various grassland habitats, urban land, oak woodlands with grassland for foraging.	High Suitable habitat present	May occur
California Horned Lark (*Eremophila alpestris actia*)	-/-/SSC	February – August	Short-grass prairie, bald hills, mountain meadows, open coastal plains, fallow grain fields, and alkali flats. Prefer open terrain where they construct nests on the ground, often in sparsely vegetated areas.	High Suitable habitat present	May occur

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Merlin (*Falco columbarius*)	-/CP/-	September – May	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands and deserts, farms and ranches, near water. Clumps of trees or windbreaks are required for roosting in open country.	Low Marginally suitable habitat present	Not likely to occur
Prairie Falcon (*Falco mexicanus*)	-/CP/-	February – August	Nests on cliffs in dry open terrain either in level or hilly habitats. Forages in scrub, grassland, desert or agricultural fields.	Low Marginally suitable foraging habitat present	May occur In a foraging capacity only
American Peregrine Falcon (*Falco peregrinus anatum)*	-/-/FP	February - August	Nests near wetlands, lakes, rivers, or other water. On cliffs, banks, dunes, mounds, and human-made structures.	Moderate Suitable foraging habitat present.	May occur In a foraging capacity only
American Kestrel (*Falco sparverius*)	-/CP/-	February – August	Various grassland habitats, urban land, oak woodlands with grassland for foraging.	High Suitable habitat present	Present
Loggerhead Shrike (*Lanius ludovicianus*)	SOC/-/SSC	February – August	Open grassland habitats, grazed grasslands. Uses shrubs for nesting.	High Suitable habitat present	May Occur
Yellow-Breasted Chat (*Icteria virens*)	-/-/SSC	February – August	In summer, inhabits riparian thickets of willow and other brushy tangles near water. Nests in willow, blackberry, and wild grape.	Low No suitable habitat present	Presumed absent

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Western Screech Owl (*Megascops kennicottii*)	-/-/-	February-August	Occurs in a diversity of habitat but associated with riparian habitat and deciduous trees. Also occurs in urban and suburban parks and residential.	High Suitable habitat present	May Occur
Barn Owl (*Tyto alba*)	-/-/-	Resident	Breeds in old buildings, caves, and well shafts. Forages in grasslands.	High Suitable foraging habitat present	May Occur In a foraging capacity only
MAMMALS					
Pallid Bat (*Antrozous pallidus*)	-/SC/-	N/A	Forages in grasslands, shrublands, deserts, forests, and woodlands. Most common in open, dry habitats. Roosts in rock crevices, caves, tree hollows, and artificial structures. Roosts must protect bats from high temperatures; very sensitive to disturbance of roosting sites.	Moderate Suitable habitat present	May occur
Townsend's Big-Eared Bat (*Corynorhinus townsendii*)	-/SSC/-	Resident	Throughout California in a wide variety of habitats; roosts in the open, hanging from walls and ceilings. Needs sites free from human disturbance. Most common in mesic sites.	Low Marginally suitable habitat present	Not likely to occur

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
Berkeley Kangaroo Rat (*Dipodomys heermanni berkeleyensis*)	-/-	Resident	Open grassy hilltops and open spaces in chaparral and blue oak/digger pine woodlands; needs fine, deep, well-drained soil for burrowing.	No suitable habitat present	Presumed Absent
Yuma Myotis (*Myotis yumanensis*)	-/-/-	Resident	Roosts primarily in caves, rocks and crevices, but also found in artificial structures. Opportunistic hunters with a wide range of insect prey. Hunts for insects above the surface of slow-moving water or in vegetation close to the water's edge.	Moderate Suitable habitat present	May occur
San Francisco Dusky-Footed Woodrat (*Neotoma fuscipes annectens*)	-/SC/-	Resident	Forest habitats of moderate canopy and moderate to dense understory, may prefer chaparral and redwood habitats. Nests constructed of grass, leaves, sticks, feathers, etc. Population may be limited by availability of nest materials.	No suitable habitat present	Presumed Absent
American Badger (*Taxidea taxus*)	-/-/SSC	Resident	Shrub, forest, and herbaceous habitats with friable soils to dig burrows. Need open, uncultivated ground. Prey on fossorial mammals.	Low Potentially suitable grassland habitat present	Presumed absent
San Joaquin Kit Fox (*Vulpes macrotis mutica*)	E/T/-	Resident	Annual grasslands or grassy stages with scattered shrubby vegetation. Needs loose soils for burrowing.	Low No suitable habitat present. No recent CNDDB occurrences	Presumed Absent

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
AMPHIBIAN					
California Tiger Salamander (*Ambystoma californiense*)	T/T/-	Aquatic Surveys - Once each in March, April, and May with at least 10 days between surveys. Upland Surveys - 20 nights of surveying under proper conditions beginning October 15 and ending March 15.	Vernal pools, swales and depressions for breeding, needs underground refugia.	High Suitable habitat present. Present during a 2022 survey.	Present
Foothill Yellow-Legged Frog (*Rana boylii*)	SOC/-/SC	Year-round resident	Partially shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Need cobble for egg-laying.	Low No suitable habitat present	Presumed Absent
California Red-Legged Frog (*Rana draytonii*)	T/-/SC	May 1 – November 1	Lowlands and foothills in or near permanent deep water with dense, shrubby or emergent riparian habitat. Requires 11-20 weeks of permanent water for breeding and larval development. Must have access to aestivation habitat.	High Suitable habitat present. Present during a 2022 survey.	Present
Western spadefoot (*Spea hammondi*)	-/SSC/-	Year-round resident	Sandy or gravelly habitats in a variety of cismontane habitats, particularly vernal pools, grasslands, alkali flats, and playas. Breeds in rain pools, puddles, vernal pools, tire ruts, etc.	Low Suitable habitat present	Not likely to occur

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**
REPTILE					
Western Pond Turtle (*Emys marmorata*)	-/-/SC	March – October	Aquatic turtle needs permanent water in ponds, streams, irrigation ditches. Nests on sandy banks or grassy fields.	Moderate No suitable habitat present	May occur
Alameda Whipsnake (*Masticophis lateralis euryxanthus*)	T/T	Year-round resident	Valley foothill hardwood habitat of the coast ranges between Monterey and north San Francisco Bay areas.	Low No suitable habitat present	Presumed absent
Coast Horned Lizard (*Phrynosoma blainvillii*)	-/SSC/-	Year-round resident	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes; requires open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Low No suitable habitat present	Presumed Absent

Table 2

Special-Status Species for the Livermore, Tassajara, Diablo, Dublin, Altamont, Niles, La Costa Valley, Mendenhall Springs and Byron Hot Springs 7.5 Minute Quadrangle Maps[1]

Common Name/Scientific Name	Status (Fed/State/ CNPS)[2]	Blooming or Survey Period	Habitats of Occurrence	Potential on Site	Status on Site**

1. Special-status plants and animals as reported by the California Natural Diversity Data Base, California Native Plant Society, and other background research September 2022
2. Order of Codes for Plants - Fed/State/CNPS
   Order of Codes for Animals - Fed/State/CDFW
   Codes:
   SOC - Federal Species of Concern
   SC - California Species of Special Concern
   E - Federally/State Listed as an Endangered Species
   T - Federally/State Listed as a Threatened Species
   C - Species listed as a Candidate for Federal Threatened or Endangered Status
   R - Rare
   D - Delisted
   CP- California protected
   FP - State Fully Protected
   DFG: SC California Special Concern species
   1B - California Native Plant Society considers the plant Rare, Threatened, or Endangered in California and elsewhere.
   1A - CNPS Plants presumed extinct in California.
   2 - CNPS Plants Rare, Threatened or Endangered in California, but more common elsewhere.
   3 - CNPS Plants on a review list to find more information about a particular species.
   4 - CNPS Plants of limited distribution - a watch list.

ATTACHMENT 3

SITE PHOTOGRAPHS

1. Facing west, photo shows an overview of the abandoned quarry mine. Photo taken August 31, 2022.

2. Facing north, photo shows an overview of the abandoned quarry mine. Photo taken August 31, 2022.

3. Facing northeast, photo shows the wetland and riparian habitats located within the abandoned quarry mine. Fremont’s cottonwood are the dominant trees seen in the center portion of the photograph. Photo taken February 2022.

4. Facing southeast, photo shows a stand of eucalyptus trees located on the eastern edge of the Property. Photo taken August 31, 2022.

5. Facing north, photo shows one of six seasonal wetland features filled with water after a rain event. Photo taken October 27, 2016.

6. Facing southwest, Photo shows one of five ephemeral drainages located on the Property. Photo taken October 27, 2016.

7. Facing northeast, photo shows the non-native annual grassland and the southern perimeter of the large southwest seasonal wetland. Photo taken January 10, 2022.

8. Facing southwest, photo shows an overview of the large emergent wetland located in the southerwestern corner of the Property. Photo taken August 31, 2022.

9. Facing south, photo shows the emergent wetland in the southwest corner with water present. Photo taken August 31, 2022.

10. Facing north, photo shows riparian woodland habitat that occurs along the northwestern portion of the Property. Photo taken October 27, 2016.

11. Photo shows a California red-legged frog individual that was found within a small depressional wallow created by cattle hoof shear along the western portion of the Property. Photo taken April 11, 2018.

12. Photo shows California tiger salamander larvae found within the seasonal pond located within the abandoned quarry. Photo taken February 9, 2022.

13. Photo shows San Joaquin spearscale found onsite. Photo taken April 12, 2022.

14. Photo shows Congdon’s tarplant found adjacent to the southwest wetland. Photo taken June 28, 2022.

15. Photo shows saline clover found on site within the emergent wetland. Photo taken April 12, 2022.

16. Photo shows three large-branchiopod individuals (*Branchinecta lindahli)* that were encountered during sampling within one of the wetland features. The two females are on the top of the photo and the male is the one on the bottom. Photo taken April 11, 2018.

Appendix D
Special-Status Plant Survey Report

SPECIAL-STATUS PLANT SURVEY REPORT

FOR THE

DUBLIN FALLON EAST PROJECT

CITY OF DUBLIN, ALAMEDA COUNTY, CALIFORNIA

Prepared for:

GH PAC VEST, LLC
2800 Post Oak Boulevard, Suite 5115
Houston, TX 75056

Prepared by:

OLBERDING ENVIRONMENTAL, INC.
3170 Crow Canyon Place, Suite 260
San Ramon, CA 94583

Phone: (925) 866-2111 – FAX (925) 825-2112
Contact: Jeff Olberding

October 2022

TABLE OF CONTENTS

LIST OF ATTACHMENTS

This report should be cited as: Olberding Environmental, Inc. September 2022. *Special-Status Plant Survey Report for the Dublin Fallon East Project, City of Dublin, California.* Prepared for GH America Investments, INC, Houston, Texas.

1.0 SUMMARY

Olberding Environmental, Inc. has performed focused botanical surveys for special-status (those species identified as rare, threatened, or endangered) plants on the Dublin Fallon East Property [AKA Chen and Anderson Properties (Properties)], located within the city limits of Dublin, Alameda County, California. Multiple special-status plant species, identified as occurring within the vicinity of the Properties by the California Natural Diversity Data Base (CNDDB), were determined to have a potential to occur on the Properties based on the presence of appropriate habitat types. These plants include: San Joaquin spearscale (*Extriplex joaquiniana*), Congdon's tarplant (*Centromadia parryi ssp. condonii*), saline clover (*Trifolium hydrophilum*), large-flowered fiddleneck *(Amsinckia grandiflora)*, alkali milk vetch (*Astragalus tener* var. *tener*), brittlescale (*Atriplex depressa*), heartscale (*Atriplex cordulata* var. *cordulata*), lesser saltscale (*Atriplex minuscula*), big tarplant (*Blepharizonia plumosa*), round-leaved filaree (*California macrophylla*), hairless popcorn flower (*Plagiobothrys glaber*), long-styled sand spurrey (*Spergularia macrotheca longistyla*), and prostrate vernal pool navarretia (*Navarretia prostrata*). The following discussion provides a description of the Properties' plant communities, survey methods, and the results of surveys performed during the identified blooming period of the above listed species recognized as having the potential to occur on the Properties. Survey results include mapping of identified existing sensitive plant locations.

Multiple surveys were conducted throughout 2017 and throughout 2022. Surveys conducted in 2017 occurred on March 28, April 18, June 1, and June 28. Surveys conducted in 2022 occurred on March 17, April 12, May 3, June 28 and September 1.

2.0 LOCATION AND PROPERTY DESCRIPTION

The Properties consist of approximately 135 acres and 50 acres respectively, located just east of the intersection of Fallon Road and Croak Road, north of Interstate-580, in Dublin, California. Attachment 1, Figure 1 depicts the regional location of the Properties in the San Francisco Bay Area. Attachment 1, Figure 2 illustrates the vicinity of the Properties in relationship to the City of Dublin. Attachment 1, Figure 3 identifies the locations of the Properties on a USGS Quadrangle base map. Attachment 1, Figure 4 shows an aerial of the Properties.

Access to the Properties is provided from Interstate 580. From 580, take the El Charro/Fallon Road exit and make a left onto Fallon Road. Travel north for 0.5 miles then make a right onto Croak Road, the Chen Property will be found on the right. Continue on Croak Road for 0.2 miles, the Anderson Property will be on the right.

3.0 DESCRIPTION OF PROPERTIES

A majority of both Properties support California non-native annual grassland habitat. Plant species diversity is low, primarily due to grazing pressure. Dominant plant species include a mixture of annual grasses as well as forbs that are common to locally abundant at various times of the year.

On the Anderson Property, an abandoned quarry pit in the north portion of the site supports a large, pond and seasonal wetland bordered by a small band of riparian woodland. Two small, seasonal wetlands are found in the southwestern portion of the Property.

On the Chen Property, an intermittent drainage and small section of riparian woodland habitat occur in the northwestern corner of the Property. Four ephemeral drainages occur within the valleys among the steep grass covered hillsides. A series of wetland features were observed on the Property, with the largest wetland located along the western portion of the Property. Water exits a culvert just outside the boundary of the Property and discharges onto the Property creating an emergent marsh across the southwestern portion. Additional wetland features occur in the southeastern corner of the Property and in the northeastern corner at the top of one of the ephemeral drainages.

4.0 PLANT REGULATIONS

4.1 Federal Regulatory Setting

The Federal Endangered Species Act (ESA) of 1973 (16 USC 1531 et seq., as amended) prohibits federal agencies from authorizing, permitting, or funding any action that would result in biological jeopardy to a plant or animal species listed as Threatened or Endangered under the Act. Listed species are taxa for which proposed and final rules have been published in the Federal Register (U.S. Fish and Wildlife Service [USFWS], 2006a and 2006b). If a proposed project may jeopardize listed species, Section 7 of the ESA requires consideration of those species through formal consultations with the USFWS. Federal Proposed species (USFWS, 2006c) are species for which a proposed listing as Threatened or Endangered under ESA has been published in the Federal Register. If a proposed project may jeopardize proposed species, Section 7 of the ESA affords consideration of those species through informal conferences with USFWS. The USFWS defines federal Candidate species as “those taxa for which we have on file sufficient information on biological vulnerability and threats to support issuance of a proposed rule to list, but issuance of the proposed rule is precluded by other higher priority listing actions.” (USFWS, 2007c). Federal Candidate species are not afforded formal protection, although USFWS encourages other federal agencies to give consideration to Candidate species in environmental planning.

4.2 State Regulatory Setting

Project permitting and approval requires compliance with California Environmental Quality Act (CEQA), the 1984 California Endangered Species Act (CESA), and the 1977 Native Plant Protection Act (NPPA). The CESA and NPPA authorize the California Fish and Game Commission to designate Endangered, Threatened and Rare species and to regulate the taking of these species (§§2050-2098, Fish & Game Code). The California Code of Regulations (Title 14, §670.5) lists animal species considered Endangered or Threatened by the State.

The Natural Heritage Division of the California Department of Fish and Wildlife (CDFW) administers the state rare species program. CDFW maintains lists of designated Endangered, Threatened, and Rare plant and animal species (CDFW, 2008a and 2008b). Listed species either were designated under the NPPA or designated by the Fish and Game Commission. In addition to recognizing three levels of endangerment, the CDFW can afford interim protection to candidate species while they are being reviewed by the Fish and Game Commission.

Under provisions of §15380(d) of the CEQA Guidelines, the project lead agency and CDFW, in making a determination of significance, must treat non-listed plant and animal species as equivalent to listed species if such species satisfy the minimum biological criteria for listing. In general, the CDFW considers plant species on List 1A (Plants Presumed Extinct in California), List 1B (Plants Rare, Threatened, or Endangered in California and elsewhere), or List 2 (Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere) of the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994) as qualifying for legal protection under §15380(d). Species on CNPS List 3 or 4 may, but generally do not, qualify for protection under this provision.

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species and CDFW Species of Special Concern, areas of high biological diversity, areas providing important wildlife habitat, and unusual or regionally restricted habitat types. Habitat types considered sensitive include those listed on the California Natural Diversity Data Base’s (CNDDB) working list of “high priority” habitats (i.e., those habitats that are rare or endangered within the borders of California) (Holland 1986).

5.0 FLORISTIC INVENTORY AND HABITAT CHARACTERIZATION

In classifying the habitat types on the Property, generalized plant community classification schemes were used (Sawyer and Keeler-Wolf 1995). The final classification and characterization of the habitat types of the study area were based on field observations. The Properties support five habitat types: non-native annual grassland, riparian woodland, seasonal wetland, emergent wetland and drainage channel.

5.1 ***Annual Grassland***

Non-native annual grassland represents the dominant plant community on the Properties. As stated earlier, the Properties have been primarily used for grazing in the past. As a result, non-native annual grasses of European origin make up the dominant species. These species include wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), hare barley (*Hordeum murinum* spp. *leporinum*), and Italian ryegrass (*Festuca perennis*), among others. Common non-native forbs observed during field surveys include black mustard (*Brassica nigra*), Mediterranean linseed (*Bellardia trixago),* yellow starthistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), milk thistle (*Silybum marianum*), filaree (*Erodium* spp.), and bur clover (*Medicago polymorpha*).

5.2 ***Riparian Woodland***

A group of willow (*Salix sp*) and cottonwood trees (*Populus fremontii*) surround the quarry pond within the northern portion of the Anderson Property. On the Chen Property, a dense group of willow, cottonwood, and coast live oak (*Quercus agrifolia*) trees surround a perennial drainage within the northwestern corner of the Property.

5.3 ***Seasonal Wetland/Pond***

The seasonal wetlands across the Properties are characterized by Italian rye grass (*Festuca perennis),* seaside barley (*Hordeum marinum),* Baltic rush, (*Juncus balticus),* bristly oxtongue (*Helminthotheca echioides),* common toad rush (*Juncus bufonius),* beardless wild rye (*Elymus triticoides),* timothy grass (*Phleum alpinum),* bulrush (*Typha latifolia),* curly dock (*Rumex crispus),* tall flatsedge (*Cyperus eragrostis),* hyssop lossestrife (*Lythrym hyssopifolia),* brass buttons (*Cotula coronopifolia),* soft brome (*Bromus hordeaceus),* prickly lettuce (*Lactuca serriola),*Congdon's tarplant, and rabbit's foot grass.

5.4 ***Emergent Marsh***

The emergent marsh present on the Chen Property contains water year-round and is primarily characterized by a large stand of cattails (*Typha* sp.). The cattail stand covers the entire emergent marsh along with a few scattered willow trees (*Salix* spp.) present along the boundary of Croak Road. Several hydrophytic species are present within the willow undergrowth such as, cutleaf water parsnip (*Berula erecta),* prickly lettuce, and rabbits foot grass.

5.5 ***Drainage Channel***

Five drainages exist on the Chen Property. One intermittent channel lies within the riparian woodland on the northwestern corner while the other four are spread within the hills of the north-central part of the Property. Dominant vegetation within the drainage features consisted primarily of salt grass (*Distichilis spicata*), iris leaf rush (*Juncus xiphioides*) and rabbit's foot grass (*Polypogon monspeliensis*) with sporadic yerba mansa (*Anamopsis californica*) and watercress (*Nasturtium officinale*) within the northwestern corner. Four additional ephemeral channels exist across the northern portion of the Chen Property. These channels vegetation characteristics are similar to the non-native grassland composition.

6.0 SURVEY METHODOLOGY

Olberding Environmental conducted focused surveys of literature and special-status species databases in order to identify special-status plant species and sensitive habitat types with potential to occur in the study area. Sources reviewed include: CNDDB occurrence records (CNDDB 2022) and the CNPS *Inventory* (Skinner and Pavlik 1994) for the Las Trampas Ridge, Diablo, Hayward, and Dublin USGS 7.5 quadrangles; and standard flora (Hickman 1993). From the above sources, a list of special-status plant species with potential to occur in the Property vicinity was developed (Attachment 2, Table 1).

Special-status plant surveys were conducted in 2017 by Olberding Environmental biologists, Lisa Henderson and Kareesa Griffith on March 28, April 18, June 1, and June 28. Surveys were conducted in 2022 by Olberding Environmental biologists Lindsey Blessing, Veronica Giessler, and Mark Van Rietema, and Johnson Marigot Consulting biologists Sadie McGarvey and Haley Henderson, on March 17, April 12, May 3, June 28, and September 1. The surveys followed the California Department of Fish and Wildlife (2018) and CNPS (2001) published survey guidelines. These guidelines state that special-status surveys should be conducted at the proper time of year when special-status and locally significant plants are both evident and identifiable. Blooming periods for each surveyed species can be found in Table 2. These guidelines also state that the surveys be floristic in nature with every plant observed identified to the species, subspecies, or variety as necessary to determine their rarity status. Finally, these surveys must be conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques. Following these guidelines, surveys were conducted during the time period when special-status plant species from the region were known to be evident and flowering. All regions of the Properties were examined by walking line transects through the entire site, and by closely examining the microhabitats that could potentially support special-status plants.

All the plants found on the Properties were identified to species. A list of all vascular plant taxa encountered within the project Properties were recorded in the field (Attachment 2, Table 1). Plants that needed further evaluation were collected and keyed in the lab. Final determinations for collected plant material were made by keying using *The Jepson Manual.*

7.0 SURVEY RESULTS

Attachment 2, Table 2 includes a list of special-status plants with the potential to occur within or in the immediate vicinity of the Properties based on a review of the USGS 7.5-minute quadrangles for Las Trampas Ridge, Diablo, Hayward, and Dublin. The special-status plant species identified by the CNDDB as potentially occurring in the Properties are known to grow from general habitat types similar to those encountered on the subject Properties. Many of the specific habitats or "micro-climate" necessary for the plant species to occur are found within the boundaries of the subject Properties. The habitats necessary for the CNDDB reported plant species consist of valley and foothill grassland, alkaline meadows, seasonal wetland, and seeps.

Thirteen of the special-status plants listed in Table 2 were identified to have the potential to occur on the Properties as a result of the specific habitats identified within the Properties boundaries. These species include: alkali milk vetch, heartscale, brittlescale, lesser saltscale, big tarplant, round-leaved filaree, long-styled sand spurrey, prostrate vernal pool navarretia, San Joaquin spearscale, Congdon's tarplant, saline clover, hairless popcorn-flower, and large-flowered fiddleneck. Surveys were conducted during the appropriate blooming period of each above listed species. Alkali milk vetch, heartscale, brittlescale, lesser saltscale, big tarplant, round-leaved filaree, long-styled sand spurrey, prostrate vernal pool navarretia, hairless popcorn flower, and large-flowered fiddleneck were not observed during any of the surveys conducted in 2017 or in 2022. Congdon's tarplant, San Joaquin spearscale, and saline clover were observed during surveys conducted in either 2017 or in 2022. These species are discussed in further detail below.

San Joaquin Spearscale (*Atriplex joaquiniana*). CNPS List 1B.

San Joaquin spearscale is an annual herb in the family *Chenopodiaceae*. Leaves of the San Joaquin spearscale are ovate to triangular, with fine gray scales above. Flowers are dense and spike or panicle-like with dark brown seeds. It is found in Alameda, Contra Costa, Merced, Monterey, Napa, Sacramento, San Benito, Solano, and Yolo counties. It is considered extirpated in Santa Clara, San Joaquin, and Tulare counties. Habitat for the San Joaquin spearscale includes chenopod scrub, meadows, seeps, playas, and valley and foothill grasslands with alkaline soils. Blooming occurs between April and October.

Annual grassland habitat on the Properties is considered highly suitable for San Joaquin spearscale. CNDDB lists several occurrences within a five-mile radius of the site, including one immediately north of the Properties (Occurrence # 95). This species was not encountered during rare plant surveys conducted in 2017 but was observed during surveys conducted in 2022. In 2022, approximately 70 San Joaquin spearscale individuals were observed over 0.24 acres in the southern central portion of the Chen Property and along the dirt access road on the Anderson

Property. Attachment 1, Figure 7 shows the extent of the San Joaquin spearscale population on the Properties.

Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*). CNPS List 1B

Congdon's tarplant is a member of the genus *Hemizonia* in the sunflower family (*Asteraceae*). It is one of four subspecies of Parry's tarplant (*Hemizonia parryi*). Congdon's tarplant is a prostrate to erect, annual herb with rigidly spine-tipped leaves and yellow ray- and disk-flowers (head). It occurs in valley and foothill grasslands in moist alkaline soils and blooms between May and November. Historically, Congdon's tarplant was distributed from Solano County south to San Luis Obispo County, but is now severely threatened by development.

The annual grassland habitat on the Properties is highly suitable for Congdon's tarplant, and this species is known to occur in the immediate vicinity of the Properties. CNDDB lists numerous occurrences of Congdon's tarplant within a five-mile radius of the Properties including Occurrence #11 located on the Property in 1999. This species was observed across the southern portion of both Properties during surveys conducted in 2017 and in 2022. In 2017, approximately 5,373 Congdon's tarplant individuals were located within 4.68 acres of space within the two Properties; 5028 plants were located within 4.32 acres on the Chen Property and 345 plants were located within 0.36 acres on the Anderson Property. In 2022, approximately 2200 individuals were observed across 1.90 acres located along the eastern edge of the western seasonal wetland feature on the Chen Property and in the southern portion of the Anderson Property. Attachment 1, Figure 7 shows the extent of the Congdon's tarplant population on the Properties.

Saline Clover (*Trifolium hydrophilum*). CNPS List 1B.

Saline clover is member of the pea family, *Fabaceae*. Purple flowers bloom between April and June. This species is found in marshes and swamps, mesic valley and foothill grasslands with alkaline soils, and vernal pools, between 0 and 300 meters in elevation. It is thought to occur in Alameda, Colusa, Monterey, Napa, San Benito, Santa Clara, San Luis Obispo, San Mateo, Solano, and Sonoma Counties. It is threatened by development and current fieldwork is needed to determine if populations still exist in many counties.

The grassland and seasonal wetlands present on the Properties provide highly suitable habitat for this species. CNDDB lists one occurrence (Occurrence #7) of this species within the 5-mile radius of the Properties. This species was not observed during surveys conducted in 2017. However, in 2022, this species was observed on the Chen Property; approximately 100 saline clover individuals were identified over 0.25 acres located along the edge of the large seasonal wetland feature located at the western boundary of the Chen Property. Attachment 1, Figure 7 shows the extent of the saline clover population on the Properties.

8.0 CONCLUSIONS

In summary, multiple surveys were conducted throughout 2017 and 2022 that resulted in the observation of three special status plant species; Congdon's tarplant, San Joaquin spearscale, and saline clover, are present within the boundaries of the Properties. Congdon's tarplant was observed during surveys conducted in both 2017 and 2022, while San Joaquin spearscale and saline clover were observed during surveys conducted in 2022. A population of approximately 100 saline clover individuals is present along the edge of the large seasonal wetland feature at the western boundary of the Chen Property. Approximately 70 San Joaquin spearscale individuals were observed over 0.24 acres in the southern central portion of the Chen Property and along the dirt access road on the Anderson Property. Finally, during 2022, approximately 2200 individuals of Congdon's tarplant were observed across 1.90 acres located along the eastern edge of the western seasonal wetland feature on the Chen Property and in the southern portion of the Anderson Property.

9.0 REFERENCES

California Natural Diversity Data Base (CNDDB). 2022. Computer listings and map locations of historic and current recorded occurrences of special-status species and natural communities of special concern for USGS 7.5 minute quadrangle maps: Diablo, Dublin, Livermore, Hayward, Las Trampas Ridge, Tassajara, Walnut Creek, Clayton, Antioch South. Accessed on March 7, 2022.

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Skinner, M. W. and B. M. Pavlik (eds.). 1994. Inventory of rare and endangered vascular plants of California. California Native Plant Society Special Publication No. 1 (5th edition). California Native Plant Society, Sacramento, CA. 338 pp.

ATTACHMENT 1
FIGURES

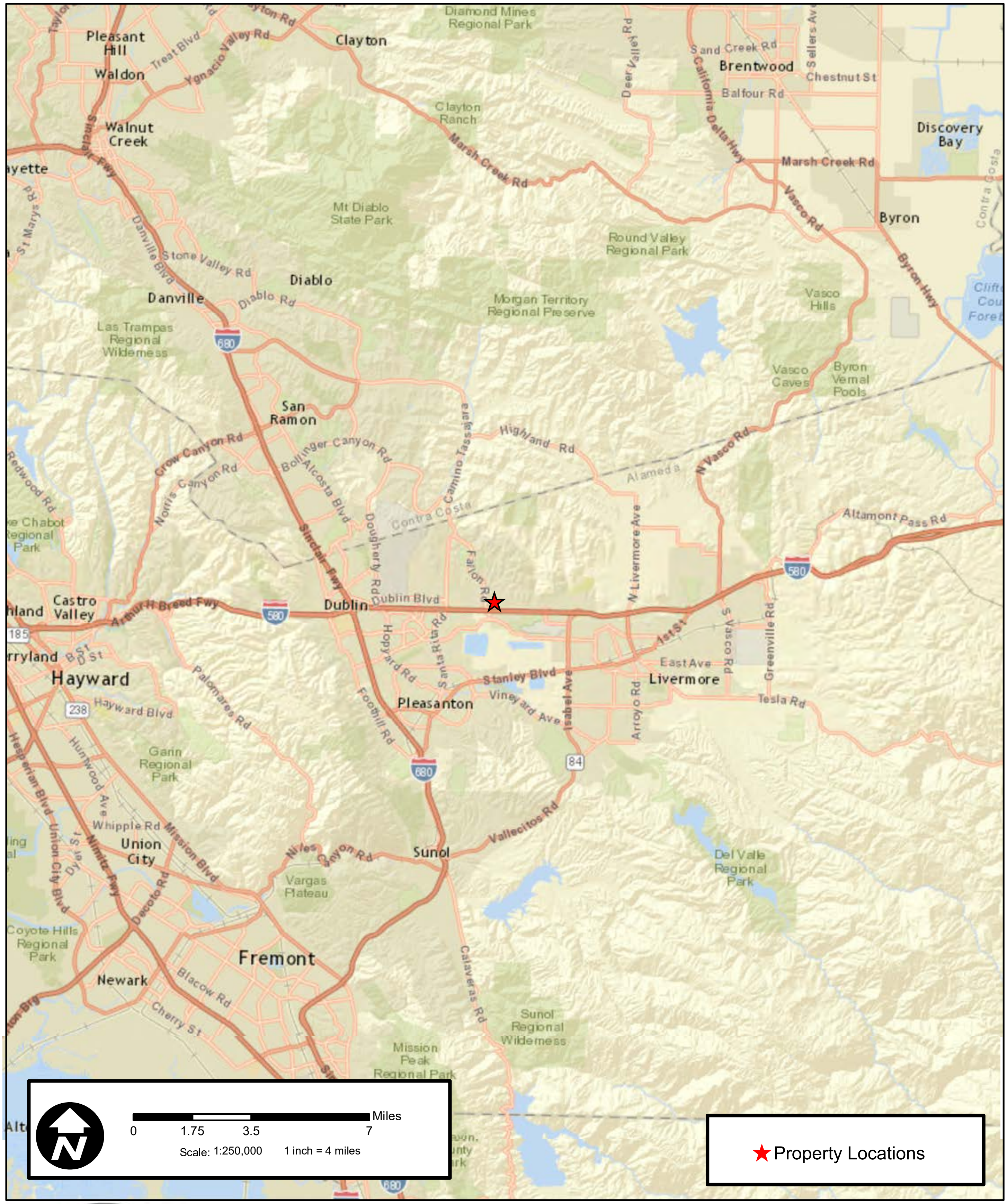
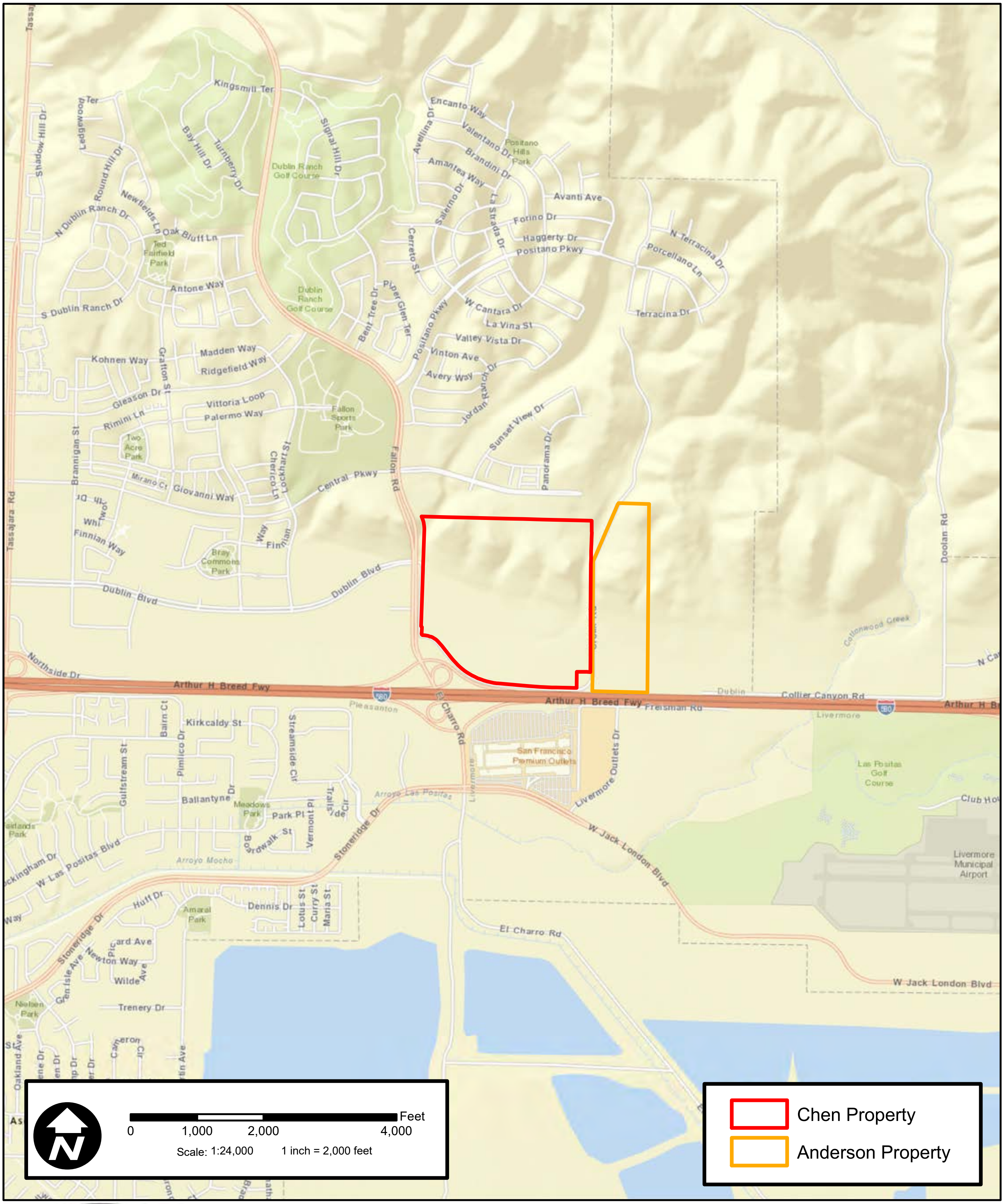


Figure 1: Regional Map
Chen & Anderson Properties
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.

193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188



193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 2: Vicinity Map
Chen & Anderson Properties
Alameda County, CA

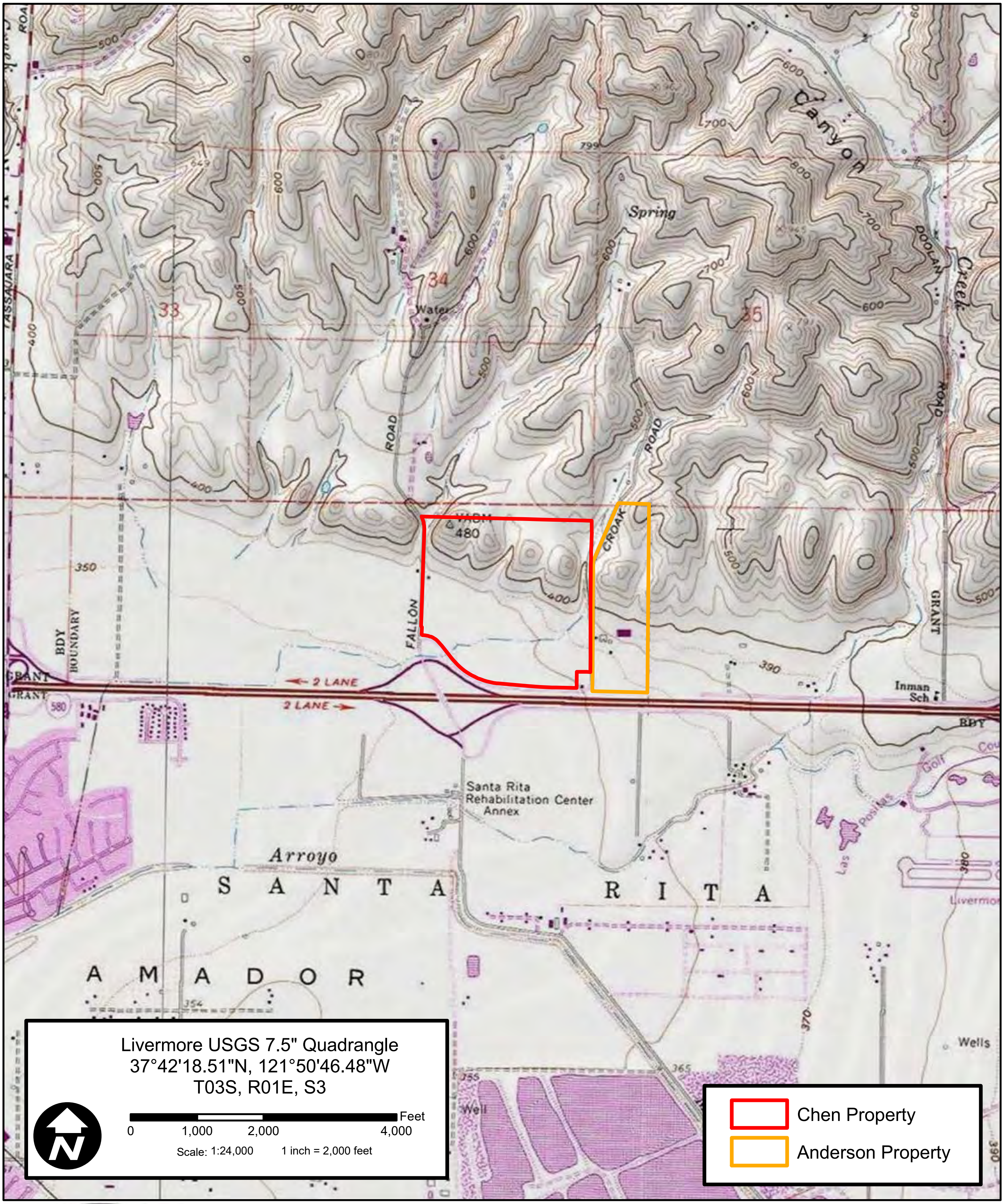


Figure 3: USGS Topographic Map
Chen & Anderson Properties
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.

193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 4: Aerial Map
Chen & Anderson Properties
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.
193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Aerial Imagery Source & Date: USDA FSA NAIP, June 6, 2014

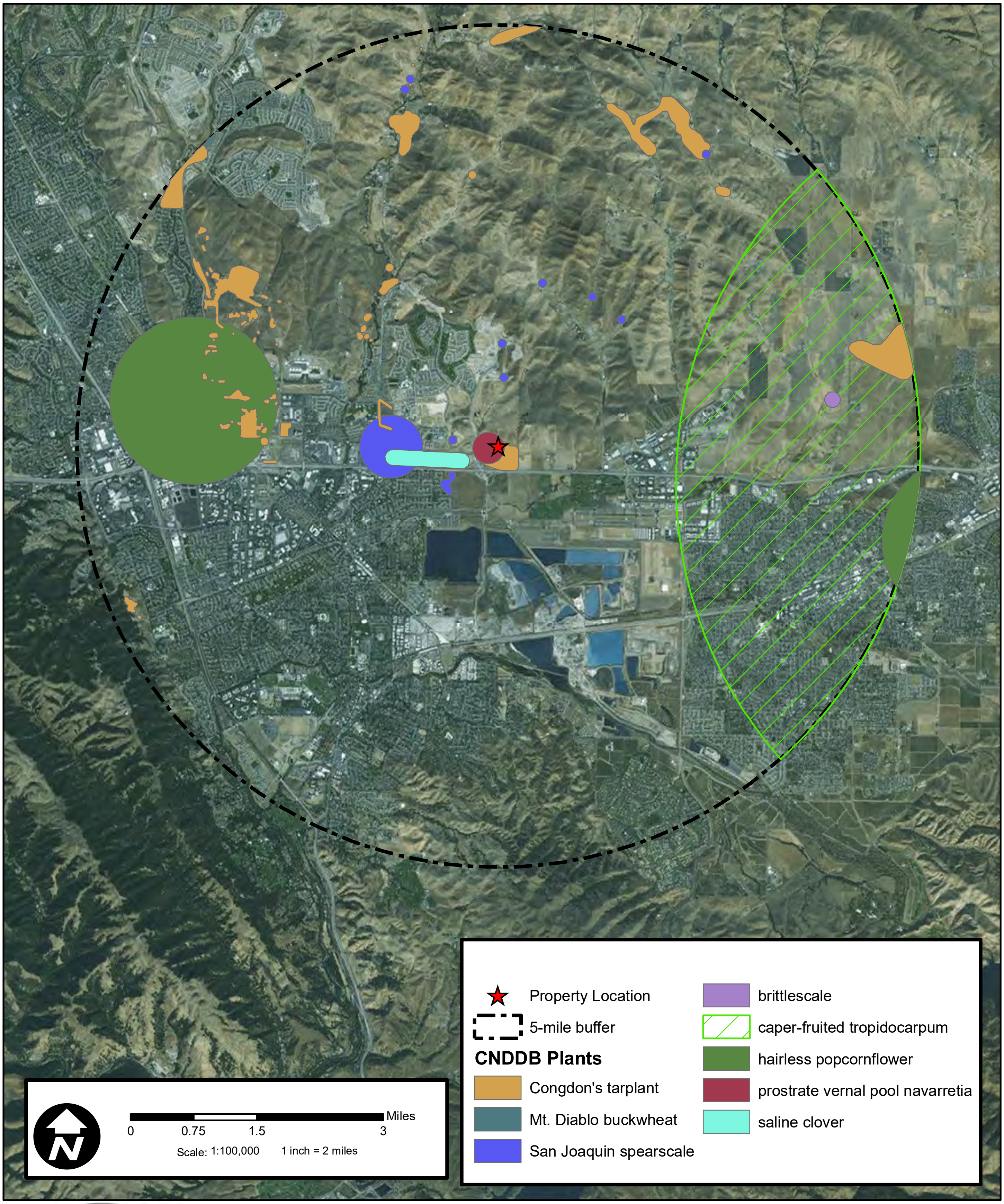


Figure 5: CNDDB Plants Map
Chen & Anderson Properties
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.
193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Aerial Imagery Source & Date: SFEI & Quantum Spatial, June 12, 2014

Figure 6: Soils Map
Dublin Fallon East Project
Dublin, California

OLBERDING
-ENVIRONMENTAL-

193 Blue Ravine Rd. Ste. 160
Folsom, California 95630
Phone: (916) 985-1188

Map Revision Date: 9/12/2022

OLBERDING ENVIRONMENTAL

193 Blue Ravine Rd. Ste. 160
Folsom, California 95630
Phone: (916) 985-1188

Figure 7: Chen/Anderson
Special-Status Plants Location Map
Dublin Fallon East Project
Dublin, California

Map Revision Date: 11/2/2022

ATTACHMENT 2
TABLES

Table 1
Plant Species Observed

Table 1. Plant Species Observed Within/Adjacent to the Survey Area	
Scientific Name	**Common Name**
Plant Species Observed	
Achyrachaena mollis	Blow wives
Agoseris grandiflora	California dandelion
Amsinckia menziesii	Menzie's fiddleneck
Anamopsis californica	Yerba mansa
***Atriplex joaquinana**	**San Joaquin spearscale**
Avena fatua	Wild oat
Baccharis pilularis	Coyote brush
Bellardia trixago	Mediterranean lineseed
Brassica nigra	Black mustard
Bromus diandrus	Ripgut brome
Bromus hordeaceous	Soft chess
Bromus madritensis ssp. *rubens*	Red brome
Capsella bursa-pastoris	Shepard's purse
Cardamine oligosperma	Ideho bittercress
Carduus pychnocephalus	Italian thistle
Centaurea solstitialis	Yellow starthistle
*** *Centromadia parryi* ssp. *congdonii***	**Congdon's tarplant**
Centromadia pungens ssp. pungens	Common tarweed
Chamomilla suaveolens	Pineapple weed
Cirsium vulgare	Bull thistle
Conium maculatum	Poison hemlock
Convolvulus arvensis	Field bindweed
Cotula coronopifolia	Brass buttons
Cressa truxillensis	Alkali weed
Cynara cardunculus	Artichoke thistle
Cynodon dactylon	Bermuda grass
Cyperus eragrostis	Tall flatsedge
Distichilis spicata	Salt grass
Dittrichia graveolens	Stinkwort
Downingia pulchella	Flatface downingia
Eleocharis paularis	Spike rush
Elymus triticoides	Beardless wild rye
Epilobium ciliatum	Fringe willowherb
Eremocarpus setigerus	Dove weed
Eriogonum fasciculatum	California buckwheat
Erodium botrys	Big heron bill
Erodium cicutarium	Red-stemmed filaree
Erodium moschatum	White stemmed filaree
Eschscholzia californica	California poppy
Eucalyptus camaldulensis	Red gum
Euphorbia peplus	Petty spurge
Festuca perennis	Italian rye grass
Frankenia salina	Alkali heath
Geranium dissectum	Cut leaved geranium
Helminthotheca echioides	Bristly ox-tongue

Table 1. Plant Species Observed Within/Adjacent to the Survey Area	
Scientific Name	**Common Name**
Hordeum brachyantherum	Meadow barley
Hordeum marinum var. gussoneanum	Mediterranean barley
Hordeum murinum var. leporinum	Foxtail
Juncus bufonius	Toad rush
Juncus balticus	Baltic rush
Juncus xiphioides	Iris leaf rush
Lactuca serriola	Prickly lettuce
Lepidium latipes	Dwarf pepper grass
Limosella acaulis	Stemless mudwort
Lotus corniculatus	Bird’s foot trefoil
Lupinus sp.	Lupine
Lysimachia arvensis	Scarlet pimpernel
Lythrum hyssopifolia	Loosestrife
Lolium multiflorum	Italian rye grass
Malva parviflora	Cheeseweed
Matricaria discoidea	Pineapple weed
Medicago lupulina	Black medick
Medicago polymorpha	Bur clover
Melilotus indicus	Annual yellow sweetclover
Microseris douglasii	Douglas’ microseris
Nasturtium officinale	Watercress
Nerium oleander	Oleander
Phalaris paradoxa	Hood canarygrass
Picris echioides	Bristly oxtongue
Plagiobothrys humistratus	Dwarf allocarya
Plagiobothrys sp. (other)	Popcorn flower
Plantago elongata	Coastal plantain
Plantago erecta	California plantain
Plantago lanceolata	English plantain
Pleuropogon californicus	Semaphore grass
Platycladus orientalis	Oriental arborvitae
Poa annua	Annual bluegrass
Polygonum aviculare	Prostrate knotweed
Polypogon monspelinensis	Rabbit’s foot grass
Populus fremontii	Fremont cottonwood
Psilocarphus brevissimus	Woolly marbles
Quercus agrifolia	Coast live oak
Quercus douglasii	Blue oak
Quercus lobata	Valley oak
Ranunculus repens	Creeping buttercup
Ranunculus sceleratus	Cursed crowfoot
Raphanus raphanistrum	Wild radish
Raphanus sativus	Wild radish
Rumex crispus	Curly dock
Salix exigua	Narrowleaf willow
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow

Table 1. Plant Species Observed Within/Adjacent to the Survey Area	
Scientific Name	**Common Name**
Salsola tragus	Russian thistle
Sidalcea malviflora	Checker mallow
Silybum marianum	Milk thistle
Sonchus asper	Spiny sowthistle
Stellaria media	Common chickweed
Trifolium fucatum	Bull clover
Trifolium hirtum	Rose clover
Trifolium hydrophilum	**Saline clover**
Trifolium tomentosum	Woolly clover
Trifolium variegatum	Variegated clover
Typha latifolia	Broadleaf cattail
Ulmus pumila	Siberian elm
Vicia villosa	Hairy vetch
Veronica anagallis-aquatica	Water speedwell
Veronica peregrina	Neckweed
Vicia sativa ssp. *nigra*	Common vetch
Vicia sativa	Spring vetch
Vicia villosa	Hairy vetch
Vulpia bromoides	Six weeks fescue
Xanthium spinosum	Spiny cocklebur
*** CNPS List 1B Species**	

Table 2
Special-Status Species for the Las Trampas Ridge, Diablo, Hayward, Dublin Quadrangle Maps

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS)** [2]	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
PLANTS					
Large-Flowered Fiddleneck (*Amsinckia grandiflora*)	E/E/1B	April – May	Cismontane woodland, valley and foothill grassland, annual grassland in various soils.	Moderate	May occur
Bent-Flowered Fiddleneck (*Amsinckia lunaris*)	-/-/1B	March – June	Cismontane woodland, valley and foothill grassland, and coastal bluff scrub.	Low	Not likely to occur
Slender Silver Moss (*Anomobryum julaceum*)	-/-/2	N/A	Broadleafed upland forest; lower montane coniferous forest; North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts.	No	Presumed Absent
Mount Diablo Manzanita (*Arctostaphylos auriculata*)	-/-/1B	January – March	Chaparral, in canyons and on slopes, on sandstone.	No	Presumed Absent
Contra Costa Manzanita (*Arctostaphylos manzanita* ssp. *laevigata*)	-/-/1B	January – February	Chaparral, rocky slopes.	No	Presumed Absent
Pallid Manzanita (*Arctostaphylos pallida*)	T/E/1B	December – March	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub, in sandy or gravely soils. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire.	No	Presumed Absent
Alkali Milk-Vetch (*Astragalus tener* var. *tener*)	-/-/1B	March – June	Playas, valley and foothill grasslands in adobe clay soils, and vernal pools in alkaline soils.	Moderate	May occur
Heartscale (*Atriplex cordulata*)	-/-/1B	April – October	Chenopod scrub, valley and foothill grassland on alkaline flats and scalds, sandy soils.	Moderate	May occur
Brittlescale (*Atriplex depressa*)	-/-/1B	May – October	Chenopod scrub, meadows and sinks, playas, valley and foothill grasslands, and alkaline vernal pools with clay substrate.	Moderate	May occur

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS) [2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
San Joaquin Spearscale (*Atriplex joaquiniana*)	-/-/1B	April – October	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland in alkaline soils.	High	**Present**
Lesser saltscale (*Atriplex minuscula*)	-/-/1B	May – October	Chenopod scrub, meadows and seeps, playas, valley grassland and alkaline sinks.	Moderate	May occur
Big-Scale Balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*)	-/-/1B	March – June	Chaparral, cismontane woodland, and valley and foothills grasslands, sometimes in serpentinite outcrops.	No	Presumed Absent
Big Tarplant (*Blepharizonia plumosa*)	-/-/1B	July – October	Valley and foothill grassland, dry hills and plains in annual grassland, clay to clay-loam soils; usually on slopes and often in burned areas.	Moderate	May occur
Round-Leaved Filaree (*California macrophylla*)	-/-/1B	March – May	Cismontane woodland and valley and foothill grassland in clay soils.	Moderate	May occur
Mount Diablo Fairy-Lantern (*Calochortus pulchellus*)	-/-/1B	April – June	Chaparral, cismontane woodland, riparian woodland, and valley and foothill grassland; on wooded and brushy slopes.	No	Presumed Absent
Chaparral Harebell (*Campanula exigua*)	-/-/1B	May – June	Chaparral, in rocky, usually serpentine soils.	No	Presumed Absent
Bristly Sedge (*Carex comosa*)	-/-/2	May – September	Coastal prairie, lake margins that form marshes or swamps, and valley and foothill grasslands.	No	Presumed Absent
Congdon's Tarplant (*Centromadia parryi* ssp. *congdonii*)	-/-/1B	June – November	Valley and foothill grasslands in alkaline soils.	High	**Present**
Robust Spineflower (*Chorizanthe robusta* var. *robusta*)	E/-/1B	April – September	Openings in cismontane woodlands, coastal dunes, and in valley and foothill grasslands with sandy or gravelly soils.	No	Presumed Absent

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS)[2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
Presidio Clarkia (*Clarkia franciscana*)	E/E/1B	May – July	Serpentine outcrops in valley and foothill grassland or coastal scrub.	No	Presumed Absent
Hispid Bird's-Beak (*Cordylanthus mollis* ssp. *hispidus*)	-/-/1B	June – September	Meadows and seeps, playas, valley and foothill grasslands in alkaline soils.	No	Not Likely to Occur
Palmate-Bracted Bird's-Beak (*Cordylanthus palmatus*)	E/E/1B	May – October	Chenopod scrub, valley and foothill grassland; usually on Pescadero silty clay which is alkaline, with *Distichlis*, *Frankenia*, etc.	No	Presumed Absent
Hoover's Cryptantha (*Cryptantha hooveri*)	-/-/1A	April – May	Valley and foothill grassland, in coarse sand, inland dunes.	No	Presumed Absent
Hospital Canyon Larkspur (*Delphinium californicum* ssp. *interius*)	-/-/1B	April – June	Cismontane woodland, chaparral; in wet, boggy meadows, openings in chaparral and in canyons, mesic.	No	Presumed Absent
Recurved Larkspur (*Delphinium recurvatum*)	-/-/1B	March – May	Chenopod scrub, cismontane woodland, and valley and foothill grasslands in alkaline soils.	No	Presumed Absent
Norris' Beard Moss (*Didymodon norrisii*)	-/-/2	N/A	Cismontane woodland, lower montane coniferous forest; intermittently mesic, rock.	No	Presumed Absent
Western Leatherwood (*Dirca occidentalis*)	-/-/1B	January – April	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and mesic riparian woodland.	No	Presumed Absent
Tiburon Buckwheat (*Eriogonum luteolum* var. *caninum*)	-/-/1B	June – September	Chaparral, coastal prairie, and valley and foothill grassland in serpentine soils.	No	Presumed Absent
Ben Lomond Buckwheat (*Eriogonum nudum* var. *decurrens*)	-/-/1B	June – October	Chaparral, cismontane woodland, lower montane coniferous forest (maritime ponderosa pine sandhills), sandy.	No	Presumed Absent

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS) [2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
Mount Diablo Buckwheat (*Eriogonum truncatum*)	-/-/1B	April – November	Chaparral, coastal scrub, and valley and foothill grasslands in sandy soils.	No	Presumed Absent
Diamond-Petaled California Poppy (*Eschscholzia rhombipetala*)	-/-/1B	March – April	Valley and foothill grassland, alkaline, clay slopes and flats.	No	Not Likely to Occur
Stinkbells (*Fritillaria agrestis*)	-/-/4	February – April	Cismontane woodland, chaparral, valley and foothill grassland; sometimes on serpentine, mostly found on non-native grassland or in grassy openings in clay soil.	No	Not Likely to Occur
Talus Fritillary (*Fritillaria falcata*)	-/-/1B	March – May	Chaparral, cismontane woodland, lower montane coniferous forest; on shale, granite, or serpentine talus.	No	Presumed Absent
Fragrant Fritillary (*Fritillaria liliacea*)	-/-/1B	February – April	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grasslands, often in serpentine soils.	No	Presumed Absent
Diablo Helianthella (*Helianthella castanea*)	-/-/1B	March – June	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils, often in partial shade.	No	Presumed Absent
Brewer’s Western Flax (*Hesperolinon breweri*)	-/-/1B	May – July	Chaparral, cismontane woodland, valley and foothill grassland. Often in rocky serpentine soils.	No	Presumed Absent
Santa Cruz Tarplant (*Holocarpha macradenia*)	T/E/1B	June – October	Coastal prairie, coastal scrub, and valley and foothill grasslands, often with clay, sandy soils; often with non-natives.	No	Possibly extirpated in this area
Contra Costa Goldfields (*Lasthenia conjugens*)	E/-/1B	March – June	Valley and foothill grassland, cismontane woodland, and vernal pools, swales, and low depressions in open grassy areas.	No	Possibly extirpated in this area

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS)** [2]	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
Woolly-Headed Lessingia (*Lessingia hololeuca*)	-/-/3	June – October	Broadleafed upland forest, coastal scrub, lower montane coniferous forest, and valley and foothill grassland in clay and serpentine soils.	No	Presumed Absent
Showy Golden Madia (*Madia radiata*)	-/-/1B	March – May	Valley and foothill grassland, cismontane woodland, chenopod scrub, mostly on adobe clay in grassland or among shrubs.	No	Not Likely to Occur
Hall's Bush-Mallow (*Malacothamnus hallii*)	-/-/1B	May – September	Chaparral and coastal scrub, some populations on serpentine soil.	No	Presumed Absent
Mount Diablo Cottonweed (*Micropus amphibolus*)	-/-/3	March – May	Broadleafed upland forest, chaparral, cismontane woodland, and valley and foothill grasslands in rocky soils.	No	Presumed Absent
San Antonio Hills Monardella (*Monardella antonina* ssp. *antonina*)	-/-/3	June – August	Chaparral and cismontane woodland.	No	Presumed Absent
Robust Monardella (*Monardella villosa* ssp. *globosa*)	-/-/1B	June – July	Openings in broadleafed upland forest and chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands.	Low	Not Likely to Occur
Little Mousetail (*Myosurus minimus* ssp. *apus*)	-/-/3	March – June	Valley and foothill grassland, vernal pools, alkaline.	No	Presumed Absent
Prostrate Vernal Pool Navarretia (*Navarretia prostrata*)	-/-/1B	April – June	Coastal scrub, valley and foothill grassland, vernal pools, alkaline soils in grassland, or in mesic vernal pools, meadows and seeps.	High	May Occur
Mount Diablo Phacelia (*Phacelia phacelioides*)	-/-/1B	April – May	Chaparral, cismontane woodland; adjacent to trails, on rock outcrops and talus slopes; sometimes on serpentine.	No	Presumed Absent
Saline Clover (*Trifolium hydrophilum*)	-/-/1B	April – June	Marshes and swamps, valley and foothill grasslands with mesic, alkaline soils, and vernal pools.	High	Present

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS) [2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
Hairless Popcorn-Flower (*Plagiobothrys glaber*)	-/-/1A	March – May	Meadows and seeps, marshes and swamps, coastal salt marshes and alkaline meadows.	Moderate	May Occur
Oregon Polemonium (*Polemonium carneum*)	-/-/2	April – September	Coastal prairie, coastal scrub, and lower montane coniferous forest from 0-1830 meters in elevation.	No	Presumed Absent
Slender-Leaved Pondweed (*Potamogeton filiformis*)	-/-/2	May – July	Assorted freshwater marshes and swamps. Shallow, clear water of lakes and channels.	Low	Presumed Absent, lack of sustained water in drainages
Eel-Grass Pondweed (*Potamogeton zosteriformis*)	-/-/2	June – July	Assorted freshwater marshes and swamps.	No	Presumed Absent
Adobe Sanicle (*Sanicula maritima*)	-/R/1B	February – May	Meadows and seeps, valley and foothill grassland, chaparral, and coastal prairie. Moist clay or ultramafic soils, wet and dry clay soils, coastal sage scrub.	No	Presumed Absent
Rock Sanicle (*Sanicula saxatilis*)	-/R/1B	April – May	Broadleafed upland forest, chaparral, valley and foothill grassland; bedrock outcrops and talus slopes in chaparral or oak woodland habitat.	No	Presumed Absent
Rayless or Chaparral Ragwort (*Senecio aphanactis*)	-/-/2	January – April	Cismontane woodland, coastal scrub, drying alkaline flats, chaparral.	No	Presumed Absent
Most Beautiful Jewel-Flower (*Streptanthus albidus* ssp. *peramoenus*)	-/-/1B	April – June	Chaparral, cismontane woodland, and valley and foothill grasslands in serpentine soils on ridges and slopes.	No	Presumed Absent

Table 2. Special-Status Species for the Diablo, Dublin, Hayward and Las Trampas Ridge 7.5-minute Quadrangle Maps[1]					
Common Name/ Scientific Name	**Status (Fed/State/CNPS) [2]**	**Blooming or Survey Period**	**Habitats of Occurrence**	**Potential on Site?**	**Status on Site ****
Long-styled sand spurrey *(Spergularia macrotheca longistyla)*	-/-/1B	February – May	Alkaline meadows and seeps, marshes and swamps.	Moderate	May occur
Mount Diablo Jewel-Flower (*Streptanthus hispidus*)	-/-/1B	March – June	Valley and foothill grassland, chaparral; talus or rocky outcrops.	No	Presumed Absent
Showy Rancheria Clover (*Trifolium amoenum*)	E/-/1B	April – June	Coastal bluff scrub, and valley and foothill grasslands, sometimes in serpentine soils.	No	Not Likely to Occur
Coastal Triquetrella (Moss) (*Triquetrella californica*)	-/-/1B	N/A	Coastal bluff scrub, coastal scrub; moss growing on soil.	No	Presumed Absent
Caper-Fruited Tropidocarpum (*Tropidocarpum capparideum*)	-/-/1B	March – April	Valley and foothill grasslands on alkaline hills.	No	Presumed Absent
Oval-Leaved Viburnum (*Viburnum ellipticum*)	-/-/2	May – June	Chaparral, cismontane woodlands, and lower montane coniferous forest.	No	Presumed Absent

1. Special-status plants and animals as reported by the California Natural Diversity Data Base, California Native Plant Society, and other background research September 2008.
2. Order of Codes for Plants - Fed/State/CNPS

   Codes:
   E - Federally/State Listed as an Endangered Species
   T - Federally/State Listed as a Threatened Species
   R - Rare
   1B - California Native Plant Society considers the plant Rare, Threatened, or Endangered in California and elsewhere.
   1A - CNPS Plants presumed extinct in California.
   2 - CNPS Plants Rare, Threatened or Endangered in California, but more common elsewhere.
   3 - CNPS Plants on a review list to find more information about a particular species.
   4 - CNPS Plants of limited distribution - a watch list.
   A2 - Species currently known from three to five regions in Alameda and Contra Costa Counties, or, if more, meeting other important criteria such as small populations, stressed or declining populations, small geographical range, limited or threatened habitat, etc.

ATTACHMENT 3
SITE PHOTOGRAPHS

1. Facing northwest, photo shows grassland habitat in the foreground, wetland habitat in the middle ground, and upland habitat in the background with grazing cattle. March 17, 2022

2. Facing west, photo shows cattle grazing the grassland habitat on the southern portion of the Property. March 17, 2022

3. Facing west, photo shows grassland habitat with Congdon’s tarplant population in the foreground. March 17, 2022

4. Photo shows Congdon’s tarplant observed adjacent to the western wetland. June 28, 2022

5. Facing north, photo shows wetland area inundated with water. March 17, 2022

6. Photo shows San Joaquin spearscale observed on the Property. April 12, 2022

7. Photo shows saline clover individual observed on the Property. April 12, 2022

8. Facing north, photo shows the large seasonal wetland feature across the western portion of the Chen Property as well as the annual grassland habitat in the background. June 1, 2017.

9. Facing east, photo shows grazed annual grassland with Congdon's tarplant present along the southern portion of the Chen Property. June 28, 2017.

10. Photo shows a large Congdon's tarplant plant in full bloom. June 28, 2017.

11. Facing northwest, photo shows the quarry pond on the Anderson Property. June 1, 2017.

Appendix E

Listed Large Branchiopod Wet Season Survey 90-Day Report

LISTED LARGE BRANCHIOPOD
WET SEASON SURVEY
90-DAY REPORT

FOR THE

DUBLIN FALLON EAST PROPERTY

CITY OF DUBLIN, ALAMEDA COUNTY, CALIFORNIA

Prepared for:

GH PACVEST, LLC.
3000 Executive Parkway, Suite 375
San Ramon, CA 94583

Prepared by:

OLBERDING ENVIRONMENTAL, INC.
Wetland Regulatory Consultants
Contact: Jeff Olberding
193 Blue Ravine, Suite 165
Folsom, California 95630

Phone: (925) 866-2111

NOVEMBER 2022

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ATTACHMENTS

USFWS REFERENCE NUMBER 2018-TA-1783

1.0 SUMMARY

This report summarizes the results of protocol level wet and dry season surveys for listed large branchiopods conducted within aquatic features on the Dublin Fallon East Property during the 2021/2022 season. Additionally, this report includes survey results of the non-protocol level wet season surveys that were conducted on the property during the 2018 season. Survey target species included federally endangered longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool tadpole shrimp (*Lepidurus packardi*), and federally threatened vernal pool fairy shrimp (*Branchinecta lynchii*).

The 2021/2022 protocol level wet season surveys were conducted by Olberding Environmental Inc. between December 2021, and April 2022 with the accompanying dry season sampling conducted by Madrone Ecological on June 1st, and August 10th, 2022. Additional identification work in the form of cyst culturing was conducted by Helm Biological Consulting between June and October 2022. The methods and results from the dry season survey and cyst culturing are summarized within this report, and both reports are included as Attachments 4 and 5. The additional non-protocol level wet season surveys were conducted by Olberding Environmental Inc. between April 2018, and June 2018 and is included as Attachment 6. Field surveys were conducted under the authorization of U.S. Fish and Wildlife Service (USFWS) pursuant to Endangered/Threatened Species Take Permit No. TE-85618B-0.

2.0 LOCATION

The Properties consist of approximately 135 acres and 50 acres respectively located just east of the intersection of Fallon Road and Croak Road, north of I-580, in Dublin, California. Attachment 1, Figure 1 depicts the regional location of the Properties in the San Francisco Bay Area. Attachment 1, Figure 2 illustrates the vicinity of the Properties in relationship to the City of Dublin. Attachment 1, Figure 3 identifies the locations of the Properties on a USGS Quadrangle base map. Attachment 1, Figure 4 shows an aerial of the Properties.

Access to the Properties is provided from Interstate 580. From 580, take the El Charro/Fallon Road exit and make a left onto Fallon Road. Travel north for 0.5 miles then make a right onto Croak Road, the west portion of the property will be found on the right. Continue on Croak Road for 0.2 miles, the east portion of the property will be on the right. These two separate parcels, bisected north to south by Croak Road, make up the Dublin Fallon East Property.

3.0 GENERAL SITE CONDITIONS AND HABITAT

A majority of the Property support California non-native annual grassland habitat. Plant species diversity is low, primarily due to grazing pressure. Dominant plant species include a mixture of annual grasses as well as forbs that are common to locally abundant at various times of the year.

On the east portion of the property, an abandoned quarry pit in the north portion of the site supports a large isolated seasonal wetland and freshwater marsh bordered by a small band of riparian woodland. Two small, isolated seasonal wetlands are found in the southwestern portion of the Property.

On the west portion of the property, a small section of riparian woodland habitat occurs in the northwestern corner of the Property. Four ephemeral drainages occur within the valleys among the steep grass covered hillsides and an additional drainage flows through the riparian habitat. Multiple wetland features were observed on the Property, with the largest wetland located along the western portion of the Property. Water exits a culvert just outside the boundary of the Property and discharges onto the Property creating a large wetland across the southwestern portion of the Property. There are two other areas where wetlands exist, one in the southeastern corner of the Property and the other in the northeastern corner at the top of one of the drainage features. A line of ornamental trees was observed along the western and southwestern corner just outside of the Property.

Table 1 below shows the precipitation records for the 2021/2022 water year from the Livermore weather station, as compared to the average precipitation (2000 – 2020) from the region (NOAA 2022). During the 2021/2022 water season, the Livermore area experienced slightly less precipitation than average at 12.83 inches, approximately 85% of the normal 15.18 inches.

Table 1. 2021/2022 Water Year and Annual Average Precipitation for Livermore, CA.

Month	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	TOTAL
2021/2022 Water Year Precipitation	0.02	0.03	0.48	1.03	0	0	0	0	0.49	5.22	0.71	4.85	**12.83**
Average Annual Precipitation	2.83	2.92	2.25	1.08	0.56	0.14	0	0.09	0.08	0.75	1.68	2.8	**15.18**

Weather conditions during the wet season survey events varied throughout the year; basic weather conditions for each survey event are recorded on the data sheets included as Attachment 3.

4.0 METHODS AND MATERIALS

The USFWS granted approval to survey the site on November 9, 2021. The 2021/2022 protocol level surveys were conducted every two weeks through the beginning of April 2022. Surveys were conducted in accordance with the terms and conditions of our permit # 2018-TA-1783 and as outlined in the November 13, 2017, *Survey Guidelines for Large Listed Branchiopods* (USFWS 2017).

4.1 Wet Season Sampling

The surveyed features were sampled with a 5-foot-long dip net with a 12 inch wide net frame and 650 micron mesh. Sampling technique involved making a series of pulls by extending the net out and pulling it back in a sweeping motion. The net was examined for the presence of branchiopods and then cleaned of debris between pulls. The average effort ranged between five (5) to fifteen (15) pulls per survey feature depending on the size of the feature. In addition, the survey features were visually scanned for the presence or branchiopods prior to each net pull. All other invertebrates and vertebrates were identified to species and documented on the data sheets. Air temperature, water temperature, and approximate maximum depth of ponding was measured and recorded during each sampling session for each sampled feature. Any surface feature that was inundated with 3 centimeters or more of water at the time of the individual survey was subject to sampling.

4.2 Dry Season Sampling

Methods followed U.S. Fish and Wildlife Service's (USFWS 2017) *Survey Guidelines for Listed Large Branchiopods* for dry-season sampling and consisted of first soil collection, second soil processing and analysis, and last cyst culturing as described below.

4.2.1 Soil Collection, Processing, And Analysis

Soil samples from 16 features were collected on June 1, 2022, by Madrone biologist Dustin Brown. All depressional features that appeared to pond water were sampled. The soil samples were processed following methods outlined in Survey Guidelines for Large Listed Branchiopods (USFWS 2017) and described below.

A brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The soil material collected from each aquatic feature was placed into the brine solution and worked by hand to break down soil structure. The organic material rising to the top of the brine solution was poured onto a 710-micron-diameter pore-size sieve stacked atop a 150-micron-diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The organic material retained from the 150-micron-diameter pore-size sieve was then rinsed gently with lukewarm tap water, and then removed and thinly distributed into plastic Petri dishes. All sieved fractions were microscopically inspected for the presence of large branchiopod eggs. Evidence of other aquatic invertebrates encountered was also noted on the lab data sheet.

4.2.2 Cyst Culturing

Petri dishes containing soils with *Branchinecta* cysts were placed into individual 6-quart sized plastic containers. The soils were saturated with 50° F well water (non-chlorinated) and allowed to dry. This saturation and drying process was repeated three times. The soils were then inundated completely with 50° F well water. The containers holding the inundated soils were inserted into an environmental chamber. The environmental chamber controls were set to mimic the winter light, humidity, and temperature fluctuations of the Project's vicinity. The contents of the containers were monitored daily for fairy shrimp hatchlings (instars).

If no hatchlings were observed after ten (10) days, the containers were removed from the environmental chamber and the soils were allowed to completely dry before reinitiating the hatching process described above. To expedite the culturing process, all emerging instars were removed from their original containers and placed into a separate container. The original container was dried, and the culturing process was repeated. This technique allows multiple generations of instars to continue to grow to maturity simultaneously. A total of three hatching attempts were performed on each soil sample.

Fairy shrimp hatchlings were feed ground fish food and reared in the environmental chamber until they were mature enough to be identified using dichotomous keys and diagrams from "Fairy Shrimps of California's Puddles, Pools, and Playas" (Eriksen and Belk 1999), two more recent publications concerning the identification of San Diego fairy shrimp (*Branchinecta sandiegonensis*) and versatile fairy shrimp (*B. lindahli*) (Simovich et al 2013; Patel et al. 2018), and compared to Dr. Helm's large branchiopod reference collection.

5.0 SURVEYED FEATURES

A jurisdictional wetland delineation was verified by the U.S. Army Corps of Engineers during 2018. The verified wetland delineation resulted in a total of 11.18 acres of wetlands, 0.1 acre of "other waters", and 0.091 acre of wetland swales throughout the Dublin Fallon East Property. Surveying efforts focused on the seasonal wetlands; however, ditches and other parts of the site that ponded water to a depth of at least 3 centimeters were subject to sampling. Features sampled included pools, seasonal wetlands, and wetland swales. The exact number of surveyed features for each event ranged dramatically due to natural precipitation. A summary of the number of features sampled per survey event is provided below in Section 6.1.

6.0 RESULTS AND DISCUSSION

The USFWS granted approval to conduct wet season surveys on November 9, 2021. Protocol level surveys began on December 8, 2021, with subsequent surveys taking place every two weeks from December into April. Surveys were conducted on December 27, 2021, January 10, February 7, February 21, March 8, March 21, and April 5, 2022; in accordance with the terms and conditions of our permit (#2018-TA-1783) and as outlined in the November 13, 2017, *Survey Guidelines for Large Listed Branchiopods* (USFWS 2017).

6.1 Wet Season Results

The number of features sampled per survey event is provided below:

- Event 1 – December 27 – 23 features sampled
- Event 2 – January 10 – 13 features sampled
- Event 3 – January 24 – 11 features sampled
- Event 4 – February 7 – 11 features sampled
- Event 5 – February 21 – 7 features sampled
- Event 6 – March 8 – 7 features sampled
- Event 7 – March 21 – 6 features sampled
- Event 8 – April 5 – 5 features sampled

During the 2021/2022 wet season survey events, the most common invertebrate species that were observed included non-biting midges (*Chironomidae*), water flea (*Cladocera*), copepods (*Copepoda*), semi-aqutic fly (*Diptera*), blood worms (*Glycera* sp.), flat worms (*Planaria*), mosquito larvae (*Culicidae*), predaceous diving beetle (*Dytiscidae*), seed shrimp (O*stracods*), clam shrimp (*Diplostraca*), backswimmer (*Notonectid*), water boatman (*Corixidae*), and flatworms. Additionally, Pacific chorus frog tadpoles (*Pseudacris regilla*) were also commonly observed within many of the aquatic features. Additional invertebrates that were occasionally observed includes amphiods (*Hyallea* sp.), mayfly (*Centroptilum* sp.), glass worm (*Chaoborus* sp.), and dragonfly larvae (*Anisoptera* sp.) (See Attachment 3).

No sensitive invertebrates were observed onsite. However, California tiger salamander larvae (*Ambystoma californiense*; CTS) were observed within several of the sampled features on numerous dates. Specifically, CTS larvae were observed in feature An-P1-1 on February 21 and March 8, 2022, and in features An-SW8-3 and An-P1-3 on March 21 and April 5, 2022. When CTS were discovered in a particular feature they were immediately released, and sampling continued elsewhere. Additionally, permitted biologist, Lisa Henderson (TE-13115C-0) was on site during each of the observations and was able to positively identify the small larvae and be sure they were released unharmed.

Survey results from the non-protocol level wet season survey in 2018 included one male and two female individuals of the non-listed species *Branchinecta lindahli* (versatile fairy shrimp). These individuals were observed within the feature Ch-EW1 near the southwest of the Property. Commonly encountered aquatic organisms during the 2018 surveys included Pacific chorus frog tadpoles, water boatman, diving beetles, scuds (*Gammarus*), dragonfly larvae, and mosquito larvae. The 2018 non-protocol level wet season survey results are included as Attachment 6.

In general, most of the site has very few areas that are conducive to fairy shrimp survival. There are no true vernal pools onsite, and most of the isolated features where fairy shrimp may occur are in ditches cut off from continuous water flow, or small seasonal wetlands and depressions scattered throughout the site. In addition, many of these smaller sites do not pond long enough to sustain the fairy shrimp life cycle.

No federally listed vernal pool branchiopods were observed within the Property during the 2021/2022 or the 2018 wet season sampling.

6.2 Dry Season Results

A total of 16 pools were sampled by Madrone Ecological as part of the Dry Season surveys. This included features An-P1, An-SW1, An-SW2, An-SW3, An-SW6, An-SW7, An-SW8, An-SW9, An-SW10, Ch-SW1, Ch-SW2, Ch-SW3, Ch-SW4, and Ch-SW5. Most of the features did not contain any branchiopod species, however two of the features sampled (CH-SW2 and CH-SW3) contained small amounts of *Branchinecta* sp. cysts. These cysts were saved and provided to Brent Helm of Helm Biological Consulting to hatch. Other invertebrate taxa observed in the soil samples included micro-*Tubellaria*, *Cladocera*, *Ostracoda*, *nematoda*, *hydracarina*, and *Collembola*. The full dry season survey report is included as Attachment 4.

6.3 Cyst Culturing Results

The *Branchinecta* cysts from Madrone Ecological were provided to Helm Biological Consulting to hatch. The cysts from CH-SW3 were positively identified on August 9th, 2022, as the common versatile fairy shrimp (*Branchinecta lindahli*). Additional samples were collected from CH-SW2 on August 10th due to the inability for the first samples to hatch. The second round of cysts from CH-SW2 were also identified to be versatile fairy shrimp. The cyst culturing survey report is included as Attachment 5.

No federally listed vernal pool branchiopods were observed within the Property during the 2022 dry season sampling or cyst culturing.

7.0 REFERENCES

Eriksen, C. H., and D. Belk. 1999. Fairy shrimps of California's puddles, pools, and playas. Mad River Press, Inc. Eureka, CA. 196 pp.

NOAA (National Oceanic and Atmospheric Administration). 2022. *Climatological precipitation summary for Livermore*. National Weather Service. San Francisco Area Weather Forecast Office. Monterey, CA. Available online at https://www.weather.gov/wrh/Climate?wfo=mtr. Accessed October 11, 2022.

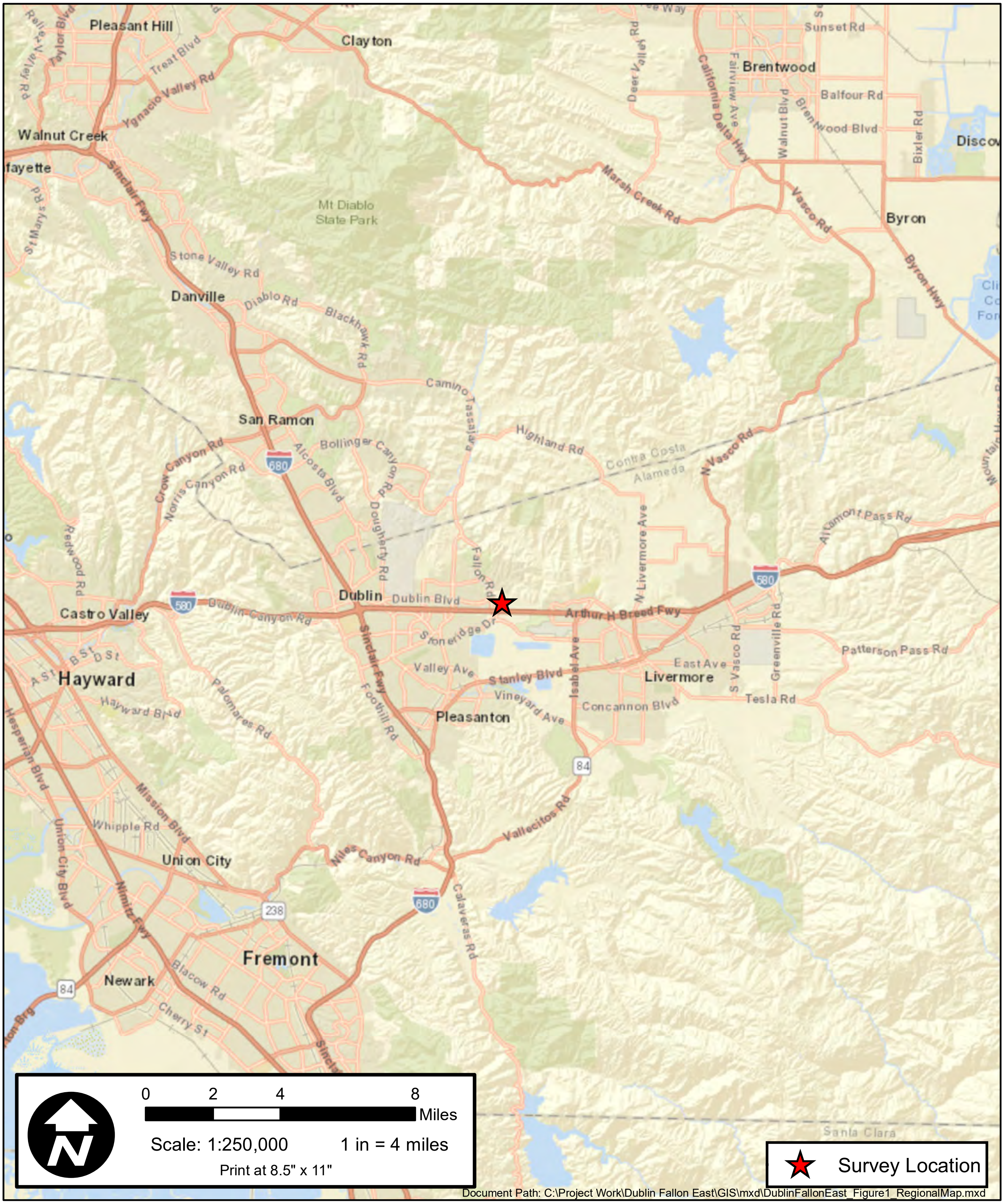
Patel, K.V., Simovich, M.A., Graige, N.S. and Bohonak, A.J., 2018. A clash of characters: The effect of variation on a morphological hybrid index for an endangered California fairy shrimp *Branchinecta sandiegonensis* (Fugate, 1993) (Crustacea: Anostraca). Journal of Crustacean Biology, 38(3), pp.349-353.

Simovich, M.A., Davis, K.B. and Bohonak, A.J., 2013. Landscape homogenization threatens the genetic integrity of the endangered San Diego fairy shrimp *Branchinecta sandiegonensis* (Branchiopoda: Anostraca). Journal of Crustacean Biology, 33(5), pp.730-740.

USFWS (U.S. Fish and Wildlife Service). 2017. *Survey Guidelines for Large Listed Branchiopods.* Pacific Southwest Region, Sacramento, CA. Revised 11/13/2019.

Attachment 1

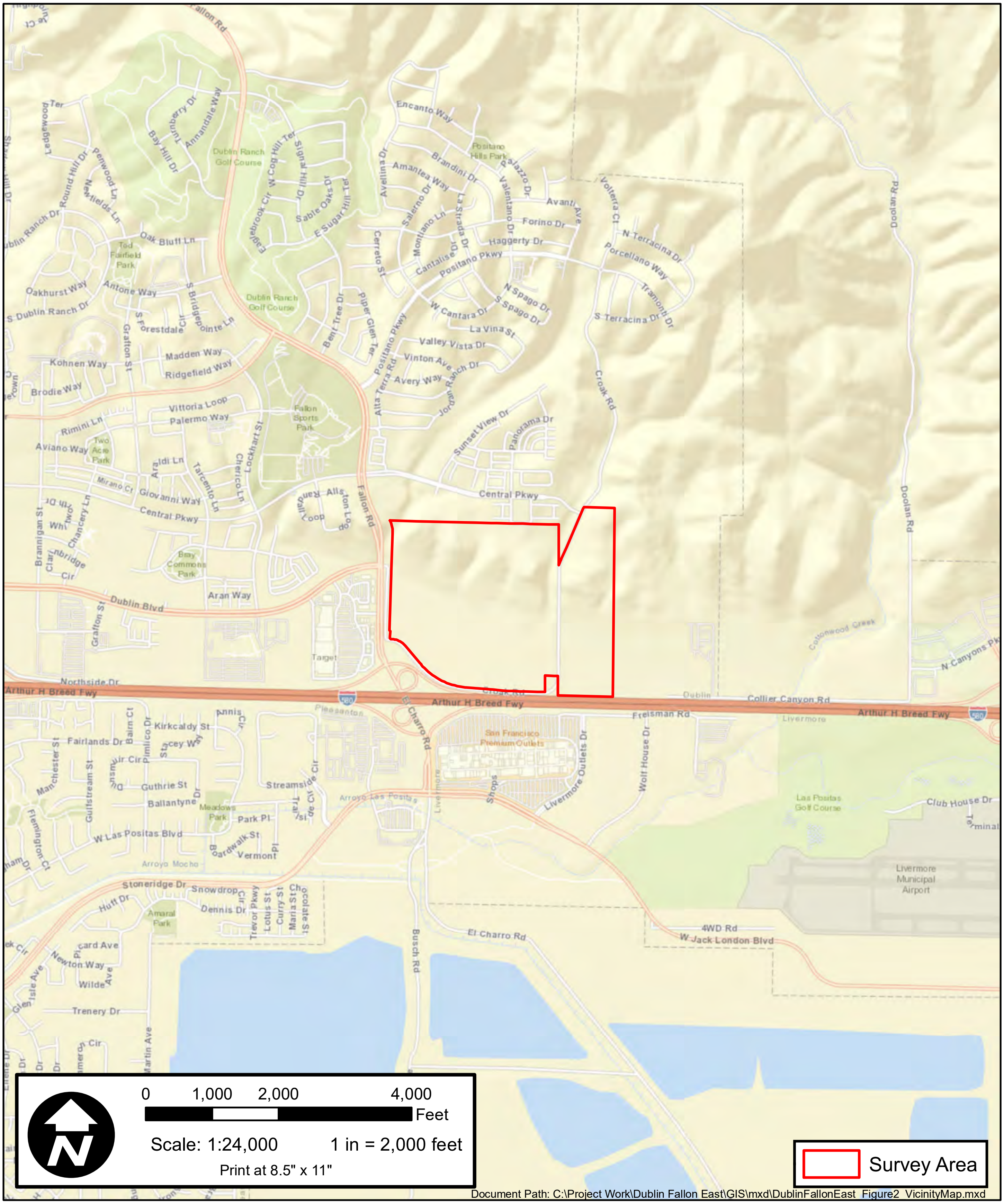
Figures



OLBERDING ENVIRONMENTAL
193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 1: Regional Map
Dublin Fallon East Property
Alameda County, California

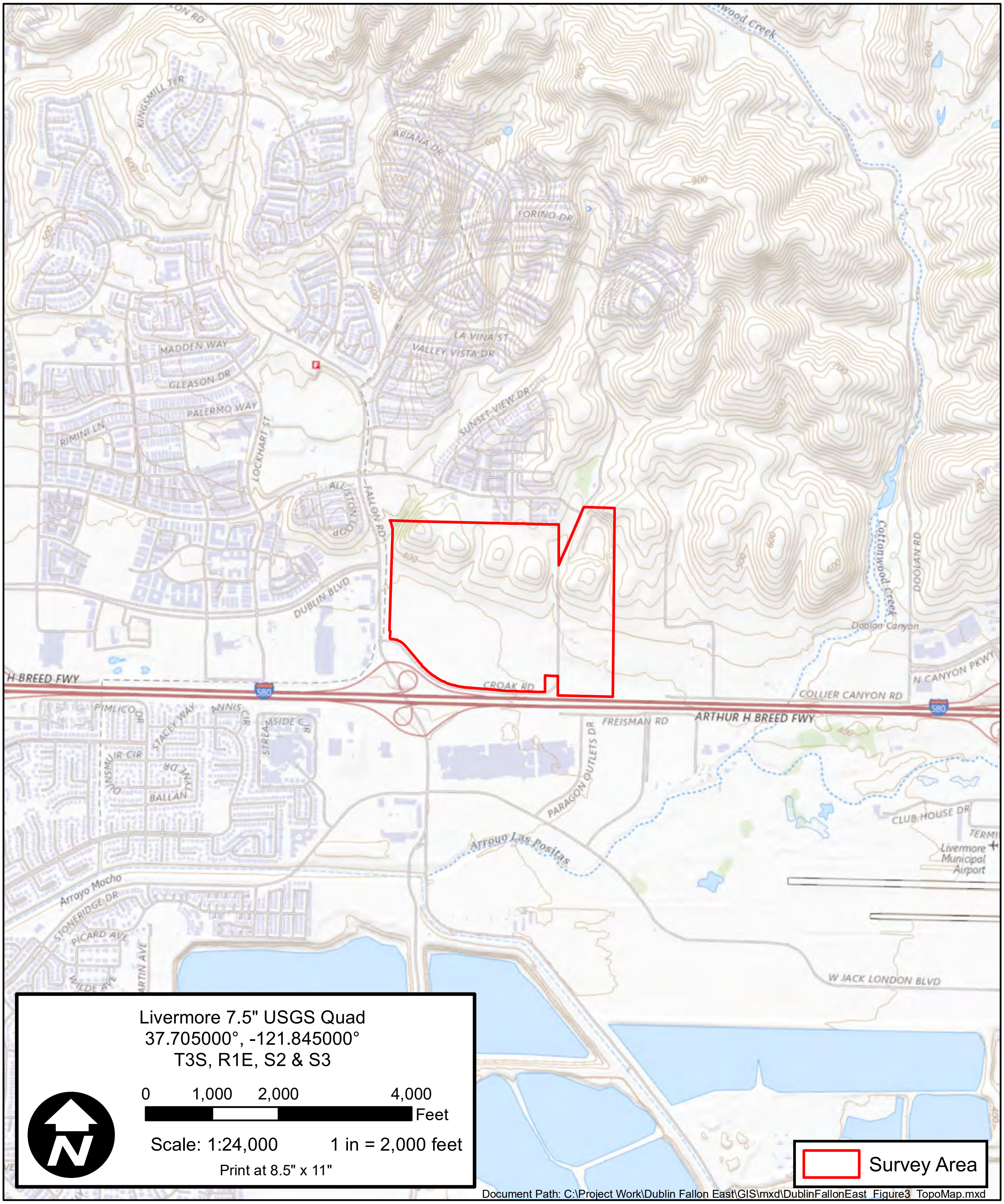
Revision Date: 09/06/2022



193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 2: Vicinity Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022



193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 3: USGS Topographic Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

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193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 4: Aerial Map
Dublin Fallon East Property
Alameda County, California

Revision Date: 09/06/2022

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-ENVIRONMENTAL-
193 Blue Ravine Rd. Ste. 160
Folsom, California 95630
Phone: (916) 985-1188

Figure 5:
Listed Branchiopods Survey Area Map
Dublin Fallon East Project
Alameda County, California

Map Revision Date: 9/22/2022

Attachment 2

Photo Documentation

1. Photo of pool feature An-P1 and the surrounding seasonal wetlands, looking west. Photo taken 12/27/2021.

2. Photo 2 is taken from approximately the same location as photo 1 above, except on 2/22/2022. Note there is significantly less standing water across the landscape.

3. Photo of pool feature Ch-P1, looking west. Photo taken 2/22/2022.

4. Photo of seasonal wetland feature Ch-SW1, looking west. Photo taken 1/10/2022.

5. Photo of seasonal wetland feature An-SW1, looking southeast. Photo taken 12/27/2021.

6. Photo of seasonal wetland feature An-Sw2, looking east. Photo taken 12/27/2021.

7. Photo of pool feature An-P1, looking northwest. Photo taken 1/10/2022.

8. Photo of seasonal wetland feature An-SW8, looking west. Photo taken 12/27/2021.

Attachment 3

Raw Data

Site	Chen/Anderson	**Weather**	overcast, light precipitation, 51°, and 47°
Surveyors	CB, LH, BN, RL, ST	**Date**	December 27-28, 2021

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	10in							X			X		X	X								
Ch-SW1-1	6in		X			X																
Ch-SW1-2	6in					X		X														
Ch-SW1-3	7in					X		X														
Ch-SW1-4	3in					X																
Ch-SW1-5	3in					X								X								
Ch-SW1-6	6in		X			X																
Ch-SW1-7	6in							X														
Ch-SW1-8	6in		X			X							X									
Ch-SW1-9	10in												X									
Ch-SW1-10	8in													X								
Ch-SW1-11	6in																					
Ch-SW4-1	3in																					
Ch-SW4-2	3in																					
Ch-SW5-1	3in																	X				
Ch-SW5-2	3in																					
Ch-SW5-3	3in																	X				
An-SW1	6in													X								
An-SW2	5in																					
An-SW8-1	6in																					
An-P1-1	11in																					
An-P1-2	11in																	X				
An-P1-3	11in																	X				

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site Chen/Anderson **Weather** sunny, clear, 61°

Surveyors CB, LH, BN, RL, ST **Date** 1/10/2022

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	10in				X			X	X	X						X						
Ch-SW1-1	6in				X						X											
Ch-SW1-2	6in				X				X													
Ch-SW1-3	7in							X														
Ch-SW1-4	3in				X								X									
Ch-SW4-1	3in				X		X															
Ch-SW5-1	3in						X															
An-SW1	6in																					
An-SW8-1	5in																					
An-SW8-2	6in				X													X				
An-SW8-3	11in		X																			
An-P1-1	11in				X			X	X							X						
An-P1-2	11in																					

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site	Chen/Anderson	**Weather**	sunny, clear, 65°
Surveyors	CB, LH, BN, RL, ST	**Date**	1/24/2022

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	5in				X			X	X	X						X						
Ch-SW1-1	3in				X	X			X		X		X	X								
Ch-SW1-2	2in				X				X													
Ch-SW1-3	2in							X														
Ch-SW1-9	3in				X								X					X				
An-SW8-1	5in																					
An-SW8-2	6in				X													X				
An-SW8-3	11in		X																			
An-P1-1	11in				X			X	X							X						
An-P1-2	11in																					
An-P1-3	11in																					

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site Chen/Anderson **Weather** sunny, clear, 65°

Surveyors CB, LH, BN, RL, ST **Date** 2/27/2022

Features	**Max Depth**	**Fairy shrimp**	**Diptera**	**Cyzicus**	**Cladocera**	**Ostracod**	**Copopods**	**Beetles**	**Notonectid**	**Corixid**	**Culicidae**	**Mite**	**Amphipod**	**Chironomid**	**Snails**	**Planaria**	**Mayfly**	**HYLA**	**CTS**	**CRF**	**Other**	Notes
Ch-P1	5in				X			X	X	X						X						
Ch-SW1-1	3in				X	X			X		X		X	X								
Ch-SW1-2	2in				X				X													
Ch-SW1-3	2in							X														
Ch-SW1-9	3in				X								X					X				
An-SW8-1	5in				X	X	X															
An-SW8-2	6in				X													X				
An-SW8-3	11in		X																			
An-P1-1	11in				X	X	X		X	X	X					X						
An-P1-2	11in				X	X	X		X	X	X											
An-P1-3	11in																					

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site Chen/Anderson **Weather** overcast, light precipitation, 57°
Surveyors CB, LH, BN, RL, ST **Date** 2/21/2022

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	5in				X	X			X		X		X	X		X						
Ch-SW1-2	2in							X	X			X										
Ch-SW1-3	2in							X														
Ch-SW1-9	3in				X								X					X				
An-P1-1	8in				X													X	X			**CTS larvae observed**
An-P1-2	8in								X		X											
An-P1-3	8in				X				X	X	X								X			

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site Chen/Anderson **Weather** sunny, clear, 73°

Surveyors CB, LH, BN, RL, ST **Date** 3/8/2022

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	5in				X	X			X		X		X	X		X						
Ch-SW1-2	2in							X	X			X										
Ch-SW1-3	2in							X														
Ch-SW1-9	3in				X								X					X				
An-P1-1	8in				X													X	X			**CTS larvae observed**
An-P1-2	8in								X		X											
An-P1-3	8in				X				X	X	X								X			

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site Chen/Anderson **Weather** sunny, clear 76°

Surveyors CB, LH, BN, RL, ST **Date** 3/8/2022

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	5in				X	X			X				X									
Ch-SW1-9	2in				X								X					X				
An-SW8-3	6in				X														X			**CTS larvae observed**
An-P1-1	8in				X													X				
An-P1-2	8in								X		X											
An-P1-3	8in				X														X			**CTS larvae observed**

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Site Chen/Anderson **Weather** sunny, clear, 75°

Surveyors CB, LH, BN, RL, ST **Date** 4/5/2022

Features	Max Depth	Fairy shrimp	Diptera	Cyzicus	Cladocera	Ostracod	Copopods	Beetles	Notonectid	Corixid	Culicidae	Mite	Amphipod	Chironomid	Snails	Planaria	Mayfly	HYLA	CTS	CRF	Other	Notes
Ch-P1	5in				X	X			X				X									
An-SW8-3	4in				X														X			**CTS larvae observed**
An-P1-1	5in				X													X				
An-P1-2	6in								X		X											
An-P1-3	4in				X														X			**CTS larvae observed**

Abundance ratings 5 sweeps

Rare	R	1-2 Species
Not Common	NC	3-10 species
Common	C	11 to 50 Species
Very common	VC	51-100 Sp.
Abundant	A	>100
Present	X	Present

Attachment 4

Dry Season Report

MADRONE ECOLOGICAL CONSULTING

8421 Auburn Blvd., Suite 248
Citrus Heights, CA 95610
www.madroneeco.com
(916) 822-3230

1 November 2022

Mr. Jeff Olberding
Olberding Environmental, Inc.
193 Blue Ravine Road, Suite 165
Folsom, CA 95630

Subject: Anderson and Chen (Grand View Development Project) 2022 Dry Season Vernal Pool Branchiopod Survey, Alameda County, California

Dear Mr. Olberding:

At the request of Olberding Environmental, Inc. (Olberding), Madrone Ecological Consulting, Inc. (Madrone) analyzed soil samples from the approximately 190-acre Anderson and Chen properties, also known as the Grand View Development Project (Study Area) within Alameda County, California as part of a dry season study for federally-listed large branchiopod species. The Study Area is located in the northeast corner of the interchange of Interstate I-580 and Fallon Road in the City of Dublin, Alameda County, California. The Study Area is within portions of Section 35, Township 2 South, Range 1 East of the "Livermore, California" 7.5-Minute Series USGS Topographic Quadrangle (**Figures 1 and 2**).

Authorization from the U.S. Fish and Wildlife Service Recovery Permit branch to conduct the sampling was received on 24 May 2022 via email (**Attachment A**). The purpose of the investigation was to determine the presence of eggs of large branchiopod species (fairy shrimp or tadpole shrimp) listed as threatened or endangered under the federal Endangered Species Act (ESA) (e.g., vernal pool fairy shrimp [*Branchinecta lynchi*], conservancy fairy shrimp [*Branchinecta conservatio*], longhorn fairy shrimp [*Branchinecta longiantenna*], and vernal pool tadpole shrimp [*Lepidurus packardi*]). The soils were collected and analyzed under the authority of USFWS Recovery Permit No. TE-85084C (Dustin Brown).

Methods

Soil samples from 16 features were collected on 1 June 2022 by Madrone senior biologist Dustin Brown. Depressional features that appeared to pond water An-P1, An-SW1, An-SW2, An-SW3, An-SW4, An-SW6, An-SW7, An-SW8, An-SW9, An-SW10, Ch-SW1, Ch-SW2, Ch-SW3, Ch-SW4, and Ch-SW5 were sampled (**Figure 3**).

Aquatic features including drainages (Ch-OW1, 2, 3, and 4), perennial or semi-perennial ponds (Ch-P1) and marshes (Ch-EW1), or swales (Ch-WS1, An-WS1, An-WS2, and An-WS3) and wetlands (Ch-SW6 and An-SW-5) that were located on a gradient and do not pond water were not sampled. After collection the soil samples were transported to the Madrone lab and were processed following methods outlined in the Guidelines (USFWS 2017). In Madrone's laboratory, a brine solution was prepared by mixing table salt (NaCl) with lukewarm tap water in a large container. The soil material collected from each aquatic feature was placed into the brine solution, and worked by hand to break down soil structure. The organic material rising to the top of the brine solution was poured onto a 710-micron-diameter pore-size sieve stacked atop a 150-micron-diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The organic material retained from the 150-micron-diameter pore-size sieve was then rinsed gently with lukewarm tap water, and then removed and thinly distributed into plastic Petri dishes. All sieved fractions were microscopically inspected for the presence of large branchiopod eggs. Evidence of other aquatic invertebrates encountered was also noted on the lab data sheet.

Results

Madrone processed soil samples from a total of 16 habitat features. Eggs from the genus *Branchinecta* were identified in a total of two features including Ch. SW-2 (22 eggs) and CH. SW-3 (48 eggs). Other invertebrate taxa observed in the soil samples included micro-Turbellaria, Cladocera, Ostracoda, nematoda, hydracarina, and Collembola. A data sheet is attached as **Attachment B**.

There are several species within the genus *Branchinecta* that are known to occur within the vicinity of the Study Area including common and federally-listed species. It is unreliable to identify *Branchinecta* eggs to species by visually inspecting their eggs under a microscope. The soil samples were provided to Brent Helm (TE-795930) at Helm Biological Consulting to conduct culturing and rearing of the eggs and to identify the species of *Branchinecta* present. The culturing of the eggs resulted in the identification of the common (non-special status) versatile fairy shrimp (*Branchinecta lindahli*) in both features. See **Attachment C** for a copy of the report from Helm Biological Consulting.

Discussion

No federally-listed vernal pool branchiopods were observed within the Study Area during the 2022 dry season sampling.

If you have any questions or require additional information, please contact me at (916) 822-3230, or at dbrown@madroneeco.com

Sincerely,

Dustin Brown
Senior Biologist

References:

U.S. Department of the Interior, Fish and Wildlife Service. 2017. *Survey Guidelines for the Listed Large Branchiopods*. Sacramento, California. Revised November 13, 2017.

Figures:	**Attachments:**
Figure 1. Regional Map	Attachment A – Dry Season Sampling Approval
Figure 2. Project Location	Attachment B – Dry Season Lab Data Sheet
Figure 3. Survey Area Map	Attachment C – Cyst Culturing Memo from Helm Biological Consulting
	Attachment D – Representative Site Photographs

Figures

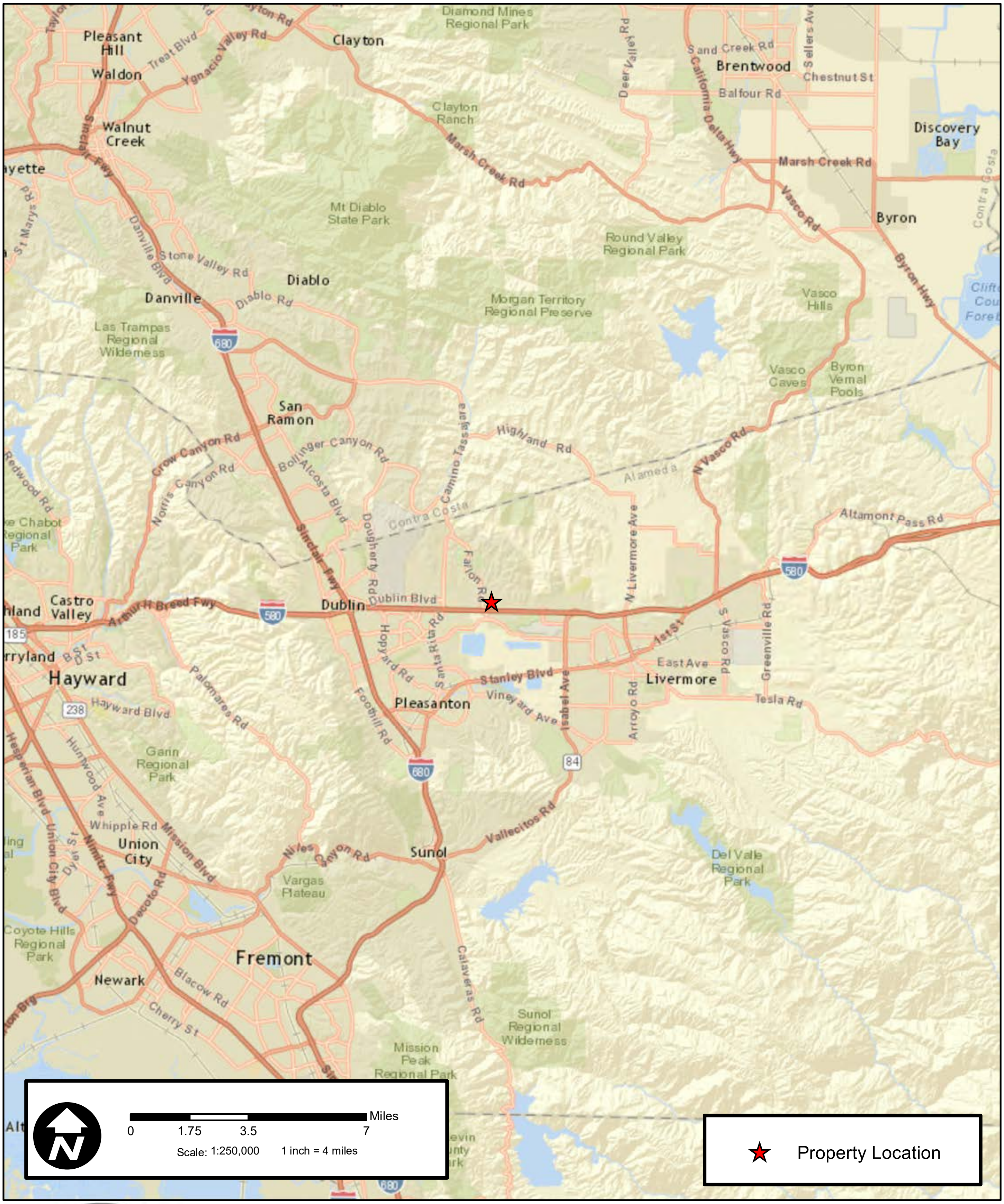
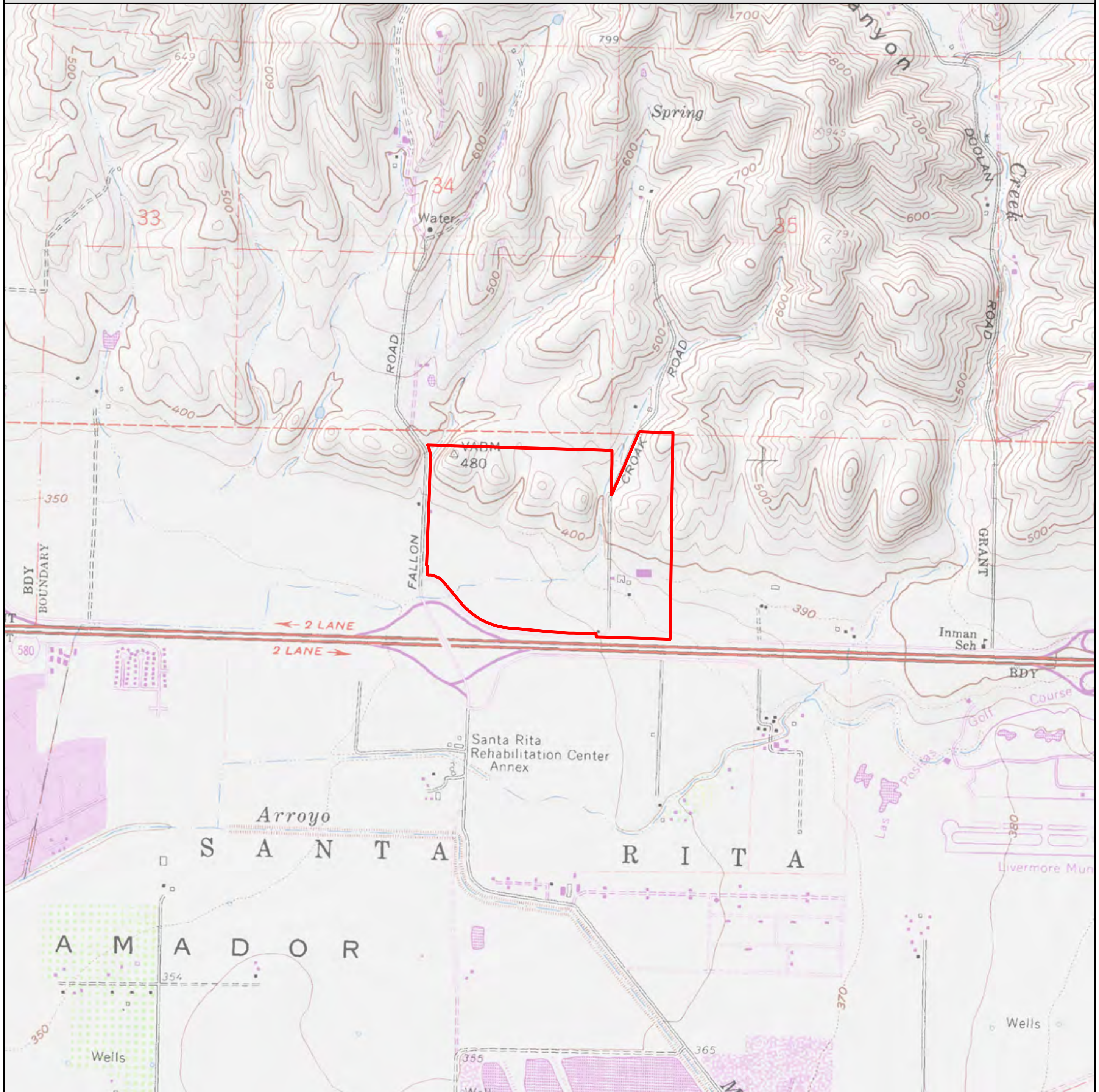


Figure 1: Regional Map
Anderson and Chen
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.
193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA



Property Boundary (187.5 acres)

USGS 24k Topo Map Boundaries

The Project Site is located within the Livermore, CA USGS 7.5-minute quadrangle map.

The site occurs within the southwest 1/4 of Section 35 of Township 2 South and Range 1 East, as well as unsectioned portions of Township 2 South and Township 3 South, Range 1 East, Mt. Diablo Base & Meridian.

Center Coordinates (NAD83) for Study Area:
Latitude 37.705232, Longitude -121.844179

0 1,000 2,000 Feet

N

Data Source:
USGS The National Map 2021;
ESRI USA Boundaries;
Public Land Survey System

Prepared by:

HELM BIOLOGICAL CONSULTING
4600 Karchner Rd, Sheridan, CA 95681

Date: 10/21/2022

Figure 2. Project Location

Features	Property	Acres	Linear Feet (LNFT)
Seasonal Wetlands			
Ch-SW1	Chen	6.26	N/A
Ch-SW2	Chen	0.02	N/A
Ch-SW3	Chen	0.009	N/A
Ch-SW4	Chen	0.2	N/A
Ch-SW5	Chen	0.66	N/A
Ch-SW6	Chen	0.06	N/A
An-SW1	Anderson	0.03	N/A
An-SW2	Anderson	0.024	N/A
An-SW3	Anderson	0.005	N/A
An-SW4	Anderson	0.05	N/A
An-SW5	Anderson	0.004	N/A
An-SW6	Anderson	0.02	N/A
An-SW7	Anderson	0.02	N/A
An-SW8	Anderson	0.735	N/A
An-SW9	Anderson	0.001	N/A
An-SW10	Anderson	0.001	N/A
An-SW11	Anderson	0.002	N/A
Sub-Total		8.101	N/A
Emergent Wetlands			
Ch-EW1	Chen	2.99	N/A
Sub-Total		2.99	N/A
Wetland Swales			
Ch-WS1	Chen	0.29	1556
An-WS1	Anderson	0.004	195
An-WS2	Anderson	0.052	250
An-WS3	Anderson	0.085	435
Sub-Total		0.431	2436
Other Waters			
Ch-OW1	Chen	0.009	202
Ch-OW2	Chen	0.03	264
Ch-OW3	Chen	0.007	185
Ch-OW4	Chen	0.055	600
Sub-Total		0.101	1251
Pools/Ponds			
Ch-P1	Chen	0.08	N/A
An-P1	Anderson	1.597	N/A
Sub-Total		1.677	N/A
Total Wetlands		11.522	N/A
Total Other Waters		1.778	3687

OLBERDING
-ENVIRONMENTAL-
193 Blue Ravine Rd. Ste. 160
Folsom, California 95630
Phone: (916) 985-1188

Figure 3:
Listed Branchiopods Survey Area Map
Grand View Development Project
Alameda County, California

Map Revision Date: 11/11/2021

Attachments

Attachment A

Dry Season Sampling Approval

Dustin Brown

From: Kong, Lauren M <lauren_kong@fws.gov> on behalf of SFWO Permits, FW8 <FW8_SFWO_Permits@fws.gov>
Sent: Tuesday, May 24, 2022 2:51 PM
To: Dustin Brown
Cc: Nguyen, My Q; Olah, Ryan
Subject: Survey Notification Approval, dry season surveys, VpB, Chen-Anderson properties, TE-85084C

Dustin Brown,
By this email message, you are authorized to conduct dry season sampling (and processing) for vernal pool branchiopods, as specified in your May 20, 2022 email request, per the conditions of your recovery permit (TE-85084C). Surveys will be conducted at the Chen-Anderson properties in Alameda County, CA.

Surveys may be conducted within all wetlands identified on-site that might provide suitable habitat. Suitable habitat not previously identified on the project site may also be sampled under this authorization. Please remember to carry a copy of your permit while doing the work and to follow the terms and conditions therein. This authorization does not include access to the property which must be arranged with the landowner or manager.

In your report(s), please include which activities were authorized, the names of all persons involved in each activity, their recovery permit numbers, if applicable, and the date of this authorization, to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization. Please let us know if the activities are not performed as authorized, or if they are done by a different permittee under a separate authorization. Reports should include a U.S. Geological Survey topographic map (1:24,000 scale) depicting the location of the project site, survey area, and location(s) of species in as precise a manner as possible. We may also request spatial data and metadata. **Please send electronic copies of the report(s) to FW8_SFWO_Permits@fws.gov and the Coast Bay Division Supervisor, Ryan Olah (ryan_olah@fws.gov).**

Thank you,
Lauren

--
10(a)(1)(A) Recovery Permit Team
Sacramento Fish and Wildlife Office
U.S. Fish and Wildlife Service

The SFWO is transitioning to a consolidated mailbox (this one!) for all communications regarding 10(a)(1)(A) recovery permits in our jurisdiction. Please send survey notifications, reports, and permit inquiries (aka anything and everything permit-related) to this email address: FW8_SFWO_Permits@fws.gov.

Attachment B

Dry-Season Lab Data Sheet

Dry Season Lab Data Sheet

Project Information		Biologist Information	
Project Name: Anderson & Chen	Quad: Livermore	Name of Person(s) Who Conducted the Following Tasks and Permit Number(s):	
USFWS Project Number:	Township:	Soil Collection Conducted By: Dustin Brown	
County:	Range:	Soil Processing Conducted By: Matt Shaffer and Dustin Brown	
Lat:	Section:	Soil Analysis/Cysts ID Conducted By: Dustin Brown	
Long:		Soil Collection Date: 6/1/2022	Soil Processing Date: 6/15/22, 6/16/2022, 6/17/2022

	Feature Number	Invertbrates Present (X) Insect Exo-Skeletons	Micro- Turbellaria Cysts	*Cladocera ephippia*	Ostracods Live/Cysts/ Carapaces	Copepods Live/Cysts	Number of Large Branchiopod Eggs *Branchinecta* sp.	*Lepidurus packardi*	*Linderiella occidentalis*	*Lynceus brachyurus*	*Cyzicus californicus*	Hydracarina Live	Nematoda	Collembola	Other Species	Comments / Volume of soil
	An P1	X	X	X	X							X		X		4L
	Ch SW1	X	X	X	X								X	X		2L
6/15	Ch SW3	X	X	X	X		48									1L
MS	Ch SW2	X	X		X		22									1L
	An SW8	X	X	X	X							X		X		2L
6/16	An. SW3	X	X											X		1L
DB	An. SW4	X	X											X		1L
	Ch. SW4	X	X	X	X									X		2L
	An. SW2	X	X											X		1L
	Ch. SW-5	X	X		X									X		2L
6/17	An. SW1	X	X		X									X		1L
DB	An. SW-10	X	X											X		1L
	An. SW-11	X	X	X	X									X		1L
	An. SW-7	X	X	X	X									X		1L
	An. SW-9	X	X											X		1L
	An. SW-6	X	X											X		1L

Attachment C

Cyst Culturing Memo from Helm Biological

CYST CULTURING FOR THE DETECTION OF FEDERALLY-LISTED LARGE BRANCHIOPODS AT THE GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA

***Prepared for*:**

OLBERDING ENVIRONMENTAL, INC.
193 Blue Ravine Road, Suite 165
Folsom, CA, 95630
***Contact:* Jeff Olberding**
(916) 985-1188

***Prepared by*:**

HELM BIOLOGICAL CONSULTING
4600 Karchner Road
Sheridan, CA 95681
***Contact*: Dr. Brent Helm**
(530) 633-0220

October 2022

HELM BIOLOGICAL CONSULTING
A Tansley Team Division
4600 Karchner Rd, Sheridan, CA 95681

CYST CULTURING FOR THE DETECTION OF FEDERALLY-LISTED LARGE BRANCHIOPODS AT THE GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA

INTRODUCTION

Helm Biological Consulting (HBC), a division of Tansley Team, Inc., was contracted by Olberding Environmental, Inc., to culture cysts (hatch cysts and rear hatchlings to maturity for positive identification of species) belonging to the genus *Branchinecta* obtained from the soils collected from two dry seasonally-inundated depressions (seasonal wetlands SW2 and SW3) at the Grand View Development Project (hereafter "Project") for the presence of the threatened vernal pool fairy shrimp [*Branchinecta lynchi*]).

The Project is located in the northeast corner of the intersection of Interstate 580 (I-580) and Fallon Road, on the eastern outskirts of the City of Dublin, Alameda County, California (Figure 1). Additionally, the Project is located in the southwest 1/4 of Section 35 of Township 2 South and Range 1 East, as well as unsectioned portions of Township 2 South and Township 3 South, Range 1 East, Mt. Diablo Base & Meridian. (Figure 2). The Project's approximate center coordinates (North American Datum of 1983 [NAD83]) are: 37.705232°, -121.844179°.

Background

Dustin Brown from Madrone Ecological Consulting conducted wet-season and dry-season sampling at the Project. Cyst belonging to the genus *Branchinecta* were observed in soils collected from two seasonal wetlands (SW2 and SW3) onsite (Figure 3). Soils containing 22 *Branchinecta* cysts from SW2 and 48 *Branchinecta* cysts from SW3 were delivered to HBC on June 27, 2022 by Mr. Brown.

The remainder of this report discusses the methods and results of cyst culturing to determine the species of *Branchinecta* sp. occurring within soils collected from SW2 and SW3 at the Project.

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."

Brent P. Helm Signature ______________________ Date 10-19-2022
(TE-795930-10.2)

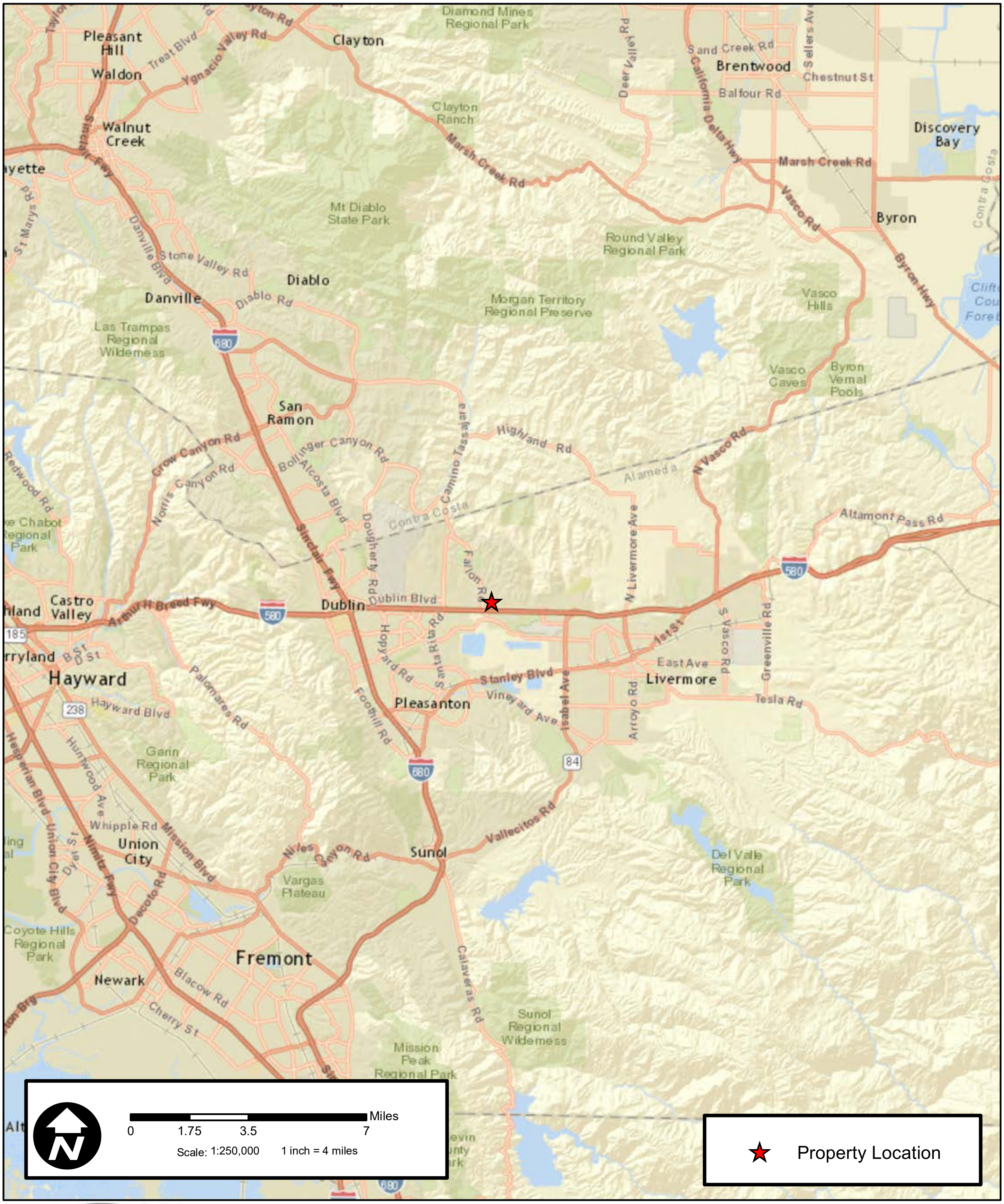


Figure 1: Regional Map
Chen Property
Alameda County, CA

193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
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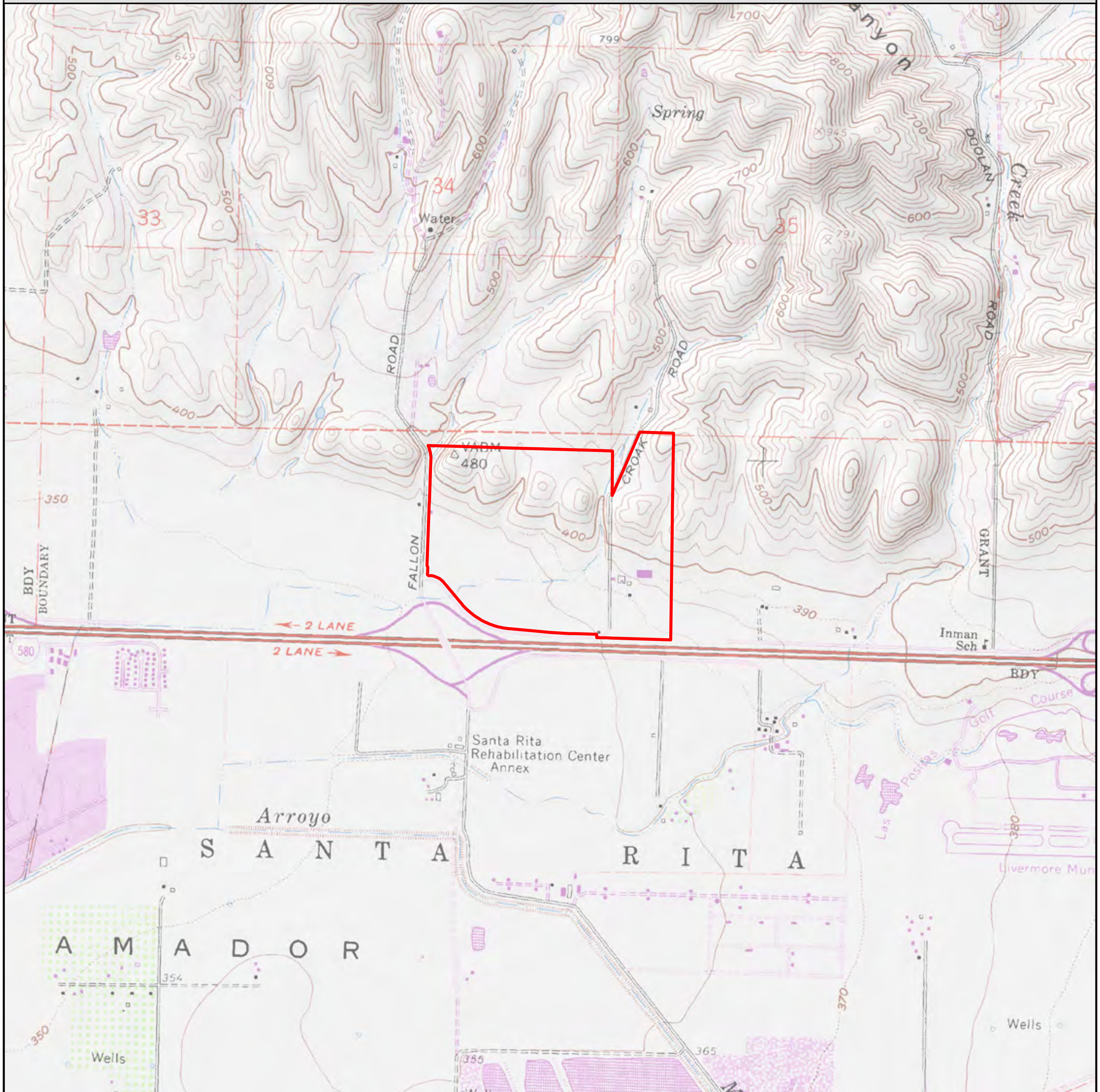
GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA



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0 1,000 2,000 Feet

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Data Source:
USGS The National Map 2021;
ESRI USA Boundaries;
Public Land Survey System

Prepared by:
HELM BIOLOGICAL CONSULTING

Date: 10/21/2022

Figure 2. Project Location

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193 Blue Ravine Rd. Ste. 160
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Phone: (916) 985-1188

Figure 1:
Listed Branchiopods Survey Area Map
Grand View Development Project
Alameda County, California

Map Revision Date: 11/11/2021

METHODS

Methods followed U.S. Fish and Wildlife Service's (USFWS 2017) *Survey Guidelines for Listed Large Branchiopods* for dry-season sampling and consisted of first soil collection, second soil processing and analysis, and last cyst culturing as described below.

SOIL COLLECTION, PROCESSING, AND ANALYSIS

Dry soils were collected on June 1, 2022 by Dustin Brown of Madrone Ecological Consulting as authorized by USFWS (Appendix A) under permit number TE-85084C-0 of Section 10(a)(1)(A) of the federal Endangered Species Act (ESA), 16 U.S.C. 1531 et seq., and its implementing regulations. The soils were processes and analyzed and determined that cysts belonging to the genus *Branchinecta* occurred in two of the seasonal inundated wetlands (SW2 and SW3) sampled using dry-season techniques.

Because there are several species within the genus *Branchinecta* that could occur or are known to occur within the vicinity of the Project, *Branchinecta* cysts observed within the soils, were delivered to HBC for culturing to determine species as described below.

CYST CULTURING

Petri dishes containing soils with *Branchinecta* cysts were placed into individual 6-quart sized plastic containers. The soils were saturated with 50º F well water (non-chlorinated) and allowed to dry. This saturation and drying process was repeated three times. The soils were then inundated completely with 50º F well water. The containers holding the inundated soils were inserted into an environmental chamber. The environmental chamber controls were set to mimic the winter light, humidity, and temperature fluctuations of the Project's vicinity. The contents of the containers were monitored daily for fairy shrimp hatchlings (instars).

If no hatchlings were observed after ten (10) days, the containers were removed from the environmental chamber and the soils were allowed to completely dry before reinitiating the hatching process described above. To expedite the culturing process, all emerging instars were removed from their original containers and placed into a separate container. The original container was dried and the culturing process was repeated. This technique allows multiple generations of instars to continue to grow to maturity simultaneously. A total of three hatching attempts were performed on each soil sample.

Fairy shrimp hatchlings were feed ground fish food and reared in the environmental chamber until they were mature enough to be identified using dichotomous keys and diagrams from "Fairy Shrimps of California's Puddles, Pools, and Playas" (Eriksen and Belk 1999), two more recent publications concerning the identification of San Diego fairy shrimp (*Branchinecta sandiegonensis*) and versatile fairy shrimp (*B. lindahli*) (Simovich et al 2013; Patel et al. 2018), and compared to Dr. Helm's large branchiopod reference collection.

RESULTS

CYST CULTURING

The common non-special status versatile fairy shrimp (*Branchinecta lindahli*) was hatched from soils containing *Branchinecta* cysts from SW2 and SW3 (Table 1). Additional soils were collected from SW2 by Dustin Brown on August 10, 2022 after the first two culturing attempts failed to hatch the original 22 *Branchinecta* cysts. Over 150 *Branchinecta* cyst were viewed in the processed soil from SW2 from the second collection.

Table 1. Results of Cyst Culturing from Soils collected from the Grand View Project

Basin #	Hatching Round #									Total		
	1			2			3					
	# of BRsp Hatched	# of Identified BRLI		# of BRsp Hatched	# of Identified BRLI		# of BRsp Hatched	# of Identified BRLI		# of BRsp Hatched	# of Identified BRLI	
		Male	Female		Male	Female		Male	Female		Male	Female
SW2	0	0	0	0	0	0	2	0	2	2	0	2
SW3	0	0	0	6	2	2	5	1	1	11	3	3
Total	**0**	**0**	**0**	**6**	**2**	**2**	**7**	**1**	**0**	**13**	**3**	**5**

Note: BRsp = Immature *Branchinecta* sp., BRLI = Versatile fairy shrimp (*Branchinecta lindahli*)

Ph: (530) 633-0220
Fax: (530) 633-0230

LITERATURE CITED

Belk, D. 1989. Identification of species in the Conchostraca genus *Eulimnadia* by egg shell morphology. Journal of Crustacean Biology. 9(1): 115-125.

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Rabet, N. 2010. Revision of the egg morphology of Eulimnadia (Crustacea, Branchiopoda, Spinicaudata). Zoosystema 32 (3): 373-391.

Simovich, M.A., Davis, K.B. and Bohonak, A.J., 2013. Landscape homogenization threatens the genetic integrity of the endangered San Diego fairy shrimp Branchinecta sandiegonensis (Branchiopoda: Anostraca). Journal of Crustacean Biology, 33(5), pp.730-740.

U.S. Department of the Interior, U.S. Fish and Wildlife Service (USFWS). 2017. Survey guidelines for the listed large branchiopods. 24 pp. Dated: 31 May 2015 (Revised November 13, 2017).

APPENDIX A.
USFWS AUTHORIZATION

Dustin Brown

From:	Kong, Lauren M <lauren_kong@fws.gov> on behalf of SFWO Permits, FW8 <FW8_SFWO_Permits@fws.gov>
Sent:	Tuesday, May 24, 2022 2:51 PM
To:	Dustin Brown
Cc:	Nguyen, My Q; Olah, Ryan
Subject:	Survey Notification Approval, dry season surveys, VpB, Chen-Anderson properties, TE-85084C

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Thank you,
Lauren

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Attachment D

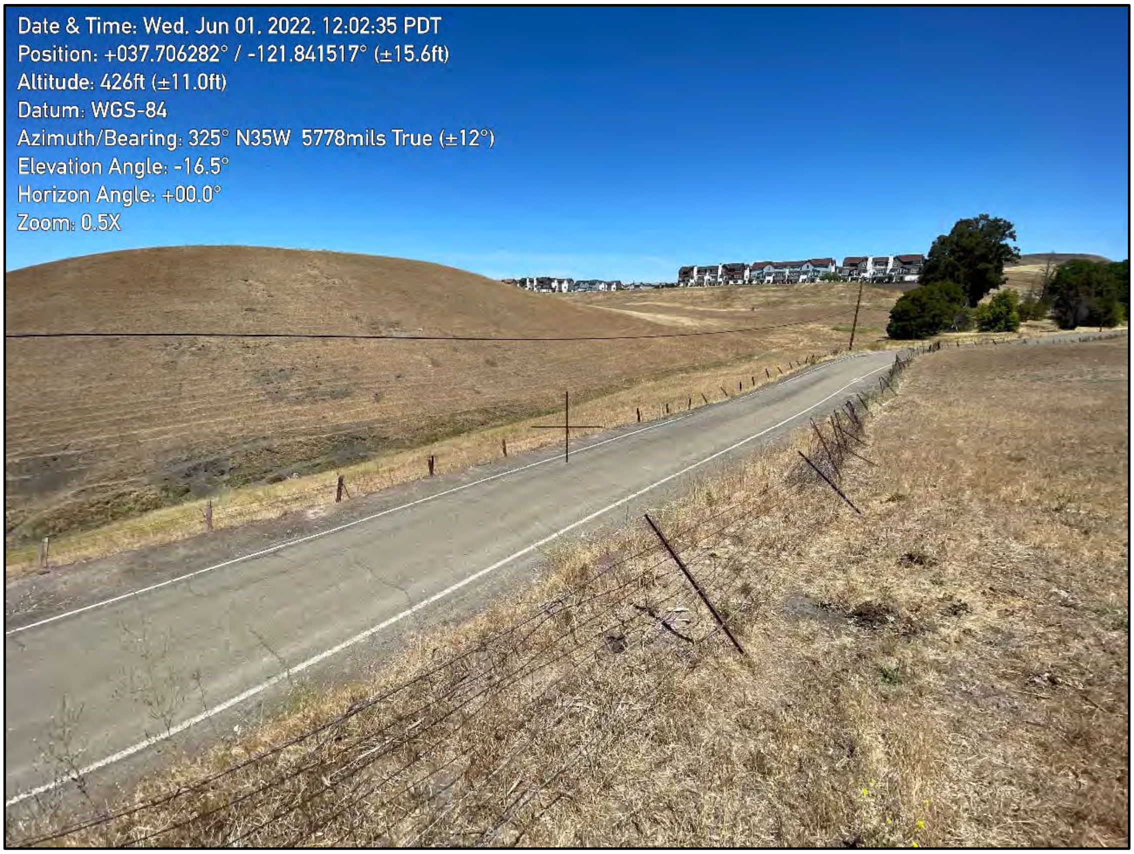
Representative Site Photos

Photograph of Ch-SW3 facing west. *Branchinecta lindahli* eggs identified within this feature

Photograph of Ch-SW1 facing southeast from the northern end of the feature.

Photograph of Ch-SW4 facing west

Facing northwest at Ch-P1 and Ch-EW1. Features are not suitable habitat and were not sampled.



Facing northwest at Ch-SW6 and Ch-WS1. Features are not suitable habitat and were not sampled.

Photograph of An-P1 facing south

Photograph of An-SW5 facing south. This feature does not contain suitable habitat for vernal pool branchiopods and was not sampled.

Photograph of An-SW7 facing east

Photograph facing northeast from Ch-SW-3

Photograph facing west from just south of An-SW-6

Attachment 5

Cyst Culturing Report

CYST CULTURING FOR THE DETECTION OF FEDERALLY-LISTED LARGE BRANCHIOPODS AT THE GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA

***Prepared for*:**

OLBERDING ENVIRONMENTAL, INC.
193 Blue Ravine Road, Suite 165
Folsom, CA, 95630
***Contact:* Jeff Olberding**
(916) 985-1188

***Prepared by*:**

HELM BIOLOGICAL CONSULTING
4600 Karchner Rd, Sheridan, CA 95861

HELM BIOLOGICAL CONSULTING
4600 Karchner Road
Sheridan, CA 95681
***Contact*: Dr. Brent Helm**
(530) 633-0220

October 2022

HELM
BIOLOGICAL CONSULTING
A Tansley Team Division
4600 Karchner Rd, Sheridan, CA 95681

CYST CULTURING FOR THE DETECTION OF FEDERALLY-LISTED LARGE BRANCHIOPODS AT THE GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA

INTRODUCTION

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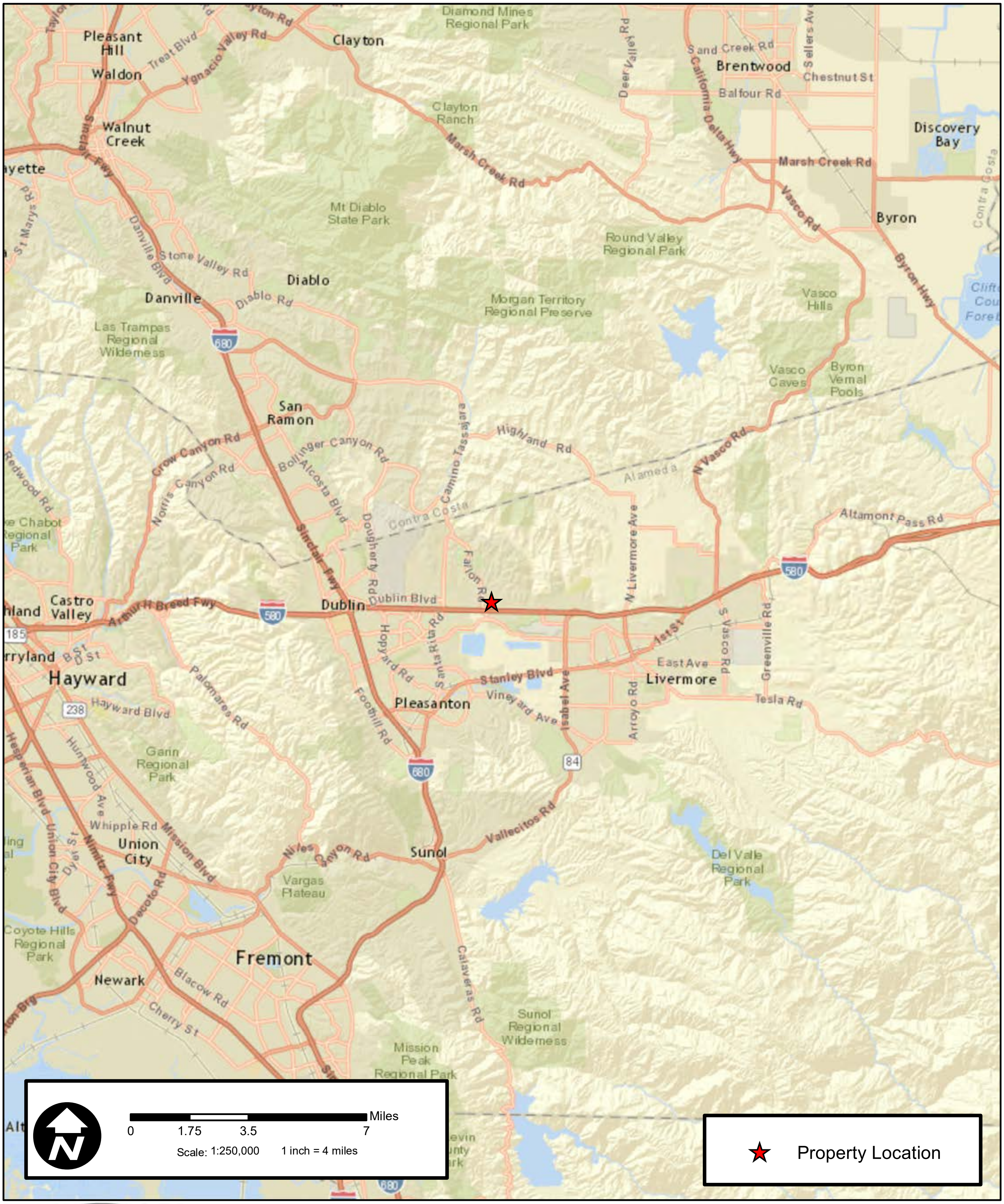
(TE-795930-10.2)



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Alameda County, CA

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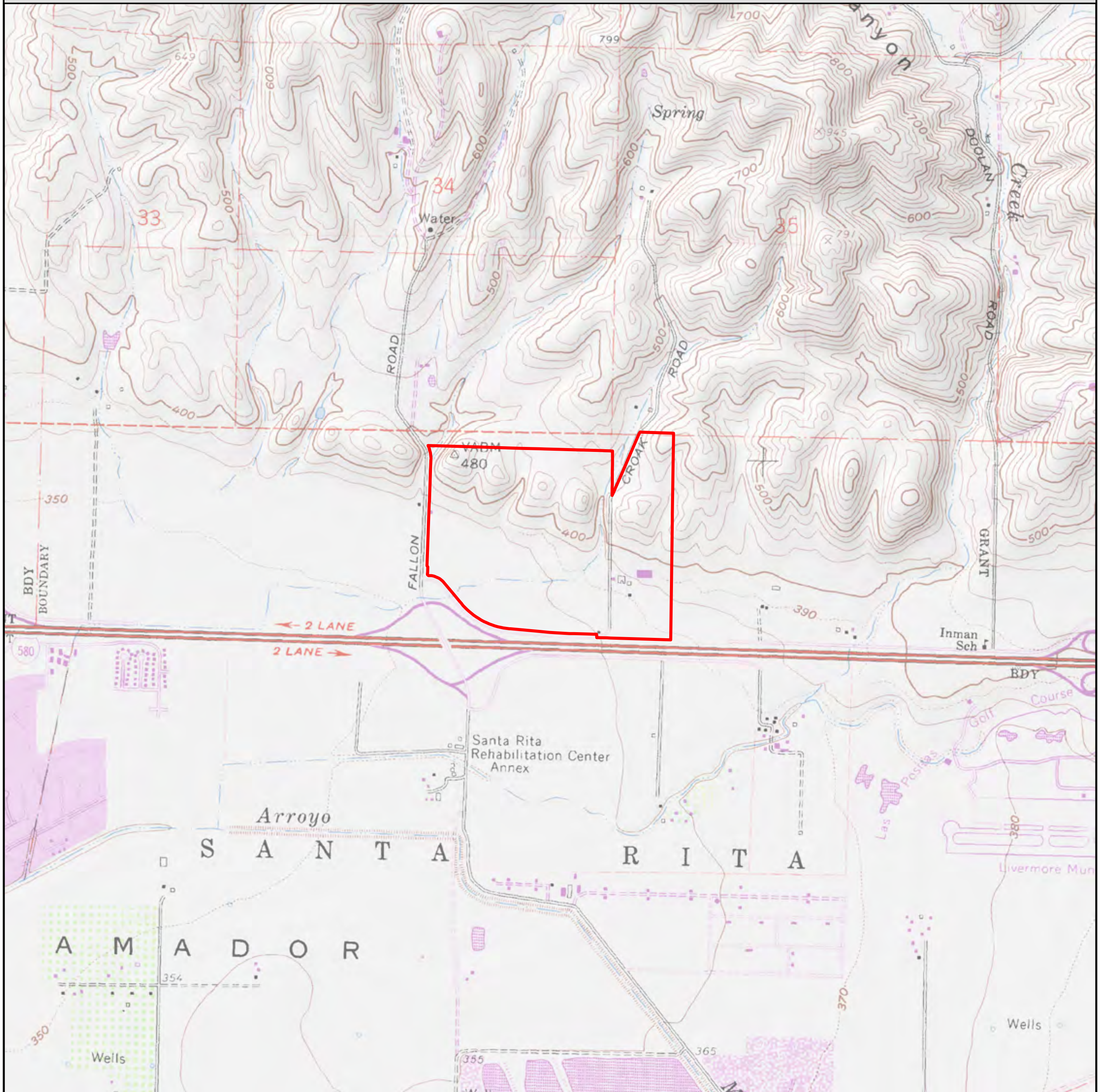
Folsom, CA 95630
Phone: (916) 985-1188

GRAND VIEW DEVELOPMENT PROJECT, ALAMEDA COUNTY, CALIFORNIA



Property Boundary (187.5 acres)

USGS 24k Topo Map Boundaries

The Project Site is located within the Livermore, CA USGS 7.5-minute quadrangle map.

The site occurs within the southwest 1/4 of Section 35 of Township 2 South and Range 1 East, as well as unsectioned portions of Township 2 South and Township 3 South, Range 1 East, Mt. Diablo Base & Meridian.

Center Coordinates (NAD83) for Study Area:
Latitude 37.705232, Longitude -121.844179

0 1,000 2,000
Feet

N

Data Source:
USGS The National Map 2021;
ESRI USA Boundaries;
Public Land Survey System

Prepared by:

HELM
BIOLOGICAL CONSULTING
4600 Karchner Rd, Sheridan, CA 95681

Date: 10/21/2022

Figure 2. Project Location

Features	Property	Acres	Linear Feet (LNFT)
Seasonal Wetlands			
Ch-SW1	Chen	6.26	N/A
Ch-SW2	Chen	0.02	N/A
Ch-SW3	Chen	0.009	N/A
Ch-SW4	Chen	0.2	N/A
Ch-SW5	Chen	0.66	N/A
Ch-SW6	Chen	0.06	N/A
An-SW1	Anderson	0.03	N/A
An-SW2	Anderson	0.024	N/A
An-SW3	Anderson	0.005	N/A
An-SW4	Anderson	0.05	N/A
An-SW5	Anderson	0.004	N/A
An-SW6	Anderson	0.02	N/A
An-SW7	Anderson	0.02	N/A
An-SW8	Anderson	0.735	N/A
An-SW9	Anderson	0.001	N/A
An-SW10	Anderson	0.001	N/A
An-SW11	Anderson	0.002	N/A
Sub-Total		8.101	N/A
Emergent Wetlands			
Ch-EW1	Chen	2.99	N/A
Sub-Total		2.99	N/A
Wetland Swales			
Ch-WS1	Chen	0.29	1556
An-WS1	Anderson	0.004	195
An-WS2	Anderson	0.052	250
An-WS3	Anderson	0.085	435
Sub-Total		0.431	2436
Other Waters			
Ch-OW1	Chen	0.009	202
Ch-OW2	Chen	0.03	264
Ch-OW3	Chen	0.007	185
Ch-OW4	Chen	0.055	600
Sub-Total		0.101	1251
Pools/Ponds			
Ch-P1	Chen	0.08	N/A
An-P1	Anderson	1.597	N/A
Sub-Total		1.677	N/A
Total Wetlands		11.522	N/A
Total Other Waters		1.778	3687

OLBERDING ENVIRONMENTAL

193 Blue Ravine Rd. Ste. 160
Folsom, California 95630
Phone: (916) 985-1188

Figure 1:
Listed Branchiopods Survey Area Map
Grand View Development Project
Alameda County, California

Map Revision Date: 11/11/2021

METHODS

Methods followed U.S. Fish and Wildlife Service's (USFWS 2017) *Survey Guidelines for Listed Large Branchiopods* for dry-season sampling and consisted of first soil collection, second soil processing and analysis, and last cyst culturing as described below.

SOIL COLLECTION, PROCESSING, AND ANALYSIS

Dry soils were collected on June 1, 2022 by Dustin Brown of Madrone Ecological Consulting as authorized by USFWS (Appendix A) under permit number TE-85084C-0 of Section 10(a)(1)(A) of the federal Endangered Species Act (ESA), 16 U.S.C. 1531 et seq., and its implementing regulations. The soils were processes and analyzed and determined that cysts belonging to the genus *Branchinecta* occurred in two of the seasonal inundated wetlands (SW2 and SW3) sampled using dry-season techniques.

Because there are several species within the genus *Branchinecta* that could occur or are known to occur within the vicinity of the Project, *Branchinecta* cysts observed within the soils, were delivered to HBC for culturing to determine species as described below.

CYST CULTURING

Petri dishes containing soils with *Branchinecta* cysts were placed into individual 6-quart sized plastic containers. The soils were saturated with 50º F well water (non-chlorinated) and allowed to dry. This saturation and drying process was repeated three times. The soils were then inundated completely with 50º F well water. The containers holding the inundated soils were inserted into an environmental chamber. The environmental chamber controls were set to mimic the winter light, humidity, and temperature fluctuations of the Project's vicinity. The contents of the containers were monitored daily for fairy shrimp hatchlings (instars).

If no hatchlings were observed after ten (10) days, the containers were removed from the environmental chamber and the soils were allowed to completely dry before reinitiating the hatching process described above. To expedite the culturing process, all emerging instars were removed from their original containers and placed into a separate container. The original container was dried and the culturing process was repeated. This technique allows multiple generations of instars to continue to grow to maturity simultaneously. A total of three hatching attempts were performed on each soil sample.

Fairy shrimp hatchlings were feed ground fish food and reared in the environmental chamber until they were mature enough to be identified using dichotomous keys and diagrams from "Fairy Shrimps of California's Puddles, Pools, and Playas" (Eriksen and Belk 1999), two more recent publications concerning the identification of San Diego fairy shrimp (*Branchinecta sandiegonensis*) and versatile fairy shrimp (*B. lindahli*) (Simovich et al 2013; Patel et al. 2018), and compared to Dr. Helm's large branchiopod reference collection.

RESULTS

CYST CULTURING

The common non-special status versatile fairy shrimp (*Branchinecta lindahli*) was hatched from soils containing *Branchinecta* cysts from SW2 and SW3 (Table 1). Additional soils were collected from SW2 by Dustin Brown on August 10, 2022 after the first two culturing attempts failed to hatch the original 22 *Branchinecta* cysts. Over 150 *Branchinecta* cyst were viewed in the processed soil from SW2 from the second collection.

Table 1. Results of Cyst Culturing from Soils collected from the Grand View Project

	Hatching Round #									Total		
	1			2			3					
	# of BRsp Hatched	# of Identified BRLI		# of BRsp Hatched	# of Identified BRLI		# of BRsp Hatched	# of Identified BRLI		# of BRsp Hatched	# of Identified BRLI	
Basin #		**Male**	**Female**		**Male**	**Female**		**Male**	**Female**		**Male**	**Female**
SW2	0	0	0	0	0	0	2	0	2	2	0	2
SW3	0	0	0	6	2	2	5	1	1	11	3	3
Total	**0**	**0**	**0**	**6**	**2**	**2**	**7**	**1**	**0**	**13**	**3**	**5**

Note: BRsp = Immature *Branchinecta* sp., BRLI = Versatile fairy shrimp (*Branchinecta lindahli*)

Ph: (530) 633-0220
Fax: (530) 633-0230

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APPENDIX A.
USFWS AUTHORIZATION

Ph: (530) 633-0220
Fax: (530) 633-0230

Dustin Brown

From:	Kong, Lauren M <lauren_kong@fws.gov> on behalf of SFWO Permits, FW8 <FW8_SFWO_Permits@fws.gov>
Sent:	Tuesday, May 24, 2022 2:51 PM
To:	Dustin Brown
Cc:	Nguyen, My Q; Olah, Ryan
Subject:	Survey Notification Approval, dry season surveys, VpB, Chen-Anderson properties, TE-85084C

Dustin Brown,
By this email message, you are authorized to conduct dry season sampling (and processing) for vernal pool branchiopods, as specified in your May 20, 2022 email request, per the conditions of your recovery permit (TE-85084C). Surveys will be conducted at the Chen-Anderson properties in Alameda County, CA.

Surveys may be conducted within all wetlands identified on-site that might provide suitable habitat. Suitable habitat not previously identified on the project site may also be sampled under this authorization. Please remember to carry a copy of your permit while doing the work and to follow the terms and conditions therein. This authorization does not include access to the property which must be arranged with the landowner or manager.

In your report(s), please include which activities were authorized, the names of all persons involved in each activity, their recovery permit numbers, if applicable, and the date of this authorization, to help ensure that we correctly record the fulfillment of the reporting requirement under this authorization. Please let us know if the activities are not performed as authorized, or if they are done by a different permittee under a separate authorization. Reports should include a U.S. Geological Survey topographic map (1:24,000 scale) depicting the location of the project site, survey area, and location(s) of species in as precise a manner as possible. We may also request spatial data and metadata. **Please send electronic copies of the report(s) to FW8_SFWO_Permits@fws.gov and the Coast Bay Division Supervisor, Ryan Olah (ryan_olah@fws.gov).**

Thank you,
Lauren

--
10(a)(1)(A) Recovery Permit Team
Sacramento Fish and Wildlife Office
U.S. Fish and Wildlife Service

Attachment 6

2018 Non-protocol Level Wet Season Report

LISTED LARGE BRANCHIOPOD
WET SEASON SURVEY
PRELIMINARY RESULTS REPORT

FOR THE

CHEN-ANDERSON PROPERTIES

CITY OF DUBLIN, ALAMEDA COUNTY, CALIFORNIA

Prepared for:

GH PACVEST, LLC.
3000 Executive Parkway, Suite 375
San Ramon, CA 94583

Prepared by:

OLBERDING ENVIRONMENTAL, INC.
Wetland Regulatory Consultants
Contact: Jeff Olberding
193 Blue Ravine, Suite 165
Folsom, California 95630

Phone: (925) 866-2111 Fax:

JUNE 2018

TABLE OF CONTENTS

ATTACHMENTS

1.0 USFWS REFERENCE NUMBER 2018-TA-1783

2.0 OBJECTIVE

This report summarizes the results of non-protocol level wet season surveys for listed large branchiopods conducted within aquatic features on the Cypress Preserve during the 2017-18 wet season. Survey target species included federally endangered longhorn fairy shrimp (*Branchinecta longiantenna*), vernal pool tadpole shrimp (*Lepidurus packardi*), and federally threatened vernal pool fairy shrimp (*Branchinecta lynchii*).

Field surveys were conducted under the authorization of U.S. Fish and Wildlife Service (USFWS) pursuant to Endangered/Threatened Species Take Permit No. TE-59890B-0.

3.0 LOCATION

The Properties consist of approximately 135 acres and 50 acres respectively located just east of the intersection of Fallon Road and Croak Road, north of I-580, in Dublin, California. Attachment 1, Figure 1 depicts the regional location of the Properties in the San Francisco Bay Area. Attachment 1, Figure 2 illustrates the vicinity of the Properties in relationship to the City of Dublin. Attachment 1, Figure 3 identifies the locations of the Properties on a USGS Quadrangle base map. Attachment 1, Figure 4 shows an aerial of the Properties.

Access to the Properties is provided from Interstate 580. From 580, take the El Charro/Fallon Road exit and make a left onto Fallon Road. Travel north for 0.5 miles then make a right onto Croak Road, the Chen Property will be found on the right. Continue on Croak Road for 0.2 miles, the Anderson Property will be on the right.

4.0 METHODS AND MATERIALS

Upon receipt of USFWS approval to survey the site on April 9, 2018; three surveys were conducted approximately one month apart during April, May, and June of 2018. Field surveys were conducted in accordance with the terms and conditions of our permit dated August 15, 2015 and as outlined in the May 31, 2015 *Survey Guidelines for Large Listed Branchiopods* (USFWS 2015).

The surveyed features were sampled with a 5-foot long dip net with a 12 inch D-ring and 650 micron mesh. Sampling technique involved making a series of pulls by extending the net out and pulling it back in a sweeping motion. The net was examined for the presence of branchiopods and then cleaned of debris between pulls. The average effort ranged between five (5) to fifteen (15) pulls per survey feature depending on the size of the feature. In addition, the survey features will be visually scanned for the presence or branchiopods prior to each net pull. Air temperature, water temperature, and approximate maximum depth of ponding was measured and recorded during each sampling session for each sampled feature. Abundance categories were assigned in an attempt to quantify species concentration within a given feature; as follows:

- Low (L) indicates less than one (1) individual per net pull,
- Medium (M) indicates one (1) to four (4) individuals per net pull, and
- High (H) indicates five (5) or greater individuals per net pull.

Any surface feature that was inundated with 3 centimeters or more of water at the time of the individual survey was subject to sampling.

Due to the high likelihood of encountering a California tiger salamander and/or California red-legged frog, which are both federally listed species; Olberding Environmental Biologist Lisa Henderson was included within the field survey events as she holds a USFWS 10(a)1(a) permit to cover those species.

5.0 GENERAL SITE CONDITIONS AND HABITAT

A majority of both Properties support California non-native annual grassland habitat. Plant species diversity is low, primarily due to grazing pressure. Dominant plant species include a mixture of annual grasses as well as forbs that are common to locally abundant at various times of the year.

On the Anderson Property, an abandoned quarry pit in the north portion of the site supports a large isolated seasonal wetland and freshwater marsh bordered by a small band of riparian woodland. Two small, isolated seasonal wetlands are found in the southwestern portion of the Property.

On the Chen Property, a small section of riparian woodland habitat occurs in the northwestern corner of the Property. Four ephemeral drainages occur within the valleys among the steep grass covered hillsides and an additional drainage flows through the riparian habitat. Three wetland features were observed on the Property, with the largest wetland located along the western portion of the Property. Water exits a culvert just outside the boundary of the Property and discharges onto the Property creating a large wetland across the southwestern portion of the Property. Two other wetland areas exist, one in the southeastern corner of the Property and the other in the northeastern corner at the top of one of the drainage features. A line of ornamental trees was observed along the western and southwestern corner just outside of the Property.

The Properties are slated for commercial and residential development over a portion of both. The Anderson Property development will consist of 41.4 acres of medium to high-density residential apartment units and commercial development to include retail and office uses. It will also include an 8.3-acre internal open space area that will not be altered during construction. The Chen Property will consist of 72.1 acres of commercial development. The remaining 78 acres of the Chen Property will be preserved as open space.

6.0 SURVEYED FEATURES

A total of 8 features were surveyed during the initial survey event conducted on April 11, 2018; six on the Anderson Property and two on the Chen Property. All six features sampled on the Anderson Property were associated with the abandoned quarry pit, labeled as pond #1 (P1) and seasonal wetland #8 (SW8) during the wetland delineation surveys. Two features were sampled on the Chen Property, both being small depressional wetland features within a larger wetland complex, labeled as seasonal wetland #1 (SW1) during the wetland delineation surveys.

A total of four features were surveyed during the second of the three survey events which was conducted on May 10, 2018; two on the Anderson Property and two on the Chen Property. The two features sampled on the Anderson Property were associated with the abandoned quarry pit, labeled as pond #1 (P1) and seasonal wetland #8 (SW8) during the wetland delineation surveys. Two features were sampled on the Chen Property, both were small depressional features within the larger wetland complex, labeled as seasonal wetland #1 (SW1) during the wetland delineation surveys.

A total of one feature was surveyed during the third and final survey event which was conducted on June 11, 2018; none on the Anderson Property and one feature on the Chen Property. The single feature sampled on the Chen Property was a depressional features within the larger seasonal wetland #1 (SW1) complex.

One single feature was sampled during the third

7.0 RESULTS AND DISCUSSION

Receipt of USFWS approval to conduct wet season surveys on April 9, 2018 resulted in initiation of surveys. Surveys were conducted on April 11, May 10, and June 11, 2018.

One male and two female individuals of the non-listed species *Branchinecta lindahli* (versatile fairy shrimp) were captured within a small depressional feature on the Chen Property within the south end of seasonal wetland #1 on April 11, 2018. The male that was captured was kept and preserved as a voucher specimen. No other features contained listed shrimp. No large-listed branchiopods were encountered during any of the other two survey events on either property.

Commonly encountered aquatic organisms within the features that were sampled included pacific treefrog tadpoles (*Pseudacris regilla*), water boatman (*Corixidae*), diving beetles (*Dytiscidae*), scuds (*Gammarus*), dragonfly larvae (*Anisoptera*), and mosquito larvae

(*Cullicidae*). Water conditions were generally turbid from cattle activity on the Chen Property and the features were mostly devoid of vegetation. The large quarry pond feature on the Anderson Property had clear water and lush vegetative growth, primarily bulrush tules (*Schoenoplectus* sp.) and spikerush (*Eleocharis paulustris*).

8.0 REFERENCES

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Attachment 1

Figures

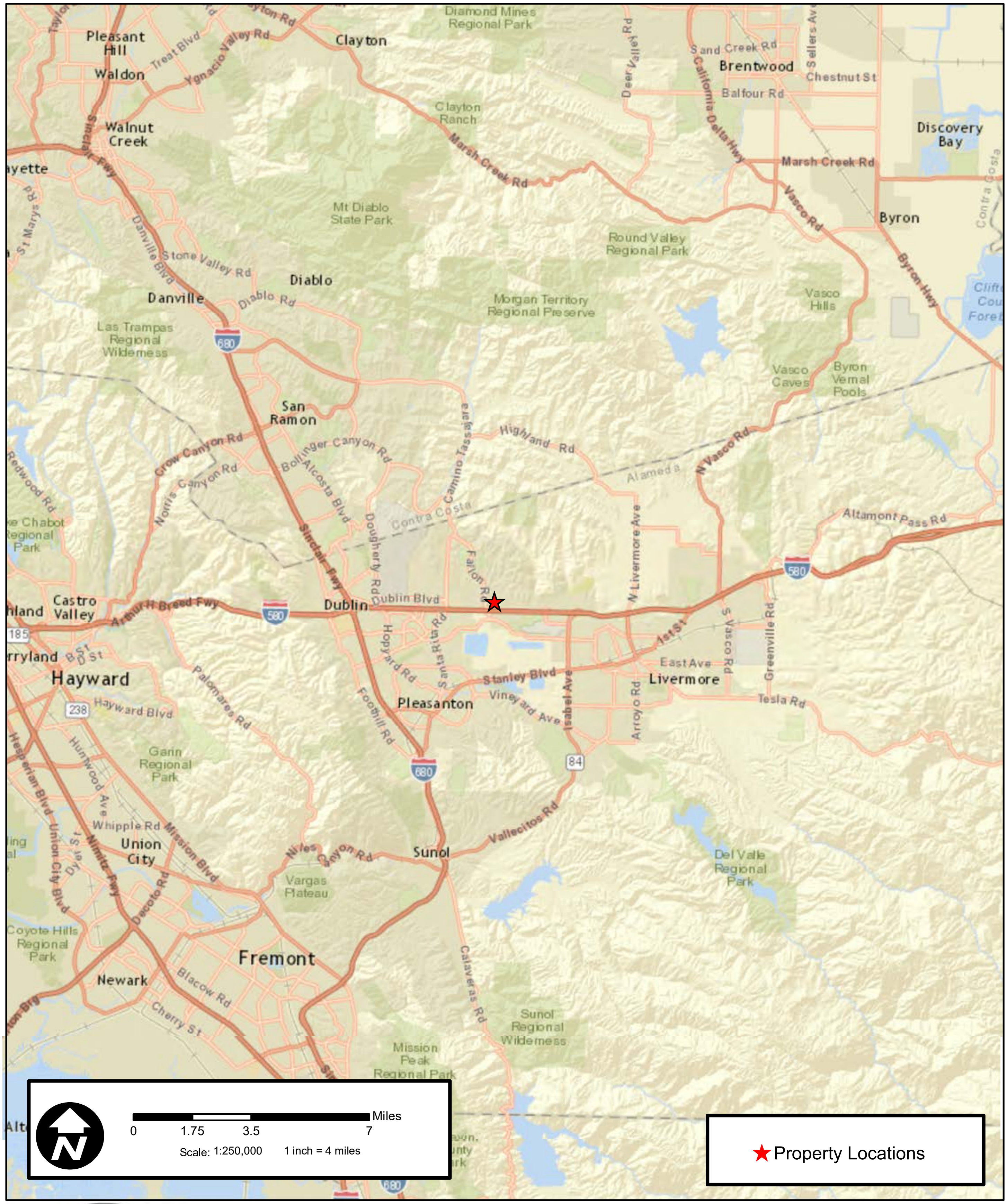

Figure 1: Regional Map
Chen & Anderson Properties
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.
193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

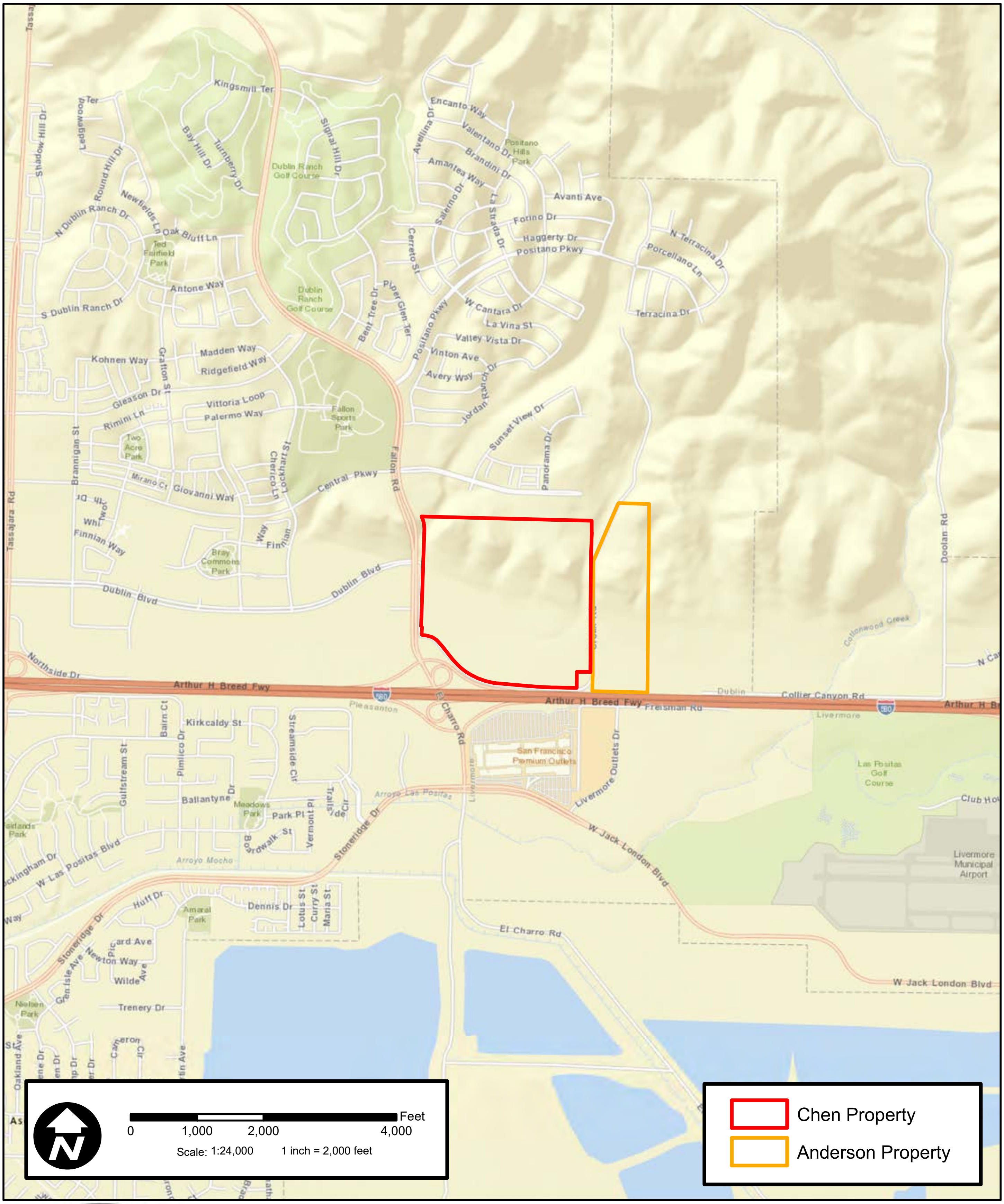

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Figure 2: Vicinity Map
Chen & Anderson Properties
Alameda County, CA

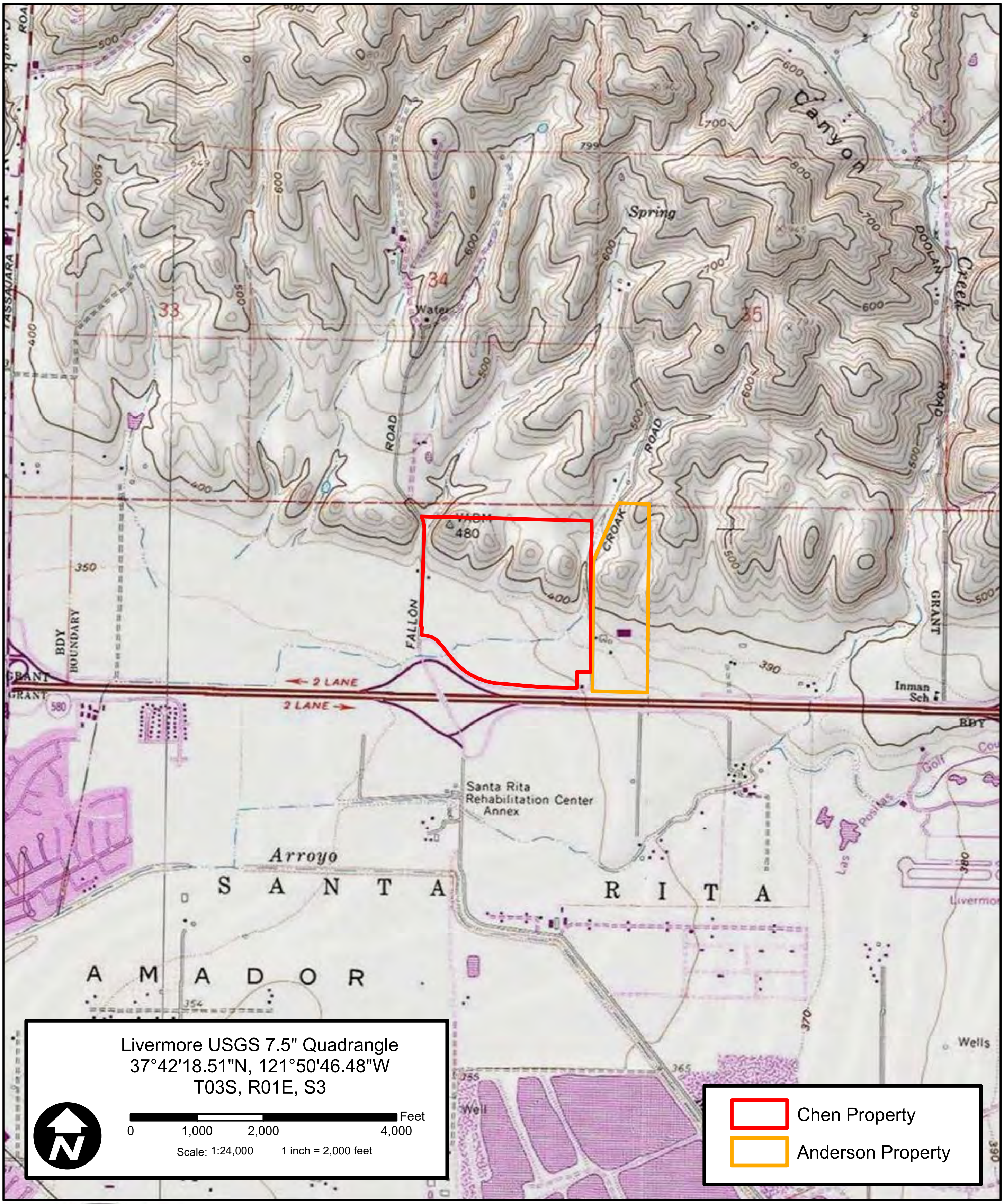

Figure 3: USGS Topographic Map
Chen & Anderson Properties
Alameda County, CA

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193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 4: Aerial Map
Chen & Anderson Properties
Alameda County, CA

OLBERDING ENVIRONMENTAL INC.
193 Blue Ravine Rd., Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Aerial Imagery Source & Date: USDA FSA NAIP, June 6, 2014

Figure 5.
Chen Property
Large-Listed Branchiopod
2017-18 Wet-Season Surveys

Wetland	Acreage	Linear Feet
W1	5.67	-
W2	0.02	-
W3	0.009	-
W4	0.2	-
W5	0.66	-
W6	0.06	-
EW1	2.05	-
WS1	0.29	1556
Total	8.67	1556

Other Waters	Acreage	Linear Feet
OW1	0.009	202
OW2	0.03	264
OW3	0.007	185
OW4	0.055	600
Total	0.10	1251

Prepared by Johnson Marigot Consulting, LLC

January 29, 2018

Figure 6.
Anderson Property
Large-Listed Branchiopod
2017-18 Wet-Season Surveys

Wetland	Acreage
SW1	0.03
SW2	0.02
SW3	0.005
SW4	0.05
SW5	0.004
SW6	0.02
SW7	0.02
SW8	0.76
SW9	0.001
SW10	0.001
SW11	0.002
P1	1.60
Total	2.51

Wetland Swale	Acreage	Linear Feet
WS1	0.004	195
WS2	0.011	250
WS3	0.075	435
Total	0.091	880

Prepared by Johnson Marigot Consulting, LLC

January 29, 2018

Attachment 2

Photo Documentation

Photo 1. Landscape photo of the Chen Property. Facing east. April 11, 2018.

Photo 2. Landscape photo of the Chen Property. Facing north. April 11, 2018.

Photo 3. This depressional feature on the south side of Seasonal wetland 1 on the Chen property contained fairy shrimp. Facing northwest. On data sheet at feature C-SW1-1. April 11, 2018.

Photo 4. Photo of the same depressional feature facing southeast. Lisa Henderson and Frank Muzio are in the photo assisting in the sampling effort. On data sheet as feature C-SW1-1. April 11, 2018.

Photo 5. This is the second depressional feature that was sampled on the Chen Property. Facing south. This feature was on the north side of Seasonal wetland 1. Labeled on data sheet as C-SW1-2. April 11, 2018.

Photo 6. The second depressional feature sampled on the Chen Property. Facing west. Labeled on data sheet as C-SW1-2. April 11, 2018.

Photo 7. The three large-branchiopod individuals that were encountered during sampling within feature C-SW1-1. The two females are on the top of the photo and the male is the one on the bottom. April 11, 2018.

Photo 8. Landscape photo of the Anderson Property. Facing southwest. April 11, 2018.

Photo 9. Landscape photo of the Anderson Property. Facing south. April 11, 2018.

Photo 10. Overview photo of the quarry pit on the Anderson Property, corresponding with features P1 and SW8 of the wetland delineation. Facing northwest. April 11, 2018.

Photo 11. Overview of the general area of the quarry pit on the Anderson Property. Facing west. April 11, 2018.

Photo 12. Photo of surface condition within the wetlands of the quarry pit on the Anderson Property. Facing north. This feature was labeled as A-P1-1 on the data sheet. April 11, 2018.

Photo 13. Photo of feature A-SW8-1 on the Anderson Property. The fringe of the quarry pit on the north side had a series of isolated depressional features of which this is one. Facing east. April 11, 2018.

Photo 14. Photo of feature A-SW8-3 on the Anderson Property. One of a series of depressional features on the north side of the quarry pit. Facing east. April 11, 2018.

Photo 15. Photo of feature A-SW8-4 on the Anderson Property. Facing east. One of a series of depressional features on the north side of the quarry pit. April 11, 2018.

Photo 16. Photo of feature A-SW8-5 on the Anderson Property. Facing south. One of a series of depressional features on the north side of the quarry pit. April 11, 2018.

Photo 17. Photo of the quarry pit wetland feature on the Anderson Property. Facing north. Labeled as A-P1-1 on the data sheet. May 10, 2018.

Photo 18. Photo of feature A-SW8-4 on the Anderson Property. Facing east. May 10, 2018. The other features that were ponded during the previous survey were dry as of the May 10 survey event.

Photo 19. This feature (C-SW1-1) on the Chen Property that contained fairy shrimp during the previous survey was dry as of May 10, 2018 and also for the June survey event. Facing north.

Photo 20. Photo of feature C-SW1-3 on the Anderson Property. Facing west. May 10, 2018. This feature was a flowing water feature during the previous survey event but was barely ponded sufficiently for sampling during May.

Photo 21. This feature (C-SW1-2) on the Chen Property was sampled for a second time on May 10, 2018. Facing west.

Photo 22. This was the only feature sampled during the June 11, 2018 survey event. All other previously sampled features were dry. This feature was identified as C-SW1-4 on the data sheet. Facing north.

Attachment 3

Raw Data

2017-18 WET-SEASON LISTED BRANCHIOPOD SURVEY
Chen-Anderson Properties
City of Dublin, Alameda County, California

Permit #: TE-59890B-0
Livermore USGS 7.5 Min. Quad.

Survey Pool	Sampling Date	Weather Conditions	Air Temp (F)	Water Temp. (F)	Record Depth (Inches)	Est. Max Depth (Inches)	Length (ft)	Width (ft)	Record Surface Area (sq. ft.)	Est. Max. Surface Area (sq. ft.)	BRLY	BRME	BRLI	LEPA	Estimated # of Listed Branchiopods	Notes/ Reproductive Status	Habitat Condition	Land Use of Habitat	Collector	Voucher Specimen Collected?
A-P1-1	04/11/18	partly cloudy	69	58	30	54	250	190	47500	69696	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
A-SW8-1	04/11/18	partly cloudy	67	61	6	30	30	10	300	380	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
A-SW8-2	04/11/18	partly cloudy	67	66	7	31	55	12	660	825	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
A-SW8-3	04/11/18	partly cloudy	64	61	9	33	70	45	3150	3937	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
A-SW8-4	04/11/18	partly cloudy	64	59	15	38	40	40	1600	2000	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
A-SW8-5	04/11/18	partly cloudy	65	61	8	32	20	30	600	750	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
C-SW1-1	04/11/18	partly cloudy	70	69	12	12	100	75	7500	7500	0	0	3	0	10's	Mature	Grazed	Pasturage	C.Aakre	Y
C-SW1-2	04/11/18	partly cloudy	70	65	13	13	50	50	2500	2500	0	0	0	0	0	CRLF	Grazed	Pasturage	C.Aakre	N

Branchinecta lynchi = BRLY
Branchinecta mesovallensis = BRME
Lepidurus packardi = LEPA
Branchinecta lindahli = BRLI

2017-18 WET-SEASON LISTED BRANCHIOPOD SURVEY
Chen-Anderson Properties
City of Dublin, Alameda County, California

Permit #: TE-59890B-0
Livermore USGS 7.5 Min. Quad.

Survey Pool	Sampling Date	Weather Conditions	Air Temp (F)	Water Temp. (F)	Record Depth (Inches)	Est. Max Depth (Inches)	Length (ft)	Width (ft)	Record Surface Area (sq. ft.)	Est. Max. Surface Area (sq. ft.)	BRLY	BRME	BRLI	LEPA	Estimated # of Listed Branchiopods	Notes/ Reproductive Status	Habitat Condition	Land Use of Habitat	Collector	Voucher Specimen Collected?
A-P1-1	05/10/18	sunny	66	62	22	54	200	140	28000	69696	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
A-SW8-4	05/10/18	sunny	66	60	13	38	35	35	1225	2000	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
C-SW1-2	05/10/18	sunny	69	67	11	13	45	45	2025	2500	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N
C-SW1-3	05/10/18	sunny	69	72	3	12	10	10	100	900	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N

Branchinecta lynchi = BRLY
Branchinecta mesovallensis = BRME
Lepidurus packardi = LEPA
Branchinecta lindahli = BRLI

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C-SW1-4	06/11/18	sunny	81	76	10	15	75	75	5625	8500	0	0	0	0	0		Grazed	Pasturage	C.Aakre	N

Branchinecta lynchi = BRLY
Branchinecta mesovallensis = BRME
Lepidurus packardi = LEPA
Branchinecta lindahli = BRLI

Appendix F

Arborist Report

PRELIMINARY ARBORIST REPORT

FOR THE

DUBLIN FALLON EAST PROPERTY

DUBLIN, CALIFORNIA

Prepared for:

GH PAC VEST, LLC
2800 Post Oak Boulevard, Suite 5115
Houston, TX 75056

Prepared by:

OLBERDING ENVIRONMENTAL, INC.
3170 Crow Canyon Place, Suite 260
San Ramon, California 94583

Phone: (925) 866-2111 ~ FAX (925) 866-2126
E-mail: jeff@olberdingenv.com
Contact: Jeff Olberding

May 2022

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This report should be cited as: Olberding Environmental, Inc. May 2022. *Preliminary Arborist Report for the Dublin Fallon East Properties, Dublin, California*. Prepared at the request of GH Pac Vest, LLC, Houston, Texas

1.0 INTRODUCTION AND OVERVIEW

The project proponent is proposing a development on an approximately 190-acre site in Dublin, Alameda County, California. The surveyed site consists of two Properties; Chen and Anderson Properties (also known as the Dublin Fallon East Project) that are currently used for grazing and contain no structures. The two properties consist primarily of annual grassland habitat with wetlands and ephemeral drainages scattered throughout the Property. With construction plans still in the conceptual stage, Olberding Environmental, Inc. (OEI) was asked to prepare a **Preliminary Arborist Report** for the project.

This report provides the following information:

1. Assessment of the health and structural condition of the trees within the Property boundaries area based on a visual inspection from the ground.
2. A preliminary assessment of impacts to trees from the proposed changes and identification of trees for preservation and removal.
3. Preliminary guidelines for tree preservation during the design, construction, and maintenance phases of development

2.0 TREE ASSESSMENT METHODS

Trees were assessed in May 2022. The assessment included all trees 6" in diameter and greater, located within the Property boundaries. The assessment procedure consisted of the following steps:

1. Identifying the tree as to species;
2. Tagging each tree with a unique identifying number and recording its location on a map;
3. Measuring the trunk diameter at a point roughly 4.5 feet above grade (diameter at breast height (DBH));
4. Evaluating the health and structural condition using a scale of 0 – 5:
   5 – A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   4 – Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   3 – Tree with moderate vigor, moderate twig, and small branch dieback, thinning crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   2 – Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   1 – Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
   0 – Dead.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age, and structural condition of the tree, and its potential

to remain an asset to the site for years to come.

High: Trees with good health and structural stability that have the potential for longevity at the site.

Moderate: Trees with somewhat declining health and/or structural defects that can be abated with treatment. The tree will require more intense management and monitoring and may have a shorter lifespan than those in the 'high' category.

Low: Tree in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual may have characteristics that are undesirable for landscapes and generally are unsuited for use areas.

3.0 DESCRIPTION OF TREES

One hundred five (105) trees representing seventeen species were evaluated (Table 1). 96 trees surveyed were within the Property boundaries, with an additional nine trees located along Croak Road near the intersection with Dublin Boulevard. Descriptions of each tree are found in the ***Tree Assessment Form*** and locations are shown on the ***Tree Assessment Map*** (see Exhibits).

Table 1. Condition ratings and frequency of occurrences of trees
Chen & Anderson Properties – Dublin, Alameda County, CA

Common Name	**Scientific Name**	**Condition**				**Total**
		Dead (0)	Poor (1 – 2)	Fair (3)	Good (4 – 5)	
Arroyo Willow	*Salix lasiolepis*	-	5	6	-	11
Black Locust	*Robinia pseudoacacia*	1	-	3	5	9
Chinese Arborvitae	*Platycladus orientalis*	-	-	-	1	1
Chinese Elm	*Ulmus parvifolia*	-	-	-	2	2
Cider Gum Eucalyptus	*Eucalyptus gunnii*	-	3	2	5	10
Coyote Willow	*Salix exigua*	-	-	1	-	1
Deodar Cedar	*Cedrus deodara*	-	-	-	1	1
Fremont Cottonwood	*Populus fremontii*	-	2	11	18	31
Goodding's Willow	*Salix gooddingii*	-	1	-	-	1
Monterey Pine	*Pinus radiata*	-	-	2	-	2
Olive Tree	*Olea europaea*	-	1	-	-	1
Peruvian Pepper	*Schinus molle*	-	-	1	-	1
Red Willow	*Salix laevigata*	-	7	11	4	22
Saltcedar	*Tamarix ramosissima*	-	-	1	-	1
Siberian Elm	*Ulmus pumila*	-	3	3	-	6
Western Sycamore	*Platanus racemosa*	-	1	-	-	1
Willow species	*Salix sp.*	2	1	1	-	4
Total		3	24	42	36	105
		2.8%	22.8%	40%	34.3%	100%

The roughly 190-acre site is currently undeveloped land used for grazing. There are no structures on the Properties. The eastern Property, known as the Anderson Property, was surveyed first and contained three general areas with trees. The north area (Area A inset, Figure 1) appears to be an old quarry site. This quarry was excavated sometime between 1981 and 1985 based on historical aerial photographs. The trees surveyed in this area (Area A) did not exist prior to the quarry excavation. This area was composed of an excavated quarry that contained wetlands and ponds with scattered native Fremont cottonwood and willow trees. The southern half of the Anderson Property had two stands of trees (Areas B & C insets, Figure 1). These were primarily non-native eucalyptus, Chinese and Siberian elm trees, as well as native Monterey pine trees. These trees are also younger than 1981 as they were planted around the barn and other farm buildings that no longer exist on the Property.

The Chen Property to the west of the Anderson Property had the largest trees, with a very mature western sycamore and a very large red willow, both of which had DBHs greater than 24 inches (Area D inset, Figure 1). These trees are visible in historical aerials from 1949 and are significantly older than that. Finally, a row of street trees along Croak Road were also surveyed near the intersection with Fallon Road and Dublin Boulevard (Area E inset, Figure 1). Tags used for the survey were numbered #1758 through #1862.

Within the survey area, Fremont cottonwood (31 trees) and red willows (22 trees) were the most common species and represented 50% of the trees assessed. These tree species were predominantly found within the excavated quarry pit on the Anderson Property. This would make them approximately 37 years old. They were growing among other willow species including arroyo willow, coyote willow, and Goodding's willow, and a single non-native Saltcedar tree. The cottonwood trees were in good to very good condition with high suitability for preservation. The willows were in moderate condition, though willows tend to survive even severe damage. Of the 105 trees surveyed, 73 were California natives (69.5% natives). Fifty-seven (57) trees were young trees with trunk diameters of less than 12", thirty-nine (39) were semi-mature (12" to 24"), eight (8) were mature (24" to 36"), and one (1) were over-mature (>36" – Photo 1). Thirty-six (36) were in good to excellent condition, forty-two (42) in fair condition, twenty-four (24) were in poor condition. There were also three (3) dead trees that was measured and tagged (#1761, 1769 & 1855).

Photo 1: At the southwest corner end of the Chen Property, this red willow (#1849) had a trunk diameter of 48" - the largest diameter tree on the property. One of a handful of trees with trunk diameters above 24" in the survey area.

Twenty-seven (27) trees surveyed were in poor condition (or dead) with included bark between co-dominant stems, broken branches, and dieback, or with trunk rot (Photo 2), with the remaining seventy-eight (78) trees in fair or good condition. Numerous trees also had insect holes and fungal conks which indicate internal decay and will eventually lead to decline.

Photo 2: The mature western sycamore tree at the southwest corner of the Chen Property had a DBH of 35". It had severe trunk-rot and was missing more than 50% of its trunk mass.

Eucalyptus trees (10 trees) dominated Area B and were planted along a fence line. These fast-growing, non-native trees from Australia were likely planted as a windbreak in the 1980s (trees 1826 – 1836). There were also two native Monterey pine trees planted along this row of trees (#1832 & 1837). Area C at the south end of the Anderson Property contained several non-native, ornamental trees that had been planted in the 1980s around the farm buildings that have since been torn down. This stand of trees included a Peruvian pepper tree (#1838), two Chinese elm trees (#1839 & 1840), and six Siberian elm trees (#1841 – 1846).

Area D in the southwest corner of the Chen Property contained the oldest and largest trees in the survey area, including a 48" DBH red willow tree (#1849 – see photo 1 above) and a 35" DBH western sycamore tree (#1851 – see photo 2 above). Both trees may meet the requirements for Heritage Tree status in the City of Dublin; however, the western sycamore had a severely damaged trunk and was missing more than 50% of its trunk mass. These trees were visible in aerial imagery from 1949 and are significantly older than that.

4.0 SUITABILITY FOR PRESERVATION

Before evaluating the impacts that will occur during the proposed project, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on the site must be carefully selected to make sure that they may survive the impacts of the project, adapt to a new environment and perform well in the landscape.

Our goal is to identify trees that have the potential for long-term health, structural stability, and longevity. For trees growing in open fields, away from areas where people and property are present, structural defects and/or poor health presents a low risk of damage or injury if they fail. However, we must be concerned about safety in use areas. Therefore, where development encroaches into existing plantings, we must consider their structural stability as well as their potential to grow and thrive in their new environment. Where development will not occur, the normal life cycles of decline, structural failure, and death should be allowed to continue if it does not put people or property at risk.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Such trees should not be preserved in areas where damage to people or property is likely. Western sycamore #1851 is an example of such trees. Trees that are located away from areas of potential development are not likely to cause damage.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. For instance, cottonwoods and willows have a good tolerance to construction impacts while other trees may have difficulty reacting well to construction damage. Poor tree reactions may include physical injury leading to compartmentalization

and decay issues, pest complications, or soil constraints related to water availability and aeration.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Species invasiveness**
  Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (https://www.cal-ipc.org/plants/profiles/) lists species identified as being invasive. Alameda County is part of the Central West Floristic Province. *Tamarix ramosissima* (tree #1805) is a Cal-IPC "High" rated species and should be removed.

- **Fire risk**
  Several of the species assessed at the site are identified by the California Invasive Plant Inventory as "increasing risk of catastrophic wildland fires". This is NOT something we consider when determining an individual tree's Suitability for Preservation and was not taken into account in the ratings described in Table 2 and in the Tree Assessment Form.

Each tree was rated for suitability for preservation based upon its age, health, structural condition, and ability to safely coexist within a development environment (see Tree Assessment Forms in Exhibits, and Table 2 below). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2: Tree Suitability for Preservation
Chen & Anderson Properties – Dublin, Alameda County

High	These are trees with good health and structural stability that have the potential for longevity at the site. Twenty-three (23) native trees had high suitability for preservation, including: 1 Deodar cedar, 18 Fremont cottonwoods, and 4 red willows. Non-native trees in this category that may be suitable for preservation include: 2 Chinese elm trees, 5 black locust trees, 1 Chinese arborvitae tree, and 5 cider gum eucalyptus.
Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring and may have shorter lifespans than those in the "high" category. Thirty-two (32) native trees had moderate suitability for preservation, including: 6 arroyo willows, 1 coyote willow, 11 Fremont cottonwoods, 2 Monterey pines, 11 red willows, and 1 unidentified willow species. Non-native trees that may be suitable for preservation included: 3 black locust trees, 2 cider gum eucalyptus, 1 Peruvian pepper tree, and 3 Siberian elm trees.
Low	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings (non-native) or be unsuited for use areas. Seven (27) trees had low suitability for preservation, including: 5 arroyo willows, 3 cider gum eucalyptus, 2 Fremont cottonwoods, 1 Goodding's willow, 1 olive tree, 7 red willows, 3 Siberian elms, 1 western sycamore, and 3 unidentified willows. Though Saltcedar is classified as in moderate health (#1805), it is rated as a highly invasive species and should not be preserved.

5.0 PRELIMINARY EVALUATION OF IMPACTS

Appropriate tree retention develops a practical match between the location and intensity of construction activities and the quality and health of trees. The May 2022 Tree Assessment Form was the reference point for tree condition and quality. Potential impacts from construction were evaluated with the assumption that every tree on the Properties being removed except for those in Area D around the large emergent wetland feature (Figure 1). As such, this assessment of impacts to the trees must be considered preliminary. Additional trees may be identified for preservation or removal as plans are refined.

Potential impacts from construction were estimated for each tree. Precise impacts will have to be determined once trees have been located and plotted, and the plans are finalized. The most significant impacts to trees would be associated with grading or recontouring of the hillsides and the construction of the Dublin Boulevard extension across both properties.

Based on plans for the properties, three (3) trees have been identified for potential preservation, including two red willow trees (#1849 & 1852) with DBH in excess of 24" (Table 3, following page) and a single Western sycamore tree. The Western sycamore (#1851) may qualify as a *Protected Heritage Tree* by City of Dublin ordinance; however, due to the trunk damage and low health rating of this tree, it will continue to decline and eventually collapse. The remaining trees are either less than 6.5" DBH, non-native, dead, or interfere with planned construction.

> As relates to this project, City of Dublin Municipal Code §5.60 *Heritage Trees* defines protected heritage trees as "(1)Any oak, bay, cypress, maple, redwood, buckeye and sycamore tree having a trunk or main stem of twenty-four (24) inches or more in diameter measured at four (4) feet six (6) inches above natural grade; (2) A tree required to be preserved as part of an approved development plan, zoning permit, use permit, site development review or subdivision map; (3) A tree required to be planted as a replacement for an unlawfully removed tree."

The three trees preliminarily identified for preservation will need to be accurately located by the surveyors and plotted on the plans. I would also recommend that if any of the large Fremont cottonwoods with a health rating of 4 or above can be preserved without interfering with development plans, that this be considered.

102 trees on the two properties are to be removed and would not be considered "Protected Trees" by the City of Dublin tree ordinance. They may be removed at the Property owner's discretion unless there are any Planning Department conditions requiring that certain trees remain in place. Some of these trees may also be riparian associated trees that would fall under the regulatory authority of the California Department of Fish and Wildlife (CDFW).

Table 3. Trees Preliminarily Identified for Preservation Chen and Anderson Properties – City of Dublin, CA.				
Tag #	**Species**	**Diameter**	**Protected?**	**Recommendation**
1849	Red willow	48	No	**Preserve,** outside impacts
1851	Western sycamore	35	Yes	**Preserve,** outside impacts
1852	Red willow	31, 24	No	**Preserve,** outside impacts

6.0 PRELIMINARY MITIGATION RECOMMENDATIONS

OEI was asked by the Project Proponent to provide recommendations for mitigation of trees proposed for removal as part of the project. In general, we consider the greatest loss of current and potential future environmental benefits to be associated with the removal of native tree species of moderate and high suitability for preservation. These are the trees we would expect to be the best adapted to site conditions and have the greatest potential for longevity.

Based on my review of the data, there were no City of Dublin protected native trees that would need to be removed as a part of the tentative development plan. The willows and Fremont cottonwoods in the quarry area of the Anderson Property (Area A) would however, qualify as riparian associated trees as they are growing among several wetland features and are species that are associated with the interface between land and water. Because these are riparian associated trees, they will be regulated by CDFW. OEI will work with the Project Proponent to recommend mitigation of all native riparian trees of moderate and high suitability for preservation at a 3:1 ratio with 15-gallon replacement trees.

In my experience, 15-gallon containers have been in the pots/nursery for the least amount of time and have the greatest potential to have a well formed, but not defective, root system. These trees also often catch-up with 24" box trees in terms of overall size and development, within a few years of being planted.

Where the immediate visual impact of a larger tree is desired, consider using a 24" or 48" box. I would recommend that each 24" box be counted as two (2) 15-gallon trees and each 48" box be counted as four (4) 15-gallon trees.

Willows and cottonwoods are well adapted to and have performed well on the site and would be appropriate to consider for mitigation plantings. Other California native trees that can be expected to perform well would include Western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia*), and California bay laurel (*Umbellularia californica*).

7.0 PRELIMINARY TREE PRESERVATION GUIDELINES

The following recommendations will help reduce impacts to trees from development as well as maintain and improve their health and vitality through the clearing, grading and construction phases.

Impacts can be minimized by coordinating demolition, grading, and construction activities within the **TREE PROTECTION ZONE**. The following recommendations will help maintain and improve the health and vitality of trees preserved at the property site.

Design recommendations

1. Have the vertical and horizontal locations of all the trees identified for preservation established and plotted on all plans. Forward these plans to the Consulting Arborist for review and comment. Additional trees may be identified for preservation or removal as a result.
2. Project plans affecting the trees shall be reviewed by the Consulting Arborist regarding tree impacts. These include, but are not limited to, demolition plans, site plans, improvement plans, utility, and drainage plans, grading plans, and landscape and irrigation plans.
3. A **TREE PROTECTION ZONE** shall be established around each tree to be preserved. No grading, excavation, construction, or storage of materials shall occur within that zone. For design purposes, the dripline shall be considered the minimum Tree Protection Zone. Once trees have been located and plotted on plans and a final determination of which trees will be preserved is made, specific **TREE PROTECTION ZONES** will be identified for each tree to be preserved.
4. Include Tree Preservation Notes, trees to be preserved, and **TREE PROTECTION ZONES (TPZs)** on all construction plans.
5. Underground services including utilities, sub-drains, water, or sewer shall be routed around the **TREE PROTECTION ZONE**. Where encroachment cannot be avoided, special construction techniques such as hand digging or tunneling under roots shall be employed where necessary to minimize root injury.
6. Irrigation systems must be designed so that no trenching will occur within the **TREE PROTECTION ZONE**.
7. As trees withdraw water from the soil, expansive soils may shrink within the root area. Therefore, foundations, footings, and pavements on expansive soils near trees should be designed to withstand differential displacement.

Pre-construction treatments and recommendations

1. Fence all trees to be retained to completely enclose the **TREE PROTECTION ZONE** prior to demolition, grubbing, drilling, or grading. Fences shall be 6 ft. chain link or equivalent as approved by the Consulting Arborist. Fences are to remain until all grading and construction is completed.

2. Prune trees to be preserved to clean the crown of dead branches 2” and larger in diameter and raise canopies as needed for construction activities. All pruning shall be done by a State of California Licensed Tree Contractor (C61/D49). All pruning shall be done by Certified Arborist or Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300). The Consulting Arborist will provide pruning specifications prior to site demolition. Branches extending into the work area that can remain following demolition shall be tied back and protected from damage.
3. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. Tree pruning and removal should be scheduled outside of the breeding season to avoid scheduling delays. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.
4. Tree(s) to be removed that have branches extending into the canopy of tree(s) to remain must be removed by a qualified arborist and not by demolition or construction contractors. The qualified arborist shall remove the tree in a manner that causes no damage to the tree(s) and understory to remain. Stumps shall be ground below grade.
5. Any brush clearing required within the **TREE PROTECTION ZONE** shall be accomplished with hand-operated equipment.
6. Apply and maintain 3-4” of wood chip mulch within the **TREE PROTECTION ZONE.** Use of coarse wood chips from trees removed on the site is ideal for this purpose.

Recommendations for tree protection during construction

1. Prior to beginning work, the contractors working in the vicinity of trees to be preserved are required to meet with the Consulting Arborist at the site to review all work procedures, access routes, storage areas and tree protection measures.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Any excavation within the dripline or other work that is expected to encounter tree roots should be approved and monitored by the Consulting Arborist. Roots shall be cut by manually digging a trench and cutting exposed roots with a sharp saw. The Consulting Arborist will identify where root pruning is required and monitor all root pruning activities.
4. Fences have been erected to protect trees to be preserved. Fences define a specific **TREE PROTECTION ZONE** for each tree or group of trees. Fences are to remain until all site work has been completed. Fences may not be relocated or removed without permission of the Consulting Arborist.

5. Construction trailers, traffic and storage areas must always remain outside fenced areas.
6. Prior to grading, pad preparation, excavation for foundations/footings/walls, trenching, etc. trees may require root pruning outside the **TREE PROTECTION ZONE** by cutting all roots cleanly to the depth of the excavation. Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, a vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment. The Consulting Arborist will identify where root pruning is required and monitor all root pruning activities.
7. All underground utilities, drain lines, or irrigation lines shall be routed outside the **TREE PROTECTION ZONE**. If lines must traverse through the protection area, they shall be tunneled or bored under the tree as directed by the Consulting Arborist.
8. No materials, equipment, spoil, waste, or wash-out water may be deposited, stored, or parked within the **TREE PROTECTION ZONE** (fenced area).
9. Any additional tree pruning needed for clearance during construction must be performed by a qualified arborist and not by construction personnel.
10. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on-site must be tree-safe and not easily transported by water.
11. Any roots damaged during grading or construction shall be exposed to sound tissue and cut cleanly with a saw.
12. If temporary haul or access roads must pass over the root area of trees to be retained, a roadbed of 6” of mulch or gravel shall be created to protect the soil. The roadbed material shall be replenished as necessary to maintain a 6” depth.

Maintenance of impacted trees

Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. As trees age, the likelihood of failure of branches or entire trees increases. Therefore, annual inspection for structural condition is recommended.

8.0 CONCLUSIONS AND SUMMARY

In total, 105 trees were tagged in the survey area, 96 trees within the Chen and Anderson properties and an additional 9 trees along Croak Road near the intersection with Dublin Boulevard. Tag numbers ran from #1758 through #1862.

Of the trees surveyed, three native trees were identified for preservation due to their location being outside the potential construction footprint and their greater than 24” diameter. Only one qualifies as a City of Dublin protected heritage tree, a large California sycamore; however, this sycamore has a severely damaged trunk and is in decline which lessens its value. Additional native trees may be chosen for preservation by the project proponent if deemed appropriate.

Native willow and Fremont cottonwood trees located in the northern part of the Anderson Property may fall under the regulation of the California Department of Fish & Wildlife due to their riparian association. OEI recommends mitigating for these native species at a 3:1 mitigation ratio with 15-gallon replacements of suitable native trees.

Olberding Environmental, Inc.

Richard Lescalleet
ISA Certified Arborist WE-13135A

Tree Assessment

Client: GH Pac Vest, LLC
Address: 2800 Post Oak Blvd. Ste. 5115, Houston, TX 75056
Project Name: Chen & Anderson Properties
Project Address: Croak Road, Dublin, CA 94588

OLBERDING ENVIRONMENTAL

May 2022

TREE NO.	SPECIES	SIZE DIAMETER (in inches)	PROTECTED	CONDITION 1=POOR 5=EXCELLENT	SUITABILTIY FOR PRESERVATION	COMMENTS
1758	Coyote Willow	8, 5	No	3	Moderate	Old Tag# 725
1759	Arroyo Willow	6, 7, 6, 6, 7	No	3	Moderate	Multi-trunk
1760	Fremont Cottonwood	15, 15	No	4	High	Od Tag# 723, Co-dominant stem
1761	Willow sp.	7, 6, 6,	No	0	Low	Old Tag# 754, Dead tree
1762	Fremont Cottonwood	7	No	3	Moderate	
1763	Fremont Cottonwood	19	No	4	High	Old Tag# 752
1764	Gooding's Willow	7	No	2	Low	Splint Trunk
1765	Willow sp.	5	No	2	Low	Trunk damage
1766	Willow sp.	7	No	3	Moderate	Fungal conks, Trunk damage
1767	Red Willow	9	No	3	Moderate	Split Trunk
1768	Fremont Cottonwood	19	No	5	High	Old Tag# 750
1769	Willow sp.	9	No	0	Low	Dead Tree
1770	Arroyo Willow	7, 4, 4, 3, 5	No	2	Low	Multi-trunk
1771	Arroyo Willow	7, 6, 6	No	3	Moderate	Growing horizontally along ground
1772	Arroyo Willow	8	No	3	Moderate	
1773	Fremont Cottonwood	12	No	4	High	Shares root system w/ #1774
1774	Fremont Cottonwood	12	No	4	High	Shares root system w/ #1773
1775	Arroyo Willow	6, 5, 4, 4	No	3	Moderate	Multi-stem shrub
1776	Arroyo Willow	6, 4, 4, 4, 4	No	2	Low	Multi-stem shrub
1777	Arroyo Willow	6, 5, 5, 4	No	2	Low	Multi-stem shrub
1778	Arroyo Willow	8	No	2	Low	
1779	Red Willow	10	No	3	Moderate	Adventitious roots
1780	Red Willow	12	No	2	Low	
1781	Fremont Cottonwood	16	No	2	Low	Leaf blotch, damaged trunk, insects
1782	Fremont Cottonwood	17	No	4	High	Old Tag# 724

Tree Assessment

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Project Name: Chen & Anderson Properties
Project Address: Croak Road, Dublin, CA 94588

May 2022

OLBERDING ENVIRONMENTAL

TREE NO.	SPECIES	SIZE DIAMETER (in inches)	PROTECTED	CONDITION 1=POOR 5=EXCELLENT	SUITABILTIY FOR PRESERVATION	COMMENTS
1783	Red Willow	6	No	3	Moderate	
1784	Red Willow	7, 8	No	3	Moderate	Old Tag# 726
1785	Red Willow	6	No	2	Low	
1786	Fremont Cottonwood	15, 6	No	4	High	
1787	Fremont Cottonwood	10, 14	No	4	High	
1788	Red Willow	16	No	4	High	Old Tag# 45
1789	Red Willow	6	No	3	Moderate	
1790	Fremont Cottonwood	16	No	4	High	Insect Damage, Root damage
1791	Red Willow	8	No	2	Low	Old Tag# 743, dieback
1792	Red Willow	7, 8	No	3	Moderate	Adventitious roots
1793	Red Willow	7	No	2	Low	Adventitious roots
1794	Fremont Cottonwood	13, 9	No	3	Moderate	Branched Trunk
1795	Fremont Cottonwood	18	No	3	Moderate	Insects, trunkrot
1796	Red Willow	8	No	3	Moderate	Old Tag# 727
1797	Arroyo Willow	6	No	3	Moderate	
1798	Fremont Cottonwood	13	No	4	High	
1799	Fremont Cottonwood	10	No	4	High	
1800	Fremont Cottonwood	11, 6	No	3	Moderate	Branched Trunk
1801	Fremont Cottonwood	12, 5, 4	No	3	Moderate	Branched trunk, Insect/fungal damage
1802	Fremont Cottonwood	16	No	4	High	Old Tag# 736
1803	Fremont Cottonwood	8	No	3	Moderate	Old Tag# 737
1804	Fremont Cottonwood	13	No	3	Moderate	Trunk Damage, Horizontal Trunk
1805	Saltcedar (Tamarisk)	8	No	3	Low	Invasive
1806	Fremont Cottonwood	8	No	3	Moderate	Old Tag#742
1807	Red Willow	6	No	1	Low	

Tree Assessment

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May 2022

OLBERDING ENVIRONMENTAL

TREE NO.	SPECIES	SIZE DIAMETER (in inches)	PROTECTED	CONDITION 1=POOR 5=EXCELLENT	SUITABILTIY FOR PRESERVATION	COMMENTS
1808	Fremont Cottonwood	13, 7	No	3	Moderate	Co-dom Trunk, Included bark
1809	Fremont Cottonwood	10	No	3	Moderate	Old Tag# 739, root damage
1810	Fremont Cottonwood	10	No	3	Moderate	Old Tag# 738, dieback
1811	Red Willow	12	No	3	Moderate	Old Tag# 766
1812	Arroyo Willow	8	No	2	Low	Multi-stem
1813	Arroyo Willow	9	No	3	Moderate	Old Tag# 764, multi-stem
1814	Fremont Cottonwood	17	No	4	High	Old Tag# 762
1815	Fremont Cottonwood	15	No	4	High	Old Tag# 761
1816	Fremont Cottonwood	12	No	4	High	Old Tag# 760
1817	Red Willow	8	No	3	Moderate	Old Tag# 763
1818	Red Willow	7	No	1	Low	Dieback, broken trunk
1819	Red Willow	7, 6	No	2	Low	Old Tag# 759, Co-dom trunk
1820	Fremont Cottonwood	8	No	2	Low	Old Tag# 758
1821	Fremont Cottonwood	17	No	4	High	Old Tag# 757
1822	Red Willow	6	No	3	Moderate	
1823	Red Willow	6	No	3	Moderate	
1824	Fremont Cottonwood	13	No	4	High	Old Tag#765, dieback
1825	Fremont Cottonwood	15	No	4	High	Old Tag#756
1826	Eucalyptus	19, 7, 11, 17	No	3	Low	Old Tag# 722
1827	Eucalyptus	27	No	2	Low	Old Tag# 721
1828	Eucalyptus	22	No	4	Low	Old Tag# 720
1829	Eucalyptus	10	No	3	Low	Old Tag# 719
1830	Eucalyptus	25	No	2	Low	Old Tag# 718
1831	Eucalyptus	11	No	2	Low	Old Tag# 717
1832	Monterey Pine	16	No	3	Moderate	Old Tag# 716

Tree Assessment

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May 2022

OLBERDING ENVIRONMENTAL

TREE NO.	SPECIES	SIZE DIAMETER (in inches)	PROTECTED	CONDITION 1=POOR 5=EXCELLENT	SUITABILTIY FOR PRESERVATION	COMMENTS
1833	Eucalyptus	26	No	4	Low	Old Tag# 715
1834	Eucalyptus	12	No	4	Low	Old Tag# 714
1835	Eucalyptus	15, 16, 8	No	4	Low	Old Tag# 713, Branched Trunk
1836	Eucalyptus	14, 9, 13, 21	No	4	Low	Old Tag# 712, Branched Trunk
1837	Monterey Pine	15	No	3	Moderate	Old Tag# 711
1838	Peruvian Pepper	30	No	3	Low	Old Tag# 703
1839	Chinese Elm	23	No	4	Low	Old Tag# 702, Trunk damage
1840	Chinese Elm	22	No	4	Low	Old Tag# 704
1841	Siberian Elm	9, 7	No	2	Low	Old Tag# 706, Co-dom Trunk
1842	Siberian Elm	9	No	2	Low	Old Tag# 705
1843	Siberian Elm	32	No	3	Low	Old Tag# 707, dieback
1844	Siberian Elm	29	No	3	Low	Old Tag# 708, dieback
1845	Siberian Elm	11, 7, 8	No	2	Low	Old Tag# 709, Multi-trunk
1846	Siberian Elm	15, 13	No	3	Low	Old Tag# 710, Co-dom Trunk, Included bark
1847	Chinese Arborvitae	4, 4, 3, 5, 3, 1, 1, 1	No	4	Low	Shrub
1848	Deodar Cedar	21	No	4	High	Old Tag# 701
1849	Red Willow	48	Yes	4	High	Old-growth tree, Possible Heritage Tree
1850	Olive	8	No	2	Low	Dieback, Multi-trunk, growing through fence
1851	Western Sycamore	35	Yes	2	Low	Old Tag# 775, Major trunkrot, Poss. Heritage
1852	Red Willow	24, 31	Yes	4	High	Old Tag# 777, Co-dom Trunk, Poss. Heritage
1853	Black Locust	7, 4, 2, 2, 1	No	3	Low	Multi-trunk
1854	Black Locust	12, 4, 4, 4, 6, 8, 10	No	4	Low	Multi-trunk
1855	Black Locust	6	No	0	Low	Dead
1856	Black Locust	8, 4, 4, 4, 3, 3, 2, 1	No	3	Low	Old Tag# 779, Dieback, Multi-trunk
1857	Black Locust	7, 4, 4	No	4	Low	Multi-trunk

Tree Assessment

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Address: 2800 Post Oak Blvd. Ste. 5115, Houston, TX 75056
Project Name: Chen & Anderson Properties
Project Address: Croak Road, Dublin, CA 94588

May 2022

OLBERDING ENVIRONMENTAL

TREE NO.	SPECIES	SIZE DIAMETER (in inches)	PROTECTED	CONDITION 1=POOR 5=EXCELLENT	SUITABILTIY FOR PRESERVATION	COMMENTS
1858	Black Locust	6, 4	No	4	Low	Multi-trunk
1859	Black Locust	8, 4, 2	No	4	Low	Multi-trunk
1860	Black Locust	6, 5, 2, 2	No	4	Low	Multi-trunk
1861	Black Locust	11, 11, 8	No	3	Low	Multi-trunk
1862	Red Willow	24	Yes	4	High	Mature, Poss. Heritage Tree
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193 Blue Ravine Road, Ste. 165
Folsom, CA 95630
Phone: (916) 985-1188

Figure 1: Tree Survey Map
Chen & Anderson Properties
Dublin, Alameda County, California

Revision Date: 5/20/2022

Appendix G
CEQA Bio Mitigation Measures Status and Implementation Plan

wra
Environmental
Consultants

MEMORANDUM

TO:	Wooi See, GH PacVest	**FROM:**	Bernhard Warzecha, WRA, Senior Environmental Permitting Specialist
CC:	Jason Laub, Bay West Development	Leslie Lazarotti, WRA, Principal-in-Charge	
DATE:	February 22, 2024		
SUBJECT:	Dublin 580 Fallon East: CEQA Bio Mitigation Measures Status and Implementation Plan		

Project Overview

GH PacVest (Applicant) is proposing the Dublin Fallon 580 Project (project), a mixed-use development located on a 192-acre site in the City of Dublin, Alameda County, California. The proposed project involves conversion of an undeveloped property into commercial, residential, and recreational land uses intermixed with open space.

The project is located immediately northeast of the Fallon Road/Interstate 580 (I-580) Interchange within Planning Subareas D (Fallon Gateway) and E (Fallon Village Center) of the 1994 Eastern Dublin Specific Plan (EDSP) and within the Fallon Village Stage 1 Planned Development (PD) study area. The property is zoned General Commercial/Campus Office (GC/CO), Open Space (OS), Community Park (CP), Public/Semi-Public (P/SP), and Medium High Density Residential (MH) as delineated in the 1985 City of Dublin General Plan, the EDSP, and the approved Stage 1 PD. The project will develop the property consistent with these plans, but deed restrictions proposed within portions of GC/CO, and all Nature Park land will increase aquatic resource protection and prohibit development over 50.08 acres. The project will also initiate the construction of the Dublin Boulevard extension, a regional transportation improvement, and will widen the portion of Fallon Road abutting the project site to the west in association with the Dublin Boulevard extension.

Purpose of the Memorandum

This memorandum provides information requested by the City of Dublin (City) related to compliance with Biological Resources Mitigation Measures (MMs) needed for California Environmental Quality Act (CEQA) review for the Dublin Fallon 580 Project (Project). Specifically, this memorandum focuses on MMs flagged by the City for Project compliance review based on the following CEQA documents:

- Environmental Impact Report [for the] Eastern Dublin General Plan Amendment and Specific Plan (Eastern Dublin EIR; Wallace Roberts & Todd 1992)

- East Dublin Properties Stage 1 Development Plan and Annexation Revised Draft Supplemental Environmental Impact Report (2002 SEIR; City of Dublin 2002)
- Fallon Village Draft Supplemental Environmental Impact Report (Fallon Village SEIR; Haag, 2005)

Additionally, this memorandum is also intended to satisfy the 2002 SEIR MM SM-BIO-1 requiring a "Resource Management Plan". The Resource Management Plan for East Dublin Properties (RMP) was prepared in 2004, and includes the Project site. The Applicant's planned implementation of the MMs as presented in this memo will be consistent with the applicable measures of the RMP, however implementation will be updated as appropriate to the more recent and specific MMs developed since publication of the RMP, listed below.

As required in SM-BI-1, this memo addresses applicable mitigation measures for the development of the proposed Project on the project site. This memorandum includes information regarding specific off-site mitigation lands and the status and implementation of specific Mitigation Measures identified below. We understand that the City's CEQA consultant may use the information contained in this memorandum, and information provided by the Applicant team, as part of its evaluation of the Project's compliance with applicable Eastern Dublin General Plan Amendment and Specific Plan biological resources policies.

The City-flagged MMs are addressed as follows:

SM[1]-BIO-4: *If a special-status plant species cannot be avoided, then the area containing the plant species must be measured and one of the following steps must be taken to ensure replacement on a 1:1 ratio (by acreage):*

a) *Permanently preserve, through use of a conservation easement or other similar method, an equal amount of acreage either within the Project area or off-site that contains the plant; or*
b) *Harvest seeds from the plants to be lost or use seeds from another source within the Tri-valley area and seed an equal amount of area suitable for growing the plant either within the Project area or off-site. Such area shall be preserved and protected in perpetuity. If the plants fail to establish after a five-year period, then step "a" above must be implemented.*

   Prior to submittal of a Stage 2 development plan or tentative map, the developer shall submit a written report to the City for its review and approval demonstrating how the developer will comply with this mitigation measure, including the steps it will take to ensure that transplanting or seeding will be successful.

AND

SSM[2]-BIO-1 (revised). *If special-status plants cannot be avoided, then the area containing the plant that is to be impacted, and the approximate number of plants to be impacted, must be determined, and the following steps must be taken:*

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[1] SM refers to mitigation measures from the 2002 SEIR
[2] SSM refers to mitigation measures from the Fallon Village SEIR.

a) *Harvest seeds from the plants to be lost, or use seeds from another source within the Livermore and Amador valleys, and their surrounding watersheds, and seed an area suitable for supporting the plant, either within the Project area or off-site, at a level sufficient to replace the impacted individuals at a 1:1 ratio on an individual plant and basis, and at a ratio no less than 0.5:1 on an occupied habitat basis. The mitigation site shall be preserved and protected in perpetuity. If the mitigation site fails to support at least as many plants as were impacted within a five-year period, then step "b" below must be implemented.*

b) *Permanently preserve, through use of a conservation easement or other similar method, an equal amount of acreage either within the Project area or off-site that contains the plant.*

Prior to submission of a Stage 2 development plan or tentative map, the developer shall submit a written report to the City for its review and approval demonstrating how the developer will comply with this mitigation measure, including the steps it will take to ensure that transplanting or seeding will be successful.

Implementation Status and Plan: The Applicant has completed several special-status plant surveys[3] and identified and mapped sensitive plant populations on the Project site required to be addressed under CEQA.[4] Most of these populations occur within the proposed Project grading footprint and cannot be avoided. Consistent with the Eastern Alameda County Conservation Strategy (EACCS) the Applicant will prepare and implement a Mitigation Plan consistent with the requirements of SM-BIO-4 and SSM-BIO-1. Mitigation will consist of a combination of the following: preservation of on-site and/or off-site mitigation in perpetuity, and/or seed harvest (ideally from the populations on site), with subsequent establishment of an equal area for each population at a 1:1 ratio on an individual plant and basis, and at a ratio no less than 0.5:1 on an occupied habitat basis within 5 years, preserved in perpetuity.

On-site mitigation opportunities may include deed-restricted and preserved creek, wetland and upland habitat potentially suitable to establish populations of the rare plants impacted by the Project.

Potential off-site mitigation would include compensatory mitigation on parcels within the same regional watershed owned by the City of Livermore, and the purchase of mitigation credits from the N3 Ranch mitigation bank or other agency-approved alternative mitigation bank or turnkey mitigation site. The N3 Ranch is an approximately 50,000-ac private property located south of the City of Livermore in Alameda, San Joaquin, Santa Clara, and Stanislaus counties. It is a suitable mitigation site for mitigating the Project's impacts to jurisdictional waters of the U.S and State, as well as a location for species-specific mitigation.

A Mitigation Plan is being prepared as part of the Resource Agency permit applications, and the East Alameda County Conservation Strategy (EACCS) performance standards will be

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[3] Olberding Environmental, Inc. September 2022. *Special-Status Plant Survey Report for the Dublin Fallon East Project, City of Dublin, California.* Prepared for GH America Investments, INC, Houston, Texas.

[4] *Olberding Environmental, Inc. October 2022. Biological Resources Analysis Report for the Dublin Fallon East Property, City of Dublin, Alameda County, California. Prepared for GH Pac Vest LLC.*

implemented, including those specific to impacts to special-status plants as outlined in Chapter 3 of the EACCS:

- Avoidance of direct and indirect impacts to the extent feasible
- Minimization of unavoidable impacts through appropriate design and construction measures
- Mitigation of residual impacts through on-site or off-site preservation, enhancement, restoration, or creation of suitable habitat
- Monitoring and adaptive management of mitigation sites to ensure long-term viability and functionality

The Mitigation Plan, once approved by the regulatory agencies will be submitted to the City for informational and record-keeping purposes.

SM-BIO-5: *To the extent feasible, implementation of the Project through subsequent preparation of Stage 2 development proposals on a property-by-property basis shall be designed to avoid and minimize adverse effects to waters of the United States (which include seasonal wetlands and intermittent streams) within the Project area. Examples of avoidance and minimization include (1) reducing the size of future individual development projects within the Project area, (2) design future development projects within the Project area so as to avoid and/or minimize impacts to waters of the United States, and (3) establish and maintain wetland or upland vegetated buffers to protect open water such as streams. In order to protect the particularly sensitive Arroyo willow riparian woodland and red-legged frog habitat found in the Fallon Road drainage from Fallon Road upstream to its terminus, future development projects within the Project area either shall completely avoid this drainage or limit impacts to bridge crossings (as opposed to fill) or other such minimally impacting features.*

Implementation Status and Plan: The Project has been designed to avoid and minimize adverse effects to waters of the United States to the extent feasible. Specifically, the size of the Project grading footprint has been reduced to allow for deed-restricted preservation of 10.4± acres (1,840± linear feet) of waters and wetlands, including streams, and associated riparian habitat and upland buffers. These avoidance areas include avoidance of the riparian woodland lining the drainage in the northwest corner of the property, along Fallon Road. The Project includes preservation of on-site willow riparian woodland occurring on the northwest corner of the property and widening and daylighting of portions of the downstream reaches of the perennial stream along Fallon Road, a portion of which currently flow through closed culvert pipes. A creek enhancement and mitigation design plan has been prepared by ENGEO (Attachment A).

Additionally, the Project will obtain authorization from the USACE, RWQCB, CDFW, and USFWS as applicable. The permitting programs administered by these agencies (including compliance with CFGC 1602 and 2081, the Clean Water Act, Porter Cologne Water Quality Control Act, and State and Federal Endangered Species Acts) will require the Project to avoid, minimize and compensate for potential impacts to all aquatic resources and special-status species and their habitats, including California red-legged frog. With implementation of the agency-required avoidance, minimization and compensatory mitigation measures for this project, the requirements of SM-BIO-5 will be achieved concurrently. Additionally, project and mitigation implementation will be consistent with the requirements developed for the EACCS to protect streams, riparian and CRLF habitat.

SM-BIO-6: *To the extent that avoidance and minimization are not feasible and wetlands, intermittent streams or other waters will be filled, such impacts shall be mitigated at a 2:1 ratio* *(measured by acreage) within the Project area if feasible, through the creation, restoration or enhancement of wetlands, intermittent streams or other waters. Such mitigation area shall be preserved and protected in perpetuity. Prior to submittal of a Stage 2 development plan or tentative map for any property within the Project area, the property owner shall submit a written report to the City for its review and approval demonstrating how the owner will comply with this mitigation measure.*

AND

SM-BIO-7: *If mitigation within the Project area is not feasible, then the developer shall mitigate the fill of wetlands or other waters at a 2:1 ratio (measured by acreage) at an off-site location acceptable to the City. Such mitigation area shall be preserved and protected in perpetuity. Prior to submittal of a Stage 2 development plan or tentative map, the property owner shall submit a written report to the City for its review and approval demonstrating how the owner will comply with this mitigation measure.*

Implementation Status and Plan: The Applicant proposes to mitigate unavoidable impacts to creeks and wetlands at a minimum ratio of 2:1 (measures by acre). This will be achieved by a combination of on-site creation/preservation, in combination with compensatory mitigation on parcels within the same regional watershed owned by the City of Livermore, and obtaining credits from N3 Ranch mitigation or other agency-approved alternative mitigation bank or turnkey mitigation site.

Additionally, project and mitigation implementation will be consistent with the requirements developed for the EACCS to protect and mitigate impacts to wetlands, intermittent streams and other waters. EACCS mitigation measures related to wetlands, intermittent streams and other waters are designed to protect and enhance the ecological functions and values of these aquatic resources. The EACCS provides a framework for identifying, implementing, and monitoring mitigation projects that compensate for the unavoidable impacts of development activities on wetlands, intermittent streams and other waters within the EACCS planning area.

Consistent with the EACCS, the Project's mitigation will establish performance standards and success criteria:

- Mitigation projects will be located within the same regional watershed
- Mitigation projects will be compatible with the existing and planned land uses, and avoid or minimize conflicts with agricultural operations, public utilities, flood control, fire management and other public services.

The Mitigation Plan, once approved by the regulatory agencies will be submitted to the City for informational and record-keeping purposes.

Additionally, the Project will obtain authorization from the USACE, RWQCB, CDFW, and USFWS. The permitting programs administered by these agencies (including compliance with CFGC 1602 and 2081, the Clean Water Act, Porter Cologne Water Quality Control Act, state and federal Endangered Species Acts) will require the Project compensate for potential impacts to all aquatic resources in-kind, and are expected to require compensatory mitigation for loss of aquatic resources at a ratio of 2:1 or higher. Therefore, with implementation of the agency-required compensatory mitigation measures for this project, the requirements of this SM-BIO-6 and 7 will be achieved concurrently.

SM-BIO-14: *If avoidance is infeasible, then mitigation lands providing similar or better habitat for CRLF at a 3:1 replacement ratio or suitable ratio determined by the USFWS, shall be preserved and protected in perpetuity. This mitigation, to be proposed in a mitigation and monitoring plan submitted to the City, shall be required prior to submittal of the Stage 2 Development Plans and tentative maps for any specific property within the Project area. In selecting off-site mitigation lands, preference shall be given to preserving large blocks of habitat rather than many small parcels, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas. If the identified mitigation lands have been approved by the City, the following guidelines [outlined in SM-BIO-15] implemented prior to and during construction would reduce impacts to individual CRLF and preserved CRLF habitat.*

Implementation Status and Plan: The Applicant will mitigate unavoidable impacts to CRLF habitat at a 3:1 replacement ratio or suitable ratio determined by the USFWS through the Section 7 consultation process. The Applicant has submitted a CWA Section 404 permit application, which requires consultation with USFWS defining the adequate compensatory mitigation ratio, acceptable mitigation lands and/or mitigation credits, as well as avoidance and minimization measures to minimize incidental take of this species. This process will include preparation of a mitigation and monitoring plan element, which will also be provided to the City for informational and record-keeping purposes once approved by the regulatory agencies. Specifically, restoration of Jordan Creek (Attachment A) and adjacent wetland avoidance will increase quality and quantity of CRLF habitat on-site. Both on-site and off-site mitigation for CRLF will be consistent with the EACCS, including, but not limited to:

- Minimizing indirect impacts to CRLF and its habitat by implementing all required Avoidance and Minimization Measures (AMMs), best management practices such as erosion control, fencing, lighting, noise reduction, and invasive species management.
- Compensating for unavoidable impacts to CRLF and its habitat by providing habitat restoration, enhancement, creation, or preservation following the EACCS *Impact/Mitigation Scoring for California red-legged frog in the EACCS Study Area* (Appendix E, Table E-5.).
- Monitoring and reporting on the effectiveness of the mitigation measures and the status of the CRLF population and habitat.

With implementation of all measures required by the USFWS/Corps through ESA Section 7 consultation for CRLF, and consistency with the EACCS, the requirements of SM-BIO-14 will be achieved concurrently.

SM-BIO-19: *If avoidance is infeasible, mitigation lands, providing similar or better aquatic and upland habitat for California tiger salamander (CTS) at a 1:1 ratio shall be set aside in perpetuity. Upland habitat shall be mitigated by preserving upland on-site, or if necessary, by preserving currently occupied upland tiger salamander habitat off-site. Aquatic habitat shall be mitigated by creating an equal number (or acreage) of new aquatic California tiger salamander breeding areas within the preserved upland habitat. This mitigation, included in a mitigation and monitoring plan, shall be submitted to the City prior to submittal of Stage 2 development plans and tentative maps. In selecting off-site mitigation lands, preference shall be given to preserving large blocks of* *habitat rather than many small parcels, linking preserved areas to existing open space and other high-quality habitat, and excluding or limiting public use within preserved areas.*

Implementation Status and Plan: The Applicant will mitigate unavoidable impacts to CTS habitat at a 1:1 replacement ratio by preserving upland on-site, or if necessary, by preserving currently occupied upland tiger salamander habitat off-site. Aquatic habitat will be mitigated by creating an equal number (or acreage) of new aquatic California tiger salamander breeding areas within the preserved upland habitat, if feasible. Mitigation will be consistent with the EACCS, specifically as stated in Table E-4. *Impact/Mitigation Scoring for California tiger salamander in the EACCS study area.*

Additionally, the Applicant has submitted a CWA Section 404 permit application, which requires consultation with USFWS defining the adequate compensatory habitat mitigation ratio, acceptable mitigation lands and/or mitigation credits, as well as avoidance and minimization measures to minimize incidental take of this species. Additionally, the Applicant will obtain an Incidental Take Permit from CDFW, which furthermore will define adequate compensatory mitigation. This process will include preparation of a mitigation and monitoring plan element, which will also be provided to the City for informational and record-keeping purposes once approved by the regulatory agencies.

With implementation of all measures required by the USFWS/Corps through ESA Section 7 consultation, and California Fish and Game Code Section 2081 et seq., the requirements of MM SM-BIO-19 will be achieved concurrently.

SSM-BIO-2 (revised) (burrowing owl). *During the breeding season (February 1-August 31) prior to submittal of Stage 2 development proposals for a particular parcel, or during a subsequent breeding season but prior to the initiation of construction, a survey shall be conducted according to CDFG protocols to determine whether Burrowing Owls are present, and if present, the number of nesting pairs of Burrowing Owls present on the parcel.*

Implementation Status and Plan: Available documentation, including CDFW's CNDDB, the Biological Resources Analysis Report for the Dublin Fallon East Property (Olberding Environmental 2022) and unpublished results from site visits by other biologists over the past years (including Johnson Marigot Consulting), indicates that the site has not been occupied since 2002. Additionally, the Applicant has retained WRA to assessing the site for burrowing owl presence or absence by Conducting burrowing owl surveys in 2024 according to the latest CDFW survey protocol defined in the *2012 CDFW Staff Report on Burrowing Owl Mitigation*. The results will be submitted to the City for review. If a burrowing owl is found to occupy the Project site, the Applicant will coordinate with CDFW to develop an adequate Burrowing Owl Mitigation Plan, and/or implement related MMs SSM-BIO-3 through SSM-BIO-5. Additionally, burrowing owl is a focal species of the EACCS. Therefore, the Project will implement applicable mitigation measures related to this species.

ATTACHMENT A.

GH PACVEST PROPERTY MITIGATION CREEK
DUBLIN, CALIFORNIA

JORDAN CREEK GEOMORPHIC BASIS OF DESIGN REPORT

SUBMITTED TO
Mr. Jason Laub
Bay West Development
c/o GH PacWest LLC
3000 Executive Parkway, Suite 375
San Ramon, CA 94583

PREPARED BY
ENGEO Incorporated

October 11, 2023
Latest Revision October 20, 2023

PROJECT NO.
4663.110.007

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GEOTECHNICAL
ENVIRONMENTAL
WATER RESOURCES
CONSTRUCTION SERVICES
COASTAL/MARINE GEOTECHNICS

Project No.
4663.110.007

October 11, 2023
Latest Revision October 20, 2023

Mr. Jason Laub
Bay West Development
c/o GH PacWest LLC
3000 Executive Parkway, Suite 375
San Ramon, CA 94583

Subject: GH PacVest Property Mitigation Creek
Dublin, California

JORDAN CREEK GEOMORPHIC BASIS OF DESIGN REPORT

Dear Mr. Laub:

ENGEO prepared this basis of design report for the Jordan Creek channel mitigation, proposed along the western boundary of the GH PacVest Property in Dublin, California. A hydrologic analysis provided by MacKay & Somps Civil Engineers, Inc. (MacKay & Somps), along with our geomorphic site reconnaissance and preliminary hydraulic analysis, form the basis of design provided in this report.

This report discusses our findings and the recommended channel mitigation as shown in Figure 1. We have developed these recommendations in conjunction with the project civil engineer, MacKay & Somps. We expect these recommendations will be reviewed by the San Francisco Regional Water Quality Control Board.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

Brooke Spruit, PE

Jonathan Buck, PE

Julia M. Moriarty, PE

bs/ch/jb/jam/ca

2010 Crow Canyon Place, Suite 250 • San Ramon, CA 94583 • (925) 866-9000 • Fax (888) 279-2698
www.engeo.com

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 SITE BACKGROUND

The GH PacVest Property and planned residential development project is located at the headwaters of Jordan Creek in Dublin, California. This Basis of Design Report is for the design of a creek channel (Jordan Creek) mitigation being proposed along the western boundary of the GH PacVest Property (Site), as shown in Figure 1.

Jordan Creek is located within the Alameda Creek watershed, which drains from the eastern hillsides of Alameda County to the East Bay. Further, the creek is located within the Arroyo Mocho Canal sub-watershed, which begins in west Livermore and carries the flow of Arroyo Mocho northwest to join with Arroyo Las Positas. The region generally receives the majority of its precipitation in the winter months with a mean annual precipitation of 16 inches per year at the Site (Alameda County Flood Control & Water Conservation District, 2018).

The drainage area for Jordan Creek is comprised of predominantly open space drainage and a pedestrian corridor that runs northeast to southwest through the middle of the existing Jordan Ranch and Positano residential communities. Existing subdrain outfalls from the Jordan Ranch and Positano developments contribute dry-weather flows to the creek channel on the order of 0.03 cfs (ENGEO, 2023). However, runoff from the surrounding Jordan Ranch and Positano developments drain to hard-lined storm drain piping systems that ultimately drain west to the 84-inch storm drain main that flows south within the Fallon Road right of-way. The 84-inch storm drain main was built within the Positano Development and sized to convey the storm runoff flows from the fully developed communities of both Jordan Ranch and Positano. Therefore, the historical watershed of the creek channel is much smaller in the present day than prior to the development of the projects in the upper watershed. However, base flows have increased due to existing subdrains that discharge subsurface water, resulting from dry weather runoff from those projects, into the creek channel creating nearly perennial low-flow conditions which are ideal for riparian habitat enhancement in the lower reach within the Site. ENGEO’s Hydrologic Water Availability Analysis provides further discussion on these estimated dry weather flows (ENGEO, 2023).

1.2 SUMMARY OF EXISTING AND HISTORICAL CONDITIONS

At the upstream limit of the GH PacVest Property, an existing approximately 410 linear foot, 48-inch culvert currently conveys drainage in the creek channel southward to a drainage ditch that runs immediately to the east of Fallon Road (along Old Fallon Road/Croak Road). Flows continue southward in the drainage ditch another approximately 1,100 linear feet and enter an existing 24-inch culvert under Croak Road, where flows ultimately enter a 6-foot-by-5-foot box culvert under Fallon Road and drains to the west.

Based on our review of several historical photographs from 1949 to the present day, the subject reach of Jordan Creek has historically traversed across open space from the hillsides of Dublin. The lower portion of the creek appeared to have been bisected by Old Fallon Road and redirected into a roadside channel along Old Fallon Road to flow south along the western edge of the GH PacVest Property. New Fallon Road was constructed circa 2007; however, the general planform of the creek has remained the same.

We understand there have been roadside channel breaches during storm events beginning in 2007, which cause sheet flow to the east of the ditch in low-lying areas. Two main breach points have been observed at different storm events: a northern breach point south of the proposed Dublin Boulevard extension, and a southern breach point upstream of the existing Croak Road culvert. In 2007, the southern point was breached, and in 2011 and 2015, the northern point was breached; the southern point, which may have been repaired, was not impacted. A breach repair was performed in 2017 at the northern point where the northern end of the ditch was excavated, and a berm was constructed to redirect flows to the roadside channel. The northern breach repair impacted the southern breach point, causing the wetland complex to shift south, and breaching at the south point was observed in 2022. Additional ditch maintenance was complete in October 2022, which included removing sediment to restore flow and replacing the failed culvert under Croak Road.

Based on our site reconnaissance performed on August 23, 2023, we observed base flows in the channel, approximately 2 inches deep, within the existing Jordan Creek channel. We observed the reach of channel that is upstream of Old Fallon Road as having a low flow channel with an approximately 1-foot-wide bottom, approximately 1:1 (horizontal:vertical) side slopes, and roughly 1 foot in depth. The total width of the channel (including low flow channel and adjacent floodplains) is approximately 35 feet upstream of Old Fallon Road. The low-flow channel in this reach is moderately sinuous, as it appears to meander within a wider floodplain approximately ⅓ on either side of the centerline of the greater 35-foot-wide floodplain as shown in Photo 1.2-1 below.

PHOTO 1.2-1: Typical conditions of Jordan Creek immediately upstream of Site. Meandering low-flow channel within wider floodplain section.

We observed the reach of channel that is downstream of the Dublin Boulevard alignment as having a low flow channel with an approximately 3-foot-wide bottom, approximately 1:1 (horizontal:vertical) side slopes, and roughly 1-foot in depth. The total width of the channel (including low flow channel and adjacent floodplains) is approximately 8 feet, downstream of

Dublin Boulevard. In this reach the channel has been graded in this location, as noted above, and, therefore, does not necessarily contain geomorphic characteristics of a natural channel.

PHOTO 1.2-2: Typical conditions of Jordan Creek (roadside channel) adjacent to existing Fallon Road downstream of the Dublin Boulevard alignment. Little sinuosity in low-flow channel and narrow overall cross section.

1.3 PURPOSE

This report presents the results of design analyses for the portion of Jordan Creek upstream and adjacent to Old Fallon Road and Croak Road. For this study, we evaluated the current hydrologic conditions and the proposed new creek alignment to restore the currently culverted channel beneath Croak Road.

The project intends to remove a portion of the historical Old Fallon Road alignment north of Dublin Boulevard on the western project boundary, and daylight a historical creek channel that is currently underground in a storm drain system. The open channel will continue to the Dublin Boulevard alignment (Upper Reach, Figure 1). The channel will then be culverted under Dublin Boulevard, where it will then outlet to an open channel (Middle Reach, Figure 1) and culverted at the Fallon Gateway Project Entry alignment. After the culvert, the open channel will continue parallel to Fallon Road (Lower Reach, Figure 1) before finally connecting to an existing culver near the Croak Road and Fallon Road intersection.

The channel is intended to convey flows originating from upgradient areas including the Jordan Ranch and Positano residential developments, through the GH PacVest Property, and to the outfall. The project will dedicate an approximately 50-foot-wide strip of land to accommodate the new open channel. This channel is intended to receive mitigation credit for other project water features that may be filled in as a result of the project, in order to receive clearance from the San Francisco Regional Water Quality Control Board (SFRWQCB).

This report and the accompanying figure present a concept-level design for the creek channel mitigation. The channel must be monitored for 5 years after the restoration and construction of the creek channel. If, during this time, additional restoration or stabilization work is needed based on observed conditions, additional revisions to the creek mitigation construction and restoration may need to be performed. Any future revisions to the creek restoration design are beyond our present scope of services.

1.4 PROJECT GOALS

The intent of the recommendations herein follows.

1. Recreate, to the maximum extent, a creek channel with geomorphic characteristics similar to other creeks in the area with a low flow channel, floodplain, and bed slope in order to equilibrate sediment transport through the reach.
2. Maintain up to the 100-year flow within the channel.
3. Enhance the habitat values of the creek where practicable. For this reach of creek, replanting of vegetation will be required after removal of Old Fallon Road. Plants will be replaced with a robust and appropriate native plant palette. Ultimately, the root architecture of the plant species will provide protection against excessive erosion.
4. Install a new 48-inch-diameter culvert beneath the future extension of Dublin Boulevard, anticipated to be furnished with a headwall and wingwalls at both the inlet and outlet.
5. Install a new 48-inch-diameter culvert beneath the Fallon Gateway Project Entry, anticipated to be furnished with a headwall and wingwalls at both the inlet and outlet. The diameter of the culverts is intended to be consistent with the existing 48-inch culvert at the outfall of the creek channel near Croak Road.
6. Stabilize the culvert inlets and outlets with rock riprap where erosion potential exists, due to contraction and expansion.

2.0 DISCUSSION

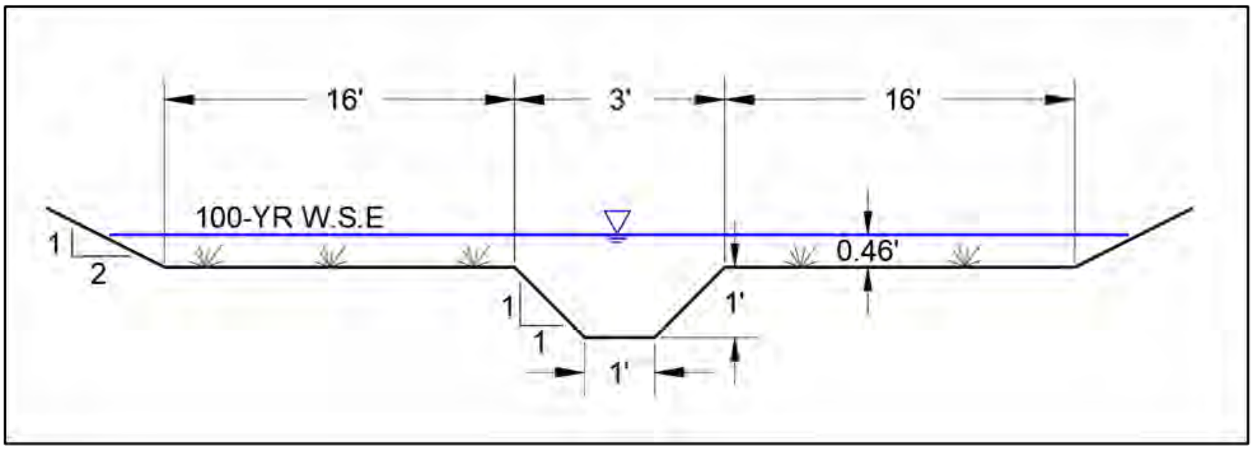
2.1 HYDROLOGIC ANALYSIS

MacKay & Somps conducted a hydrologic study for Jordan Creek, which indicates a watershed area of 89.9 acres, as delineated in Appendix A (MacKay & Somps, 2022). MacKay & Somps also provided us with their HEC-HMS model for the larger project development, which indicates a 100-year peak discharge rate of 56 cubic feet per second (cfs).

2.2 GEOMORPHIC ANALYSIS

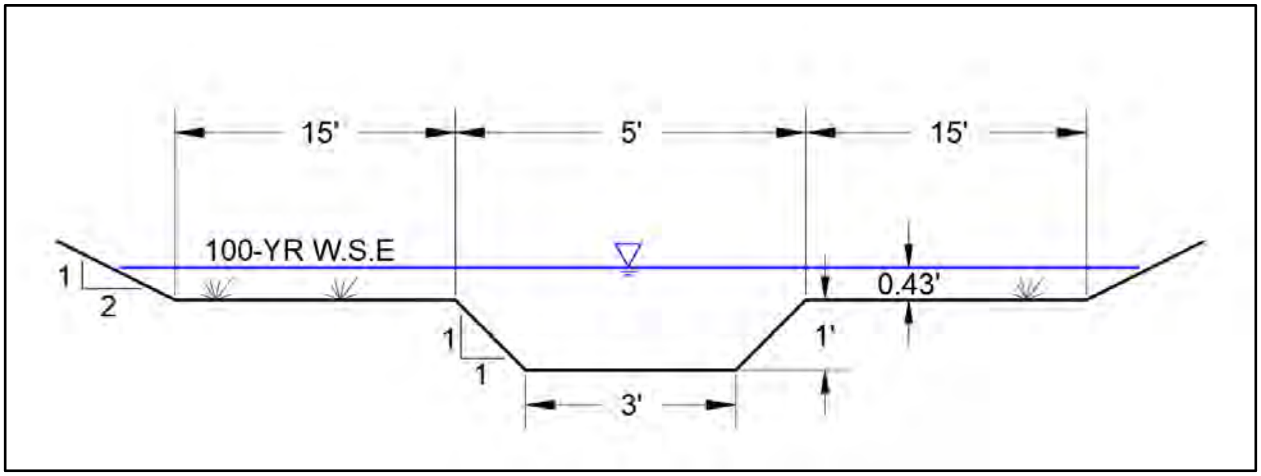
The project intends to daylight the existing creek channel north of the future Dublin Boulevard alignment and to provide a more natural creek corridor south of the alignment that may mimic more historical conditions. On the basis of our geomorphic reconnaissance, we recommend providing a minimum total cross-sectional width of 35 feet for the recreated channel in the upper reach and mimicking similar low flow channel dimensions and overbank floodplains as currently formed in stable areas upstream. The low flow channel may be graded in the middle of the larger floodplain for design purposes; however, we expect the low flow will eventually reach an equilibrium slope similar to the existing condition, and meander through the proposed 35-foot cross-section. This should allow the low flow channel to form its own pool and riffle system. For the upper reach, we recommend the ultimate condition having a created floodplain with an approximate bed slope of 0.009 ft/ft and a low flow channel reaching an ultimate equilibrium slope at approximately 0.0075 ft/ft within the created floodplain. Exhibit 2.2-1 shows typical cross-sectional geometry, with the results of 100-year hydraulic modeling discussed in Section 2.3.

EXHIBIT 2.2-1: Typical Cross Section Upstream of Proposed Dublin Boulevard



South of the Dublin Boulevard alignment, we expect hydrologic conditions to be very similar to the upper reach of creek. However, the bed slope of the low flow channel will be slightly flatter to match the existing topography of the valley floor. Since perennial base flows are likely the major cause of the width of the low flow channel formation in this area, we recommend mimicking the 3-foot bottom width of the existing low flow channel dimensions in this area and leaving the cross-sectional area to mimic the floodplain in the upper reach. The ultimate condition in this reach should have both a low flow and floodplain with a bed slope of approximately 0.0075 ft/ft. Exhibit 2.2-2 shows typical cross-sectional geometry with the results of 100-year hydraulic modeling discussed in Section 2.3.

EXHIBIT 2.2-2: Typical Cross Section Downstream of Proposed Dublin Boulevard



2.3 HYDRAULIC ANALYSIS

A preliminary hydraulic analysis for the proposed creek condition (see Exhibits 2.2-1 and 2.2-2, Section 2.2) was performed using the HEC-RAS Version 6.4.1 computer program published by the United States Army Corps of Engineers (USACE). HEC-RAS performs one- and two-dimensional (2D) hydraulic analyses for natural channels to calculate water surface profiles and velocities.

A 2D hydraulic analysis was prepared for the proposed channel condition, which included grading an alignment with a low flow channel and floodplain to convey the 100-year flowrate. The proposed low flow channel was designed to match the existing low flow channel geometry as observed from our site reconnaissance. The floodplain width for the proposed channel was determined by maintaining a minimum total channel width of 35 feet. Two 48-inch-diameter culverts were included in the model at Dublin Boulevard and Fallon Gateway Project Entry to convey flow beneath the proposed Dublin Boulevard extension and project entrance across from the existing Fallon Gateway.

The hydraulic model is based on 'normal depth' boundary conditions, whereby HEC-RAS calculates an initial water surface profile based on the bed slope of the creek. Estimated bed slopes for the creek of 0.009 ft/ft at the upstream end and 0.0075 ft/ft at the downstream end were used as boundary conditions for computational purposes.

The value of the Manning's roughness coefficient (*n*) establishes frictional resistance in the channel and is thus related to the modeling of channel velocity and water surface profile by the HEC-RAS program. Based on visual observation of the current channel and overbank conditions, an '*n'* value was selected that typified the hydraulic roughness created by vegetation and other factors encountered throughout the study reach. This value is based on recommended minimum, maximum, and normal values developed for a variety of vegetative and morphological conditions similar to those found in the channel and banks of the study creek. The proposed Jordan Creek channel bottom is relatively clean and straight, with no rifts or deep pools. This is represented by a Manning's *'n'* value of 0.03 for channel roughness (Chow, 1959).

A 100-year flowrate of 56 cfs was input at the upstream end of the channel.

2.4 CHANNEL INPUTS

Based on our geomorphic recommendations, the following channel geometry were input into the model.

Upstream of Proposed Dublin Boulevard

- 1 foot base width
- 1H:1V side slopes
- 1 foot depth
- 16 feet of floodplain on both sides of the low flow channel
- 0.9% longitudinal slope for floodplain,

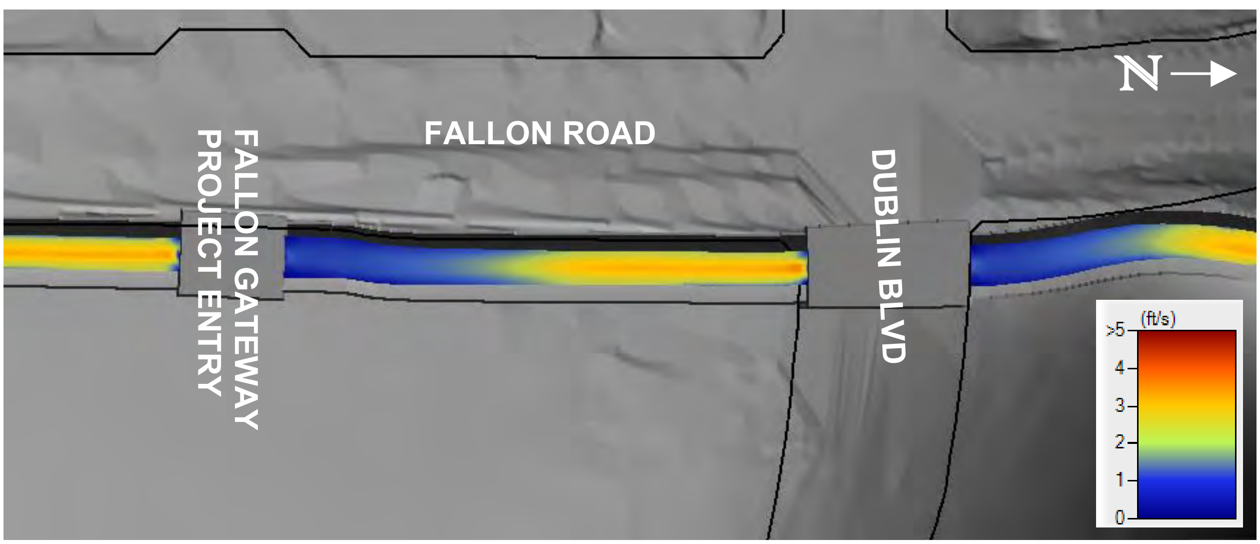
Downstream of Proposed Dublin Boulevard

- 3 foot base width
- 1H:1V side slopes
- 1 foot depth
- 15 feet of floodplain on both sides of the low flow channel
- 0.75% longitudinal slope

Using the proposed dimensions shown in Exhibits 2.2-1 and 2.2-2, and two 48-inch-diameter culverts at the proposed Dublin Boulevard and Fallon Gateway Project Entry alignment, the 100-year flow is contained within the proposed channel. Flood depths above the floodplain level are estimated to be between 0.4 and 0.5 foot during the 100-year flood event. The proposed channel alignment and typical cross sections are provided in Figure 1.

Velocities for the 100-year flow vary between 3 and 3.5 feet per second (fps) in the low flow channel, and between 1.5 and 3 fps along the floodplains, as shown in Exhibit 2.4-1. At the culvert inlets, velocities drop to between 0.5 and 1.0 fps due to backwater effects.

EXHIBIT 2.4-1: Velocity Heat Map for 100-year Flowrate



2.5 SEDIMENT TRANSPORT/EROSION

The proposed bank material will consist of on-site earth materials, which typically consists of sandy to silty clay. According to research published by the United States Army Corps of Engineers, which provides erosion threshold guidance for flood control channels, the allowable mean velocity for a channel consisting of grass-lined clay soil is approximately 8 feet per second.

Based on the results of the velocity analysis, it does not appear that excess erosion would occur in this reach based on the soil types. Sediment transport of fine sediments generally occurs as wash load during large storm events, and low flow channel velocities generally in the 2 to 3 fps would transport these small particle sizes based on our local experience. We therefore opine that sediment deposition should also not be a concern based on the velocity analysis.

Rip-rap protection should be placed at the inlets and outlets of the proposed 48-inch-diameter culverts to address contraction and expansion scour. Based on guidelines from the Georgia Stormwater Design Manual, we recommend constructing riprap aprons of a minimum of 20 linear feet downstream and upstream of the culvert installation. The rock riprap should extend laterally up to the 100-year water surface elevation. The aprons should be constructed of a 1.5-foot-thick Caltrans 200-lb riprap underlain by a 6-oz minimum filter fabric at both the inlet and outfall of the culvert. Rock removed from the channel may be used as an equivalent if it meets the 200-lb Caltrans specification for size, durability, and hardness.

3.0 OPERATION AND MAINTENANCE

Maintenance for the project will be performed by the Project Applicant pursuant to a Mitigation and Monitoring Plan and Management Plan (to be developed by the Project Applicant, and approved by regulatory agencies).

The following schedule for monitoring and maintenance is recommended. The schedule may be modified as needed when conditions change in order to fulfill the overall creek maintenance goals. Monitoring visits should be performed according to the following schedule:

TABLE 3.0-1: Monitoring Schedule

SCHEDULE	MONITORING TYPE
Annually in May	Channel and Bank Monitoring; Sediment Movement; Energy Dissipation Structures; Vegetation Performance; Longitudinal Profile; Debris Accumulation.
After any storm greater or equal to the 10-year rainfall event, as defined by Alameda criteria for the Dublin area (a storm event generating approximately 3.19-inches of rainfall in each 24-hour period).	Channel and Bank Monitoring; Energy Dissipation Structures; Sediment Movement; Vegetation Performance; Longitudinal Profile; Debris Accumulation.

The following table summarizes the monitoring tasks, which should be performed at each scheduled monitoring event.

TABLE 3.0-2: Monitoring Tasks

AREA	MONITORING TASK	PERFORMANCE STANDARD	REMEDIAL ACTIONS
Channel Performance and Longitudinal Profile	Monitor evidence of bed incision, which includes documenting any knickpoints/headcuts and the initiation and/or growth of gullies	The longitudinal profile of the creek system should remain fairly consistent, without excessive scour, erosion or deposition. The longitudinal slope should be maintained between outfall structures.	Any significant deviation in the channel slope should be reported and addressed by maintenance as necessary.
Bank Performance	The banks should be observed for obvious signs of vertical or horizontal displacements, seepage or erosion caused by high creek levels or levels in adjacent detention structures.	Significant displacement, seepage or erosion should not occur along the channel banks.	Any excessive slope displacement, seepage or erosion should be reported and addressed by maintenance as necessary. Both an engineering geologist and a geotechnical engineer should be consulted on significant bank repairs.
Rock Energy Dissipation Structures	Dissipation structures should be observed for structural integrity and stability including the extent of any erosion taking place around the edges of the rock aprons, as well as immediately downstream of the rock installations.	Structures should remain in the approximate locations and configurations originally constructed.	Any excessive slope displacement, seepage or erosion should be reported and addressed by maintenance as necessary. Both an engineering geologist and a geotechnical engineer should be consulted on significant bank repairs.
Sediment Movement	Monitor evidence of excessive deposition in channel including active channel depth to width ratios.	The channel width: depth ratio is to be monitored for changes that could affect the creek function.	Any excessive deposition or erosion in the creek channel causing channel width: depth ratio to change by more than 10 percent should be reported and addressed by maintenance as necessary. Geotechnical engineer should be consulted on significant channel repairs.
Vegetation Performance	Creek channel and banks should be monitored for obstructing vegetation.	No vegetation should obstruct flow in the creek areas.	Portions of vegetation that are obstructing channel flow should be trimmed or removed as necessary to allow creek function for conveying storm runoff at the direction of the project biologist.
Debris Accumulation	Creek channel and banks should be monitored for obstructing trash or debris.	No trash or debris should obstruct flow in the creek areas.	Trash and other undesirable debris obstructing flow should be removed from the creek areas.

4.0 CONCLUSIONS

It is our opinion that if the recommendations in this report are incorporated into the project design and implemented during construction, the impact of the erosional and sedimentation processes as well as flooding issues associated with Jordan Creek will be reduced. Moreover, the addition of floodplain terraces throughout the reach will enhance the biological value of wetland habitat in the Jordan Creek channel.

We recommend that an ENGEO representative observe all phases of the construction for conformance with our recommendations described herein.

5.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report is issued with the understanding that it is the responsibility of the owner to transmit the information and recommendations of this report to developers, contractors, buyers, architects, engineers, and designers for the project so that the necessary steps can be taken by the contractors and subcontractors to carry out such recommendations in the field. The conclusions and recommendations contained in this report are solely professional opinions.

The professional staff of ENGEO Incorporated strives to perform its services in a proper and professional manner with reasonable care and competence but is not infallible. There are risks of earth movement and property damages inherent in land development. We are unable to eliminate all risks; therefore, we are unable to guarantee or warrant the results of our work.

This report is based upon field and other conditions discovered at the time of preparation of ENGEO's work. This document must not be subject to unauthorized reuse, that is, reuse without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time. Actual field or other conditions will necessitate clarifications, adjustments, modifications, or other changes to ENGEO's work. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications, or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include on-site construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims, including, but not limited to claims arising from or resulting from the performance of such services by other persons or entities, and any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies, or other changes necessary to reflect changed field or other conditions.

SELECTED REFERENCES

Alameda County Flood Control & Water Conservation District. 2018. Alameda County Hydrology & Hydraulics Manual; 2018.

ENGEO. 2023. Hydrologic Water Availability Analysis, GH PacVest Property Mitigation Creek. Project No. 11134.000.004. September 7, 2023.

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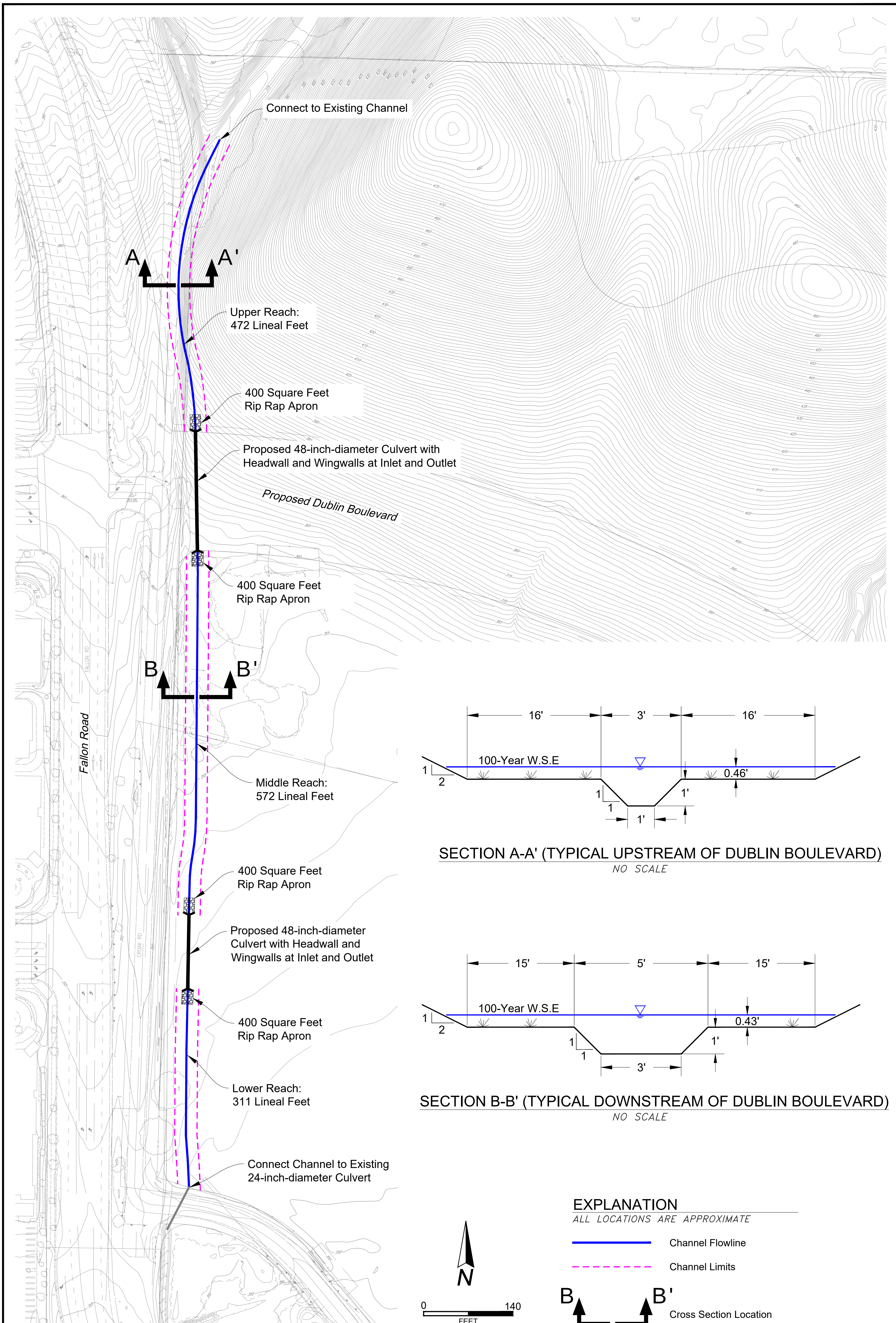
Ven Te Chow. 1959. Open-Channel Hydraulics; 1959.

FIGURE

FIGURE 1: CHANNEL ALIGNMENT AND CROSS SECTIONS

FILE PATH: G:\Drafting\PROJECTS\4663\466311007\Channel\466311007-Channel-1-1023.dwg SAVE DATE: 10/11/2023 11:04:39 AM SAVED BY: CHemming



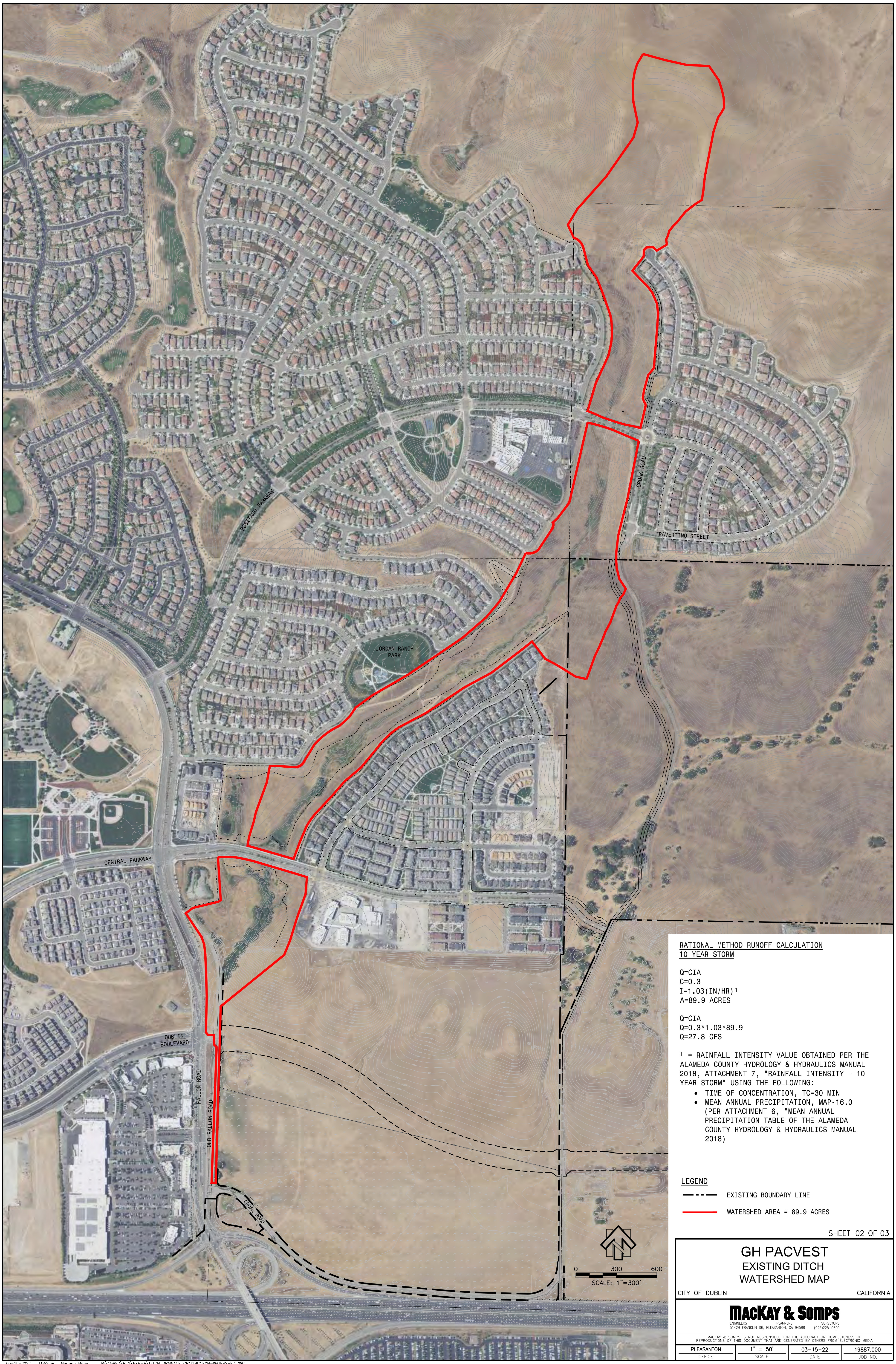
BASE MAP SOURCE: MACKAY & SOMPS, 2023

ENGEO Expect Excellence	CHANNEL ALIGNMENT AND CROSS SECTIONS JORDAN CREEK GEOMORPHIC BASIS OF DESIGN REPORT DUBLIN, CALIFORNIA	PROJECT NO.: 4663.110.007 SCALE: AS SHOWN DRAWN BY: CRH CHECKED BY: JDB	FIGURE NO. 1

ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

MACKAY & SOMPS, HYDROLOGIC ANALYSIS JORDAN CREEK WATERSHED



RATIONAL METHOD RUNOFF CALCULATION
10 YEAR STORM

Q=CIA
C=0.3
I=1.03(IN/HR)[1]
A=89.9 ACRES

Q=CIA
Q=0.3*1.03*89.9
Q=27.8 CFS

[1] = RAINFALL INTENSITY VALUE OBTAINED PER THE ALAMEDA COUNTY HYDROLOGY & HYDRAULICS MANUAL 2018, ATTACHMENT 7, "RAINFALL INTENSITY - 10 YEAR STORM" USING THE FOLLOWING:

- TIME OF CONCENTRATION, TC=30 MIN
- MEAN ANNUAL PRECIPITATION, MAP-16.0 (PER ATTACHMENT 6, "MEAN ANNUAL PRECIPITATION TABLE OF THE ALAMEDA COUNTY HYDROLOGY & HYDRAULICS MANUAL 2018)

LEGEND

EXISTING BOUNDARY LINE

WATERSHED AREA = 89.9 ACRES

SHEET 02 OF 03

GH PACVEST
EXISTING DITCH WATERSHED MAP

CITY OF DUBLIN CALIFORNIA

MACKAY & SOMPS
ENGINEERS PLANNERS SURVEYORS
5142B FRANKLIN DR, PLEASANTON, CA 94588 (925)225-0690

OFFICE	SCALE	DATE	JOB NO.
PLEASANTON	1" = 50'	03-15-22	19887.000

03-15-2022 11:52am Mariana Mena P:\19887\PLN\EXH-P\DITCH DRAINAGE GRADING\EXH-WATERSHED.DWG

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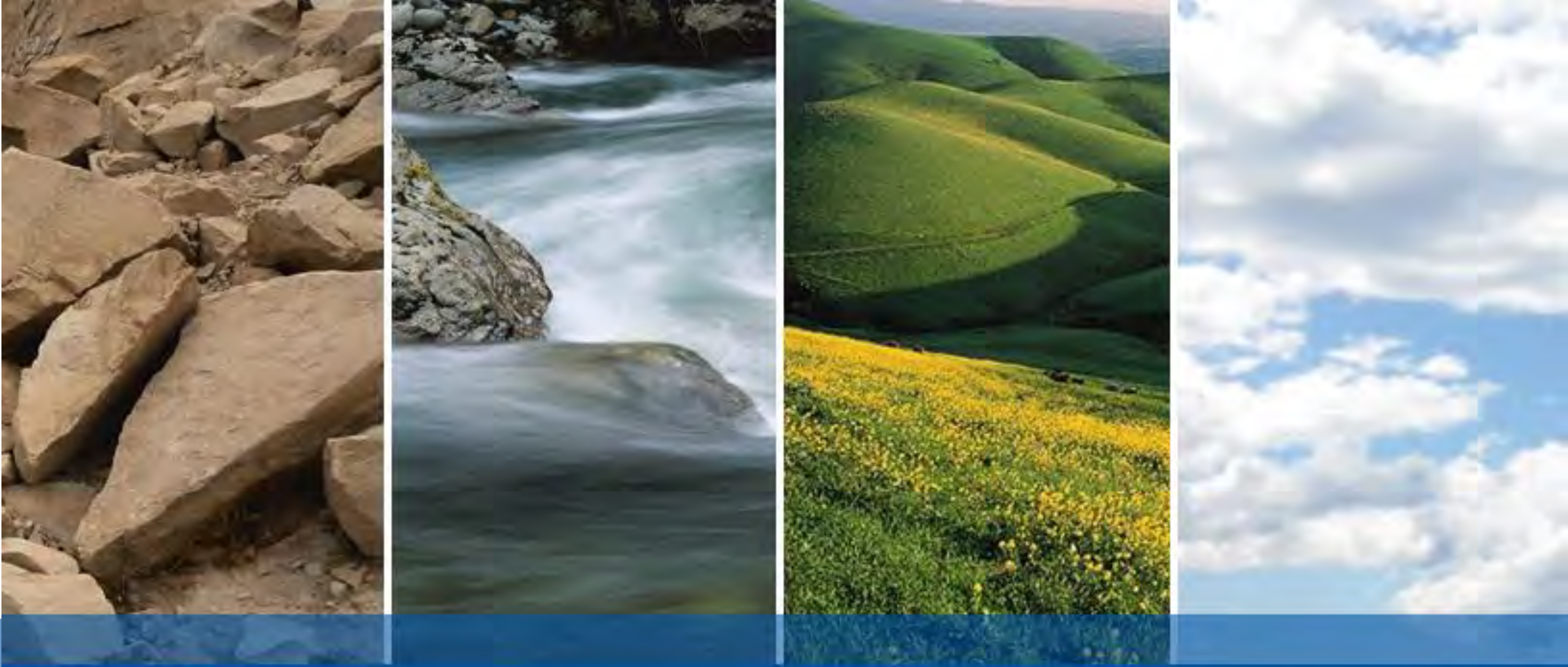
Appendix H
Preliminary Geotechnical Investigation



CHEN AND ANDERSON PROPERTIES
DUBLIN, CALIFORNIA

PRELIMINARY GEOTECHNICAL EXPLORATION

Submitted to
Ms. Yang Zhang
GH PacVest, LLC
3000 Executive Parkway, Suite 375
San Ramon, CA 94583

Prepared by
ENGEO Incorporated

January 23, 2017
Revised January 25, 2017

Project No.
4663.110.005 and 4663.110.006

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Project No.
4663.110.005
4663.110.006

January 23, 2017
Revised January 25, 2017

Ms. Yang Zhang
GH PacVest, LLC
3000 Executive Parkway, Suite 375
San Ramon, CA 94583

Subject: Chen and Anderson Properties
Dublin, California

PRELIMINARY GEOTECHNICAL EXPLORATION

Dear Ms. Zhang:

ENGEO prepared this preliminary geotechnical report for the Chen and Anderson Properties as outlined in our agreement dated December 15, 2016. We characterized the subsurface conditions at the site to provide the enclosed preliminary geotechnical considerations for planning and preliminary design of the project.

Our experience and that of our profession clearly indicate that the risk of costly design, construction, and maintenance problems can be significantly lowered by retaining the preliminary design geotechnical engineering firm to perform final design, review the project plans and specifications and provide geotechnical observation and testing services during construction. Please let us know when working drawings are nearing completion, and we will be glad to discuss these additional services with you.

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

ENGEO Incorporated

REGISTERED PROFESSIONAL ENGINEER
JAMES S. YANG
No. 83542
CIVIL
STATE OF CALIFORNIA

James S. Yang, PE

REGISTERED PROFESSIONAL ENGINEER
JOSEF TOOTLE
No. 2677
GEOTECHNICAL
STATE OF CALIFORNIA

Josef Tootle, GE

PROFESSIONAL GEOLOGIST
JACOB WHITE
No. 9111
STATE OF CALIFORNIA

Jacob White, PG

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1.0 INTRODUCTION

1.1 PURPOSE AND SCOPE

ENGEO prepared this preliminary geotechnical report for the initial planning process for development of the Chen and Anderson Properties in Dublin, California. We prepared this report as outlined in our agreement dated December 15, 2016. GH PacVest, LLC authorized ENGEO to conduct the following scope of services:

- Review of aerial photographs and published geologic literature
- Review of previous ENGEO investigations
- Subsurface field exploration
- Soil laboratory testing
- Data analysis and conclusions
- Report preparation

We understand that at this time a conceptual site plan is not available. We therefore reviewed the City of Dublin's Land Use Map, dated October 6, 2015, for general intended site use.

This report was prepared for the exclusive use of our client and their consultants for design of this project. In the event that any changes are made in the character, design or layout of the development, we must be contacted to review the conclusions and recommendations contained in this report to evaluate whether modifications are recommended. This document may not be reproduced in whole or in part by any means whatsoever, nor may it be quoted or excerpted without our express written consent.

1.2 PROJECT LOCATION

Figure 1 displays a Site Vicinity Map. The overall study area contains approximately 184 acres, with the Chen Property containing approximately 135 acres and the Anderson Property containing approximately 49 acres. The overall study area is located south of the Jordan Ranch development, north of Interstate 580, east of Fallon Road, and west of lightly developed or undeveloped parcels. The Chen and Anderson Properties are separated by a north-south section of Croak Road.

Figure 2 shows site boundaries, proposed land use based on the City of Dublin's Land Use Map, geologic mapping based on our field exploration activities, and our exploration locations. The majority of the overall study area is undeveloped and covered by seasonal vegetation. Several barn, shed, and dwelling structures, as well as unpaved roads, occupy the southwestern portion of the Anderson Property. At the time of our exploration, the Chen Property was being used for cattle grazing.

1.3 PROJECT DESCRIPTION

At this time, site development planning is in the preliminary stages. We anticipate that future development will include preparation of level building pads and roadways. Based on the current site topography, we anticipate that future site grading will include maximum cut depths of about 50 to 80 feet and maximum fill thicknesses of approximately 90 feet.

As shown in Figure 2, proposed land use for the Chen and Anderson Properties are as follows:

Chen Property

- General commercial
- Campus office
- Medium- to high-density residential
- Open space
- Parks/public recreation

Anderson Property

- General commercial
- Campus office
- Medium- to high-density residential
- Open space

We anticipate that buildings for commercial, campus office, and medium- to high-density residential will generally be between two to five stories in height, while structures within the open space and parks/public recreation area will be between one to two stories in height.

We also anticipate the future development will include construction of paved streets, parking, underground utilities, retaining walls, concrete flatwork, swimming pools, and detention basins.

Once the conceptual site plan is made available, we should revisit our preliminary conclusions and recommendations to confirm that they remain valid and/or provide supplemental recommendations as necessary.

2.0 FINDINGS

2.1 PREVIOUS FIELD EXPLORATION

We previously performed a preliminary geotechnical exploration for a larger study area that included the Chen and Anderson properties in 2003. As part of our 2003 exploration activities, we advanced two borings within the Chen Property to between 21½ and 36½ feet below ground surface. The approximate locations of the previous explorations are shown on Figure 2.

2.2 FIELD EXPLORATION

Our field exploration included performing 11 Cone Penetration Test (CPTs) at various locations throughout the overall study location. Seven CPTs were performed at the Chen Property and four CPTs were performed at the Anderson Property. We also performed geologic field mapping for the overall study location.

The location of our explorations shown on Figure 2 are approximate and were estimated using consumer-grade GPS equipment; the locations should be considered accurate only to the degree implied by the method used.

2.2.1 Cone Penetration Tests

We retained a CPT track rig to push the cone penetrometer to a maximum depths between 12 and 74 feet. The CPT has a 20-ton compression-type cone with a 15-square-centimeter (cm^2) base area, an apex angle of 60 degrees, and a friction sleeve with a surface area of 225 cm^2. The cone, connected with a series of rods, is pushed into the ground at a constant rate. Cone readings are taken at approximately 5-cm intervals with a penetration rate of 2 cm per second in accordance with ASTM D-5778. Measurements include the tip resistance to penetration of the cone (Qc), the resistance of the surface sleeve (Fs), and pore pressure (U). CPT logs are presented in Appendix A.

2.3 AERIAL PHOTOGRAPH REVIEW AND INTERPRETATION

As part of our study, we reviewed stereo-paired aerial photographs covering the site dating back to 1939. The purpose of the aerial photograph review was to observe geomorphic features indicative of landsliding and faulting and to supplement geologic reconnaissance mapping at the site. The results of our aerial photography interpretation were incorporated into the geologic mapping shown on Figure 2.

We also reviewed aerials available at www.historicaerials.com. By 1949, agricultural activities are visible on both the Chen and Anderson properties. Structures are visible within the Chen Property immediately east of the current Dublin Boulevard and Fallon Road intersection. Structures within the Anderson Property are visible east of the north-south portion of Croak Road. The drainage feature that borders the northwest boundary of the Anderson Property and enters the Chen Property appears channelized. By 1958, additional structures are visible at the southeastern corner of the Chen Property. By 1979, Interstate 580 is visible, Croak Road appears in its current alignment, and the drainage in the southern portion of the Chen Property appears to be infilled. Quarrying activities within the northern portion of the Anderson Property are visible by 1987, and the site generally appears in its current configuration by 1993.

3.0 GEOLOGY

3.1 REGIONAL GEOLOGIC SETTING

The study area is located in the Coast Ranges geomorphic province of California. The Coast Ranges are characterized by a series of northwest-trending valleys and mountain ranges. The bedrock in this region has been folded and faulted in a tectonic setting that is experiencing translational and compressional deformations of the earth's crust.

As shown on Figure 3, the hill front along the northern portion of the site is mapped by Graymer (1996) as underlain by Plio-Pleistocene Livermore Gravels or nonmarine sedimentary units of the Tassajara Formation (QTl). Bedrock bedding is shown by Graymer and Crane generally striking northwest and dipping steeply (85 degrees) to the southwest. At the base of slopes crossing the middle of the site, Graymer maps transitional slopes (mid-level terraces) as Pleistocene alluvial fan deposits and Holocene floodplain deposits further south extending into the valley portion of the site.

3.2 GEOLOGIC MAPPING

Surface geologic mapping based on photo review and site reconnaissance was performed as part of this study as depicted on Figure 2. Below are descriptions of the geologic units observed during mapping.

3.2.1 Artificial Fill (Qaf and Qaf2)

Artificial man-made fills were mapped in several portions of the site, predominately within the Anderson Parcel. Fills within the Anderson parcel (Qaf) are likely associated with quarry operations and existing structures, placed as stockpiles/spoils or underlying structures. As shown on Figure 2, a relatively narrow drainage crossing east-west within the Chen parcel appears to have been previously infilled. These fills are anticipated to consist of onsite material; however, organics content and presence of vegetative and/or construction debris is unknown.

The northern portion of the Chen parcel abuts the Jordan Ranch development. On Figure 2, an engineered fill slope is mapped in this vicinity (Qaf2). This fill slope is considered documented fill that has been moisture condition and compacted as part of site development.

3.2.2 Colluvium (Qc) and Surface soils

Based on our experience in the area, surface soils at the site are typically mantled with moderately expansive clayey soils derived from weathering of the underlying poorly indurated bedrock. The thickness of surficial soils is typically less than 4 feet on upland peaks and ridges.

Deposits of colluvium consist of transported surficial soils that have accumulated in the low-lying portions of the site such as swales and base of hillslopes. These deposits are identified on Figure 2 as colluvium (Qc). In general, the deposits of colluvium in site swales should is anticipated to range from 5 to 20 feet thick. Based on our previous work in the site vicinity, colluvial deposits at the site are likely overconsolidated and moderately compressible.

3.2.3 Alluvium (Qha and Qpa)

Alluvial deposits mapped at the site are divided into Holocene floodplain deposits (Qha) and Pleistocene fan deposits (Qpa), as shown on Figure 2. Pleistocene fan deposits at the site are formed at the mouth of drainages and appear as a mid-level terrace adjacent to the valley portion of the site. These deposits are anticipated to consist of generally stiff clays with interbedded sands, gravel and silts.

The Holocene flood plain deposits at the site make up the valley along the southern portion of the site. These deposits generally consist of fine-grained clays and silts intermixed with gravelly clays.

3.2.4 Tassajara Green Valley Group (Tgvt)

Bedrock exposures were observed within the northern portion of the Anderson Parcel. Quarry operations have exposed bedrock features that are depicted on Figure 2. The bedrock consists of interbedded terrestrial pebbly sandstone, siltstone and claystone. Sandstone beds may vary in strength do to cementation. Pebbly sandstones within the quarry site were observed to be poorly cemented; however, cemented sandstone beds are common within the (Tgvt) formation. From previous work in the area, including the adjacent Jordan Ranch Development, claystone beds are likely to have a moderate to high expansion potential. Bedding at the site was measured striking generally northwest and steeply dipping southwest from 72 to 77 degrees.

3.3 FAULTING AND SEISMICITY

The site is not located within a State of California Earthquake Fault Zone and no known active faults are mapped crossing the site. As shown on Figure 2, Figure 3 and Figure 6, a "blind" thrust fault trace is mapped by Crane (1995), Dibblee (1980) and Graymer (1996) crossing the property. This fault trace is not considered active by the State of California. According to Sawyer (1999), based on detailed creek drainage profiles, this feature may be a fold hinge scarp that has been accentuated by fluvial scour.

The site does lie within a seismically active region. Numerous small earthquakes occur every year in the San Francisco Bay Region, and larger earthquakes have been recorded and can be expected to occur in the future. Figure 4 shows the approximate locations of these faults and significant historic earthquakes recorded within the San Francisco Bay Region.

According to a search using the United States Geological Survey (USGS) 2008 National Seismic Hazard Maps spatial query, the nearest active fault is the Mount Diablo Thrust, which is located approximately 2 miles from the site. This fault is considered capable of a moment magnitude earthquake of 6.7. Other active faults are summarized in the table below:

TABLE 3.3-1: Active Faults Capable of Producing Significant Ground Shaking at the Site

FAULT NAME	DISTANCE FROM SITE (MILES)	MAXIMUM MOMENT MAGNITUDE*
Calaveras	4.8	7.0
Greenville Connected	7.1	7.0
Hayward-Rodgers Creek	11.4	7.3
Green Valley Connected	15.6	6.8
Great Valley	17.6	6.9
San Andreas	30.3	7.9

* Ellsworth

3.4 SURFACE CONDITIONS

Site topography consists of rolling, grass-covered hills generally increasing in elevation to the north. Site drainage is to the south, toward Arroyo Las Positas and the Livermore Valley. Most of the study area consists of open, undeveloped land with local improvements related to agricultural or residential use. These improvements include barns, sheds, and dwellings as well as unpaved roadways, driveways, and utilities.

We observed the following site features during our reconnaissance:

Chen Property

- A seasonal drainage swale runs along the western boundary of the site, and appears to terminate at the southwest corner of the site.

- A formerly unlined channelized drainage feature runs along the eastern boundary of the site. Approximately 1,000 feet from the southern border, the portion of the channelized drainage feature that runs east-west appears to be infilled.

- A graded slope separates the site from a portion of the Jordan Ranch development to the north.

- Overhead transmission lines run east-west roughly parallel with the base of the foothills and along the eastern border of the site.

Anderson Property

- Two stockpiles of soil, presumably from previous quarrying activities to the north of the site, are located to the north and east of the shed, barn, and dwelling structures. Unmaintained gravel roads and trees are also in the vicinity of the structures.

- An unmaintained dirt road provides access to the northern portion of the site, where quarrying activities have lowered grades by a maximum of approximately 80 to 90 feet. At the time of our exploration, we observed some areas of ponded water within the quarry site.

- Overhead transmission lines run along the southern border of the site.

Please refer to the Site Plan, Figure 2, for more information on site features.

3.5 SUBSURFACE CONDITIONS

Chen Property

- According to the soil type correlations, at 1-CPT1 through 1-CPT4, which were located at the northern portion of the site, the CPTs encountered varying thicknesses of stiff to very stiff silt, silty clay, clay, clayey silt, and sandy silt to the terminus depth of the explorations.

- According to the soil type correlations, at 1-CPT5 through 1-CPT7, which were located at the southern portion of the site, the CPTs encountered predominantly silt, with interbedded layers of clayey silt, sandy silt, silty sand, and sand up to two feet in thickness.

Anderson Property

- According to the soil type correlations, 1-CPT1 through 1-CPT3, which were located at the northern portion of the site, the CPTs encountered varying thicknesses of stiff to very stiff clayey silt, silt clay, and silt to the terminus depth of the explorations.

- According to the soil type correlations, 1-CPT4 predominantly encountered varying thicknesses of medium stiff-to-stiff clayey silt and silt, with interbedded layers of sandy silt, silty sand, and sand up to 4 feet in thickness.

3.6 GROUNDWATER CONDITIONS

We observed static groundwater in several of our subsurface explorations. We summarize our observations in the table below:

TABLE 3.6-1: Groundwater Observations

PROPERTY	EXPLORATION LOCATION	APPROX. DEPTH TO GROUNDWATER (FEET)
Chen	1-CPT4	26
	1-CPT5	15*
	1-CPT7	16½*
Anderson	1-CPT2	28

*Inferred from pore pressure dissipation test results

We did not observe static groundwater in the remaining subsurface explorations.

Fluctuations in the level of groundwater may occur due to variations in rainfall, irrigation practice, and other factors not evident at the time measurements were made.

3.7 LABORATORY TESTING

We performed laboratory tests on selected soil samples to evaluate their engineering properties. For this project, we performed plasticity index, grain size, hydrometer, and water-soluble sulfate testing. Laboratory data is included in Appendix B.

4.0 PRELIMINARY CONCLUSIONS

The primary geotechnical concerns that could affect development on the site are existing fill, expansive soil, compressible/heaving soils, and liquefaction-induced settlements. We summarize our conclusions below.

4.1 EXISTING FILL

Our field reconnaissance and aerial photography review indicate that portions of the site are underlain by artificial fill.

Artificial fills (non-engineered) fills can undergo excessive settlement, especially under new fill or building loads. Additionally, artificial fills may contain undesired vegetative debris and/or construction debris. We recommend that existing fills at the site be completely removed and free of debris prior to placement as moisture conditioned and recompacted engineered fill. Please refer to Figure 2 for areas that have been mapped as underlain by non-engineered fill.

4.2 EXPANSIVE SOIL

Throughout the site we observed potentially expansive lean clay and fat clay near the surface. Our laboratory testing indicates that these soils exhibit moderate to high shrink/swell potential with variations in moisture content.

Expansive soils change in volume with changes in moisture. They can shrink or swell and cause heaving and cracking of slabs-on-grade, pavements, and structures founded on shallow foundations. Building damage due to volume changes associated with expansive soils can be reduced by: (1) using a rigid mat foundation that is designed to resist the settlement and heave of expansive soil, (2) deepening the foundations to below the zone of moisture fluctuation, i.e. by using deep footings or drilled piers, and/or (3) using footings at normal shallow depths but bottomed on a layer of select fill having a low expansion potential.

In addition to the above considerations during design of foundations, successful performance of structures on expansive soils requires special attention during construction. It is imperative that exposed soils be kept moist prior to placement of concrete for foundation construction. It can be difficult to remoisturize clayey soils without excavation, moisture conditioning, and recompaction.

4.3 COMPRESSIBLE/HEAVING SOILS

While preliminary subsurface data developed for this report suggests that the alluvial and colluvial clays are relatively stiff and not highly compressible, the extent of planned fills are not known at this time. Large fill thicknesses can be expected to cause settlement of the underlying soil, as well as settlement within the fill itself due to its own weight. Alternatively, large cuts may subject the underlying soil to heaving.

Significant building loads may also induce settlement of the underlying soil. For planning purposes, we anticipate that structures that have an overall building load of 1.500 to 2,000 pounds per square feet (psf) would experience less than 2 inches of total settlement, and 1 inch of differential settlement over 50 feet due to load-induced settlement. For lighter structures with a maximum overall building load of less than 750 psf, we anticipate less than 1 inch of total settlement, and ½ inch of differential settlement over 50 feet due to load-induced settlement.

Compressibility/heaving should be re-evaluated once design cuts, fills, and building loads are available.

4.4 LANDSLIDES

Based on regional landslide mapping by Nilsen (1975) shown in Figure 5, and our site reconnaissance mapping and aerial photograph review, there are no known landslides within the site with the exception of over steepened slopes within the quarry (Figure 2). Sliding within the Anderson parcel quarry can be described as surficial sloughing of over steepened bedrock exposures generally 1 to 5 feet thick. Since no significant landsliding in the remaining portions of the site was found, the risk is considered low.

4.5 FLOODING

Based on site elevation and distance from water sources, flooding is not expected at the subject site; however, the Civil Engineer should review pertinent information relating to possible flood levels for the subject site based on final pad elevations and provide appropriate design measures for development of the project, if recommended.

4.6 SEISMIC HAZARDS

Potential seismic hazards resulting from a nearby moderate to major earthquake can generally be classified as primary and secondary. The primary effect is ground rupture, also called surface faulting. The common secondary seismic hazards include ground shaking, liquefaction, and ground lurching. The following sections present a discussion of these hazards as they apply to the site. Based on topographic and lithologic data, the risk of regional subsidence or uplift, lateral spreading, tsunamis, flooding or seiches is considered low to negligible at the site.

4.6.1 Ground Rupture

Since there are no known active faults crossing the property and the site is not located within an Earthquake Fault Special Study Zone, it is our opinion that ground rupture is unlikely.

4.6.2 Ground Shaking

An earthquake of moderate to high magnitude generated within [the San Francisco Bay] region could cause considerable ground shaking at the site, similar to that which has occurred in the past. To mitigate the shaking effects, structures should be designed using sound engineering judgment and the latest California Building Code (CBC) requirements, as a minimum. Seismic design provisions of current building codes generally prescribe minimum lateral forces, applied statically to the structure, combined with the gravity forces of dead-and-live loads. The code-prescribed lateral forces are generally considered to be substantially smaller than the comparable forces that would be associated with a major earthquake. Therefore, structures should be able to: (1) resist minor earthquakes without damage, (2) resist moderate earthquakes without structural damage but with some nonstructural damage, and (3) resist major earthquakes without collapse but with some structural as well as nonstructural damage. Conformance to the current building code recommendations does not constitute any kind of guarantee that significant structural damage would not occur in the event of a maximum magnitude earthquake; however, it is reasonable to expect that a well-designed and well-constructed structure will not collapse or cause loss of life in a major earthquake (SEAOC, 1996).

4.6.3 Liquefaction

We consider the conclusions within this section to be applicable to structures that are planned within the liquefaction hazard zones.

Soil liquefaction results from loss of strength during cyclic loading, such as imposed by earthquakes. Soils most susceptible to liquefaction are clean, loose, saturated, uniformly graded fine sands below the groundwater table. Empirical evidence indicates that low plasticity silt and clay are also potentially liquefiable, though this phenomenon is commonly referred to as cyclic softening; for the purpose of this report, we will refer to cyclic softening as liquefaction. When seismic ground shaking occurs, the soil is subjected to cyclic shear stresses that can cause excess hydrostatic pressures to develop.

Portions of both sites are located within a Zone of Required Investigation for liquefaction, as shown in Figure 7. We therefore advanced 1-CPT2, 1-CPT5, and 1-CPT6 within the mapped liquefaction zones.

1-CPT2, which is located at the northern portion of the Chen Property, predominantly encountered variable strata of silt, clay, silty clay, clayey silt, and sandy silt before transitioning to predominantly silt at approximately 21 feet bgs.

1-CPT5 and 1-CPT6, which are located at the southern portion of the overall study area, predominantly encountered silt, clayey silt, and sandy silt, with interbedded layers of sand and silty sand up to 3 feet thick.

We evaluated the CPTs for triggering of liquefaction using an I_c cut-off of 2.6; soil with an Ic greater than this value are assumed to not be susceptible to liquefaction at this site. The I_c value can be adjusted based on laboratory testing performed during a design-level study. In performing our analysis, we also assumed a design groundwater level of 20 feet below existing grade for 1-CPT2 and 15 feet below existing grade for 1-CPT5 and 1-CPT6. We used the mapped maximum considered earthquake (MCE) geometric mean peak ground acceleration (PGA_M) of 0.71g based on the 2013 California Building Code. We assumed a moment magnitude of 6.6 for our analyses to represent ground shaking on the controlling fault: the Mount Diablo Thrust fault zone.

We utilized the software package CLiq version 1.7.6.34 by GeoLogismiki Geotechnical Software to evaluate liquefaction susceptibility from the CPT data. We performed our analysis using the methods outlined by Boulanger and Idriss (2014).

The results of our analyses are presented in Appendix C, and estimated liquefaction-induced settlements are summarized below:

TABLE 4.6.3-1: Summary of Liquefaction-Induced Settlement

PROPERTY	EXPLORATION LOCATION	SETTLEMENT (inches)
Chen	1-CPT2	4
	1-CPT5	3½
	1-CPT6	1½
	1-CPT7	4¼

To address liquefaction-induced settlement, we recommend on a preliminary basis that improvements at the site include:

- Founding buildings on relatively stiff foundations designed for a differential settlement of 2¼ inches of differential settlement over a distance of 50 feet due to liquefaction settlement. In our experience, since liquefaction is associated with the extreme MCE-level event, structural engineers typically design foundations allowing a larger amount of architectural distress when performing their design.

- Providing flexible connections for building utilities that allow for 2¼ inches of vertical movement without breaking.

- Utilities on the project should be designed with either flexible materials or with flexible joints that allow the utility line to move at least 1½ inches over a distance of 50 feet without breaking.

Since this was a preliminary geotechnical exploration, we did not collect samples at depth for laboratory testing. During further design-level studies, we anticipate collecting samples at depth to perform additional laboratory tests. Based on laboratory testing, the I_c cut-off may be adjusted. We therefore analyzed the CPTs assuming an I_c cut-off of 2.5, and consequently found that 1-CPT2, 1-CPT5, and 1-CPT6 within the Chen Property would have a maximum total liquefaction-induced settlement of 1¾ inches. The corresponding differential settlements considered for design would be less than 1 inch. We therefore recommend that design-level studies incorporate a budget for laboratory testing at depth, which could result in significant cost savings for the overall project.

4.6.4 Ground Lurching

Ground lurching is a result of the rolling motion imparted to the ground surface during energy released by an earthquake. Such rolling motion can cause ground cracks to form in weaker soils.

The potential for the formation of these cracks is considered greater at contacts between deep alluvium and bedrock. Such an occurrence is possible at the site as in other locations in the Bay Area region.

4.7 SOIL CORROSION POTENTIAL

As part of this study, we tested near-surface soil samples for determination of water-soluble sulfates. The results are included in Appendix B and summarized in the table below.

TABLE 4.7-1: Corrosivity Test Results

PROPERTY	SAMPLE LOCATION	DEPTH	SULFATE (% by mass)*
Chen	1-CPT5	Surface	ND
	1-CPT6	Surface	ND

* ASTM C1580

The 2016 CBC references the 2014 American Concrete Institute Manual, ACI 318-14, Chapter 19, Sections 19.3.1 for structural concrete requirements. ACI Table 19.3.1.1 provides the following exposure categories and classes, and concrete requirements in contact with soil based upon the exposure risk.

TABLE 4.7-2: ACI Table 4.2.1: Exposure Categories and Classes

CATEGORY	CLASS	CONDITION	
F Freezing and thawing	F0	Concrete not exposed to freezing-and-thawing cycles	
	F1	Concrete exposed to freezing-and-thawing cycles and occasional exposure to moisture	
	F2	Concrete exposed to freezing-and-thawing cycles and in continuous contact with moisture	
	F3	Concrete exposed to freezing-and-thawing cycles and in continuous contact with moisture and exposed to deicing chemicals	
		WATER- SOLUBLE SULFATE IN SOIL % BY MASS*	**DISSOLVED SULFATE IN WATER MG/KG (PPM)****
S Sulfate	S0	$SO_4 < 0.10$	$SO_4 < 150$
	S1	$0.10 \leq SO_4 < 0.20$	$150 \leq SO_4 \leq 1{,}500$ seawater
	S2	$0.20 \leq SO_4 \leq 2.00$	$1{,}500 \leq SO_4 \leq 10{,}000$
	S3	$SO_4 > 2.00$	$SO_4 > 10{,}000$
		CONDITION	
W In contact with water	W0	Concrete dry in service. Concrete in contact with water and low permeability is not required.	
	W1	Concrete in contact with water where low permeability is required.	
C Corrosion protection of reinforcement	C0	Concrete dry or protected from moisture	
	C1	Concrete exposed to moisture but not to an external sources of chlorides	
	C2	Concrete exposed to moisture and an external source of chlorides from deicing chemicals, salt, brackish water, seawater, or spray from these sources	

* Percent sulfate by mass in soil determined by ASTM C1580
** Concentration of dissolved sulfates in water in ppm determined by ASTM D516 or ASTM D4130

Considering a S0 sulfate exposure, there is no requirement for cement type or water-cement ratio, however, a minimum concrete compressive strength of 2,500 psi is specified by the building code. It should be noted, however, that the structural engineering design requirements for concrete may result in more stringent concrete specifications.

If desired to investigate this further, we recommend a corrosion consultant be retained to evaluate if specific corrosion recommendations are advised for the project.

4.8 EXCAVATABILITY

Based on our experience in the site vicinity and bedrock exposures within the quarry, we anticipate that conventional grading equipment, such as a D-8 dozer, will likely be able to rip bedrock materials. Excavatability should be reevaluated during design level explorations.

4.9 STATIC AND PERCHED GROUNDWATER

It does not appear that the static groundwater level beneath the site is likely to affect the proposed development. However, perched water can:

1. Impede grading activities.

2. Cause moisture damage to sensitive floor coverings.

3. Transmit moisture vapor through slabs causing excessive mold/mildew build-up, fogging of windows, and damage to computers and other sensitive equipment.

4. Cause premature pavement failure if hydrostatic pressures build up beneath the section.

4.10 2016 CBC SEISMIC DESIGN PARAMETERS

The 2016 CBC utilizes design criteria set forth in the 2010 ASCE 7 Standard. Based on the subsurface conditions encountered, we characterized the site as Site Class D in accordance with the 2016 CBC. We provide the 2016 CBC seismic design parameters in tables below, which include design spectral response acceleration parameters based on the mapped Risk-Targeted Maximum Considered Earthquake (MCE_R) spectral response acceleration parameters.

Due to the varying geologic conditions at the site, we classify the northern portions of both the Chen and Anderson Properties as Site Class C, and the southern portions as Site Class D.

TABLE 4.10-1: 2016 CBC Seismic Design Parameters for Chen Property

PARAMETER	VALUE	
Site Class	C*	D**
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	1.927	1.871
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.618	0.606
Site Coefficient, F_A	1.0	1.0
Site Coefficient, F_V	1.3	1.5
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.927	1.871

PARAMETER	VALUE	
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	0.804	0.909
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	1.285	1.247
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.536	0.606
Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration, PGA (g)	0.720	0.700
Site Coefficient, F_{PGA}	1.0	1.0
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.720	0.700
Long period transition-period, T_L	8 sec	8 sec

*Latitude: 37.70745, -121.84612
**Latitude: 37.70253, -121.84606

TABLE 4.10-2: 2016 CBC Seismic Design Parameters for Anderson Property

PARAMETER	VALUE	
Site Class	C*	D**
Mapped MCE_R Spectral Response Acceleration at Short Periods, S_S (g)	1.956	1.905
Mapped MCE_R Spectral Response Acceleration at 1-second Period, S_1 (g)	0.625	0.610
Site Coefficient, F_A	1.0	1.0
Site Coefficient, F_V	1.3	1.5
MCE_R Spectral Response Acceleration at Short Periods, S_{MS} (g)	1.956	1.905
MCE_R Spectral Response Acceleration at 1-second Period, S_{M1} (g)	0.813	0.915
Design Spectral Response Acceleration at Short Periods, S_{DS} (g)	1.304	1.270
Design Spectral Response Acceleration at 1-second Period, S_{D1} (g)	0.542	0.610
Mapped MCE Geometric Mean (MCE_G) Peak Ground Acceleration, PGA (g)	0.731	0.712
Site Coefficient, F_{PGA}	1.0	1.0
MCE_G Peak Ground Acceleration adjusted for Site Class effects, PGA_M (g)	0.731	0.712
Long period transition-period, T_L	8 sec	8 sec

*Latitude: 37.70651, -121.84016
**Latitude: 37.70248, -121.84008

5.0 EARTHWORK RECOMMENDATIONS

5.1 GENERAL SITE CLEARING

Areas to be developed should be cleared of surface and subsurface deleterious materials, including existing building foundations, slabs, buried utility and irrigation lines, pavements, debris, and designated trees, shrubs, and associated roots. Excavations should be cleaned and backfilled with suitable material as compacted engineered fill.

Following clearing, strip the site to remove surface organic materials. Strip organics from the ground surface to a depth of at least 2 to 3 inches below the surface. Remove strippings from the site or, if considered suitable by the landscape architect and owner, use them in landscape fill.

It may also be feasible to mulch organics in place, depending on the amount and type of vegetation present at the time of grading as well as the proposed mulching method. If desired, ENGEO can evaluate site vegetation at the time of grading to assess the feasibility of mulching organics in place.

5.2 ACCEPTABLE FILL

Onsite soil and rock material is suitable as fill material provided it is processed to remove concentrations of organic material, debris, and particles greater than 8 inches in maximum dimension. On a preliminary basis, onsite soils compacted as engineered fill should be compacted to between 87 and 92 percent relative compaction (RC) at 5 percent over optimum moisture content in the upper 5 feet below finished grade. Below 5 feet of finished grade, onsite soils compacted as engineered fill should be compacted to a minimum of 90 percent RC at 4 percent over optimum moisture content.

Imported fill materials should meet the above requirements and have a plasticity index less than 12, and at least 20 percent passing the No. 200 sieve.

5.3 SLOPES

5.3.1 Gradients

For planning purposes, major graded slopes should generally be inclined at 3:1 (horizontal:vertical). If desired, slopes can locally be inclined as steep as 2:1 between pads or at other locations to facilitate project land planning. However, slopes steeper than 3:1 should be evaluated on a case-by-case basis, so that appropriate geotechnical design recommendations can be provided.

Depending on slope height and local conditions, construction of slopes steeper than 3:1 (horizontal:vertical) could require selective grading with granular materials or reinforcement with geogrid.

5.3.2 Fill Placed on Existing Slopes

We recommend keying and benching where fills are placed on original grade with a gradient of 6:1 or steeper.

Benches should be cut into original grade after the key has been nearly filled and compacted as engineered fill. Benches should be constructed into original slope grade as filling proceeds to remove loose soil/rock.

5.4 REMEDIAL GRADING PLANS

Due to the complex geology and hillside topography, we recommend that ENGEO be retained to prepare remedial grading plans for this project. This is important to clarify our geotechnical recommendations related to keyways, benches, cut/fill transition subexcavations, and subdrains. In preparing these plans, we intend to overlay the grading plans with graphic representations of our grading and subsurface drainage recommendations presented in this report. This allows the unique hillside geotechnical recommendations to be clearly displayed on the grading plans. This can assist in obtaining more accurate earthwork bids as well as clarifying the geotechnical recommendations as they apply to the final grading plan.

6.0 PRELIMINARY FOUNDATION RECOMMENDATIONS

For the above-discussed geotechnical hazards, the foundation systems for proposed structures may vary from shallow foundations consisting of conventional footings and post-tensioned (PT) mat slabs designed to withstand total and differential settlement, to deep foundations consisting of driven piles where settlements or site conditions exceed practical mitigation techniques. Ground improvement, such as drilled displacement columns may be necessary to reduce total and differential settlements to tolerable levels for shallow foundation performance depending on the building's tolerance for settlement.

At this time, we opine that it is feasible to use shallow foundations for lightly- to moderately loaded structures that have a total building load of less than 2,000 psf. We anticipate that lightly- to moderately loaded residential structures may be founded on post-tensioned mat foundations, and moderately loaded commercial and retail structures may be founded on conventional footings and slab-on-grade.

For planning purposes, a maximum allowable bearing pressure of 2,500 psf for dead-plus-live loads may be used for footings. The bearing capacity can be increased by one-third for the short-term effects of wind or seismic loading. Minimum depths for footings should be 2 feet below lowest adjacent pad grade.

As mentioned above, the foundations for structures with an overall building load of less than 800 psf should be able to tolerate up to 1 inch of total settlement due to static loading, and up to 4¼ inches of settlement due to liquefaction. Foundations for structures with an overall building load of approximately 1,500 to 2,000 psf should be able to tolerate up to 2 inches of settlement due to static loading from the building, and up to 4¼ inches of settlement due to liquefaction. The differential settlement should be assumed to be approximately half of the total settlement over a distance of 50 feet.

While liquefaction settlement should be added to the static settlement for the evaluation of seismic performance, the designer may wish to consider a larger amount of allowable architectural distress of the building under the settlement from liquefaction than from static loading. Further, a design-level study should collect samples at depth to determine a site-specific I_c cut-off, which may be less than the I_c cut-off of 2.6 that was used for this preliminary report.

If differential settlement is considered excessive for the planned buildings, mitigation would likely need to be considered. We offer the following mitigation options in order of likely cost efficiency:

- Structural mat foundation designed to tolerate the effects of differential settlement. The thickness of a structural mat would be dependent on required end use, building geometry, and structural design.

- Drilled displacement columns under column and wall footings. For planning purposes, drilled displacement columns could be assumed to be 40 feet deep to make foundation settlement from liquefaction nominal.

- Driven, precast, prestressed concrete piles. For planning purposes, we recommend assuming 60-foot-long, 14-inch-square piles for an allowable capacity of approximately 50 kips. This alternative would likely be the most costly alternative but would provide the least amount of potential settlement.

In summary, depending on the tolerance of the buildings and intended building use, it may be feasible to found some or all of the buildings on conventional shallow foundations such as post-tensioned mat foundations and spread footings with slabs-on-grade.

7.0 SLABS-ON-GRADE

7.1 INTERIOR CONCRETE FLOOR SLABS

7.1.1 Non-Expansive Fill

Due to the high expansion potential of the near-surface soils, we anticipate that interior floor slabs will be supported on non-expansive fill to reduce the likelihood of slab damage from heave or shrinkage. For a conventional 6-inch-thick slab, we anticipate between 18 to 24 inches of non-expansive fill.

7.2 EXTERIOR FLATWORK

Exterior flatwork includes items such as concrete sidewalks, steps, and outdoor courtyards exposed to foot traffic only. Based on the City of Dublin Standard Plan, exterior flatwork should have a minimum section of 4 inches of concrete over 4 inches of aggregate base.

8.0 PRELIMINARY PAVEMENT DESIGN

8.1 FLEXIBLE PAVEMENTS

Based on our experience in the area, we anticipate that R-value of the onsite soils will be 5 or less. Using estimated traffic indices for various pavement loading requirements, we developed the following recommended pavement sections using Topic 633 of the Caltrans Highway Design Manual (including the asphalt factor of safety), presented in the table below.

TABLE 8.1-1: Recommended Asphalt Concrete Pavement Sections

TRAFFIC INDEX	SECTION	
	ASPHALT CONCRETE (INCHES)	CLASS 2 AGGREGATE BASE (INCHES)
5	3	12
6	3.5	13
7	4	16
8	5	18

The civil engineer should determine the appropriate traffic indices based on the estimated traffic loads and frequencies.

8.2 RIGID PAVEMENTS

Final design of rigid pavement sections, and accompanying reinforcement, should be performed based on estimated traffic loads and frequencies. We anticipate the following minimum design sections for rigid pavements:

- Use a minimum section of 4 to 6 inches of Portland Cement concrete over 6 to 10 inches of Caltrans Class 2 Aggregate Base.
- Concrete pavement should have a minimum 28-day compressive strength of 3,500 psi.
- Provide minimum control joint spacing in accordance with Portland Cement Association guidelines.

9.0 FUTURE DESIGN-LEVEL STUDIES

Once the conceptual development layout has been determined and building types have been selected, further exploration will be necessary to verify that the geotechnical conditions are relatively consistent across the site and to develop design recommendations for site development.

10.0 LIMITATIONS AND UNIFORMITY OF CONDITIONS

This report presents preliminary geotechnical recommendations for planning of the improvements discussed in Section 1.3 for the Chen and Anderson Properties. If changes occur in the nature or design of the project, we should be allowed to review this report and provide additional recommendations, if any. It is the responsibility of the owner to transmit the information and preliminary recommendations of this report to the appropriate organizations or people involved in planning of the project, including but not limited to developers, owners, buyers, architects, engineers, and designers. The preliminary conclusions and recommendations contained in this report are solely professional opinions and are valid for a period of no more than 2 years from the date of report issuance. In addition, the preliminary conclusions and recommendations are subject to revision following completion of a design level exploration and geotechnical analysis.

We strived to perform our professional services in accordance with generally accepted geotechnical engineering principles and practices currently employed in the area; no warranty is expressed or implied. There are risks of earth movement and property damages inherent in building on or with earth materials. We are unable to eliminate all risks or provide insurance; therefore, we are unable to guarantee or warrant the results of our services.

This report is based upon field and other conditions discovered at the time of report preparation. We developed this report with limited subsurface exploration data. We assumed that our subsurface exploration data is representative of the actual subsurface conditions across the site. Considering possible underground variability of soil, rock, stockpiled material, and groundwater, additional costs may be required to complete the project. We recommend that the owner establish a contingency fund to cover such costs. If unexpected conditions are encountered, notify ENGEO immediately to review these conditions and provide additional and/or modified recommendations, as necessary.

Our services did not include excavation sloping or shoring, soil volume change factors, flood potential, or a geohazard exploration. In addition, our geotechnical exploration did not include work to determine the existence of possible hazardous materials. If any hazardous materials are encountered during construction, notify the proper regulatory officials immediately.

This document must not be subject to unauthorized reuse, that is, reusing without written authorization of ENGEO. Such authorization is essential because it requires ENGEO to evaluate the document's applicability given new circumstances, not the least of which is passage of time.

Actual field or other conditions will necessitate clarifications, adjustments, modifications or other changes to ENGEO's documents. Therefore, ENGEO must be engaged to prepare the necessary clarifications, adjustments, modifications or other changes before construction activities commence or further activity proceeds. If ENGEO's scope of services does not include onsite construction observation, or if other persons or entities are retained to provide such services, ENGEO cannot be held responsible for any or all claims arising from or resulting from the performance of such services by other persons or entities, and from any or all claims arising from or resulting from clarifications, adjustments, modifications, discrepancies or other changes necessary to reflect changed field or other conditions.

SELECTED REFERENCES

Boulanger, R.W. and Idriss, I.M., 2014, CPT and SPT Based Liquefaction Triggering Procedures, Report No. UCD/CGM-14/01.

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Dibblee, T.W. Jr., 1980, Preliminary Geologic Map of the Livermore Quadrangle, Alameda and Contra Costa Counties, California, Open File Report 80-533.

Graymer, R.W., Jones, D.L., and Brabb, E.E., 1994, Preliminary Geologic Map Emphasizing Bedrock Formations in Alameda County, California: Open-File Report 96-252.

Hart, E.W., and Bryant, W.A., 1997, Fault rupture hazard in California: Alquist-Priolo earthquake fault zoning act with index to earthquake fault zone maps: California Division of Mines and Geology Special Publication 42.

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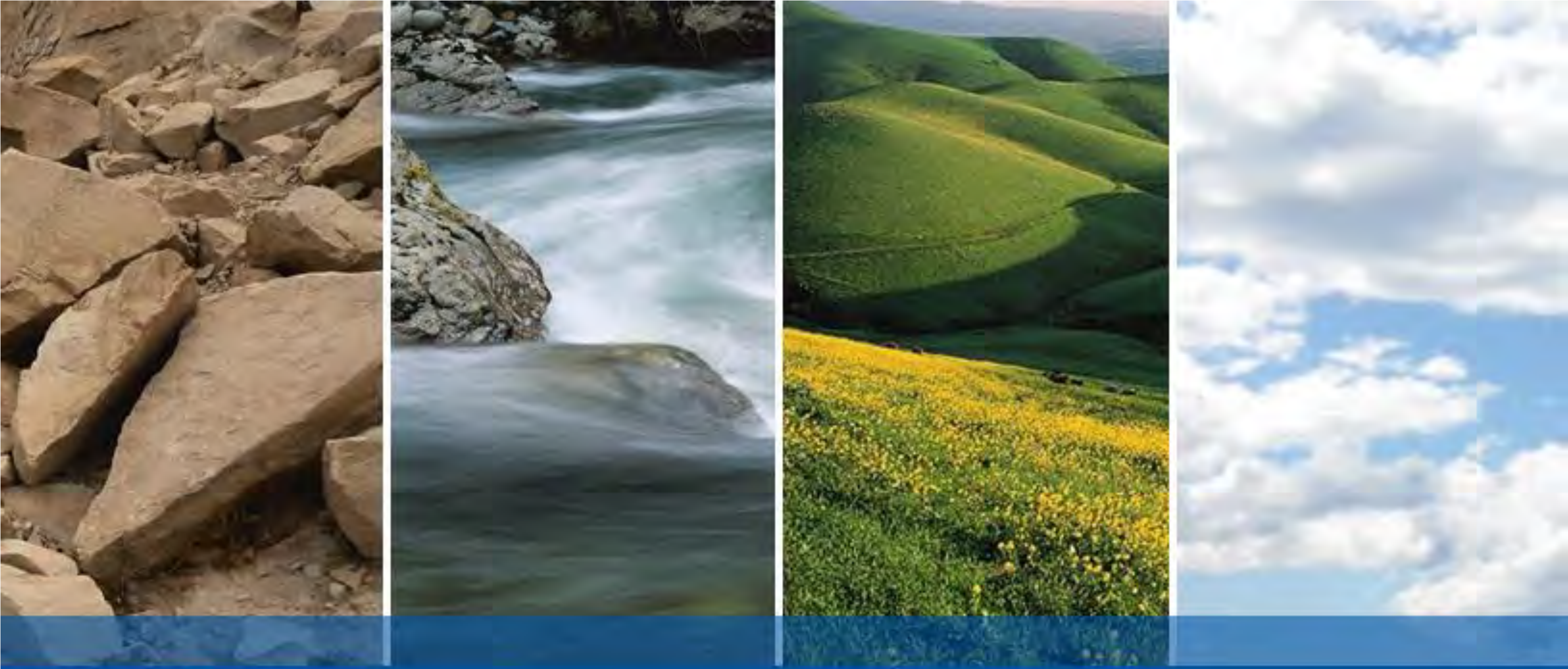
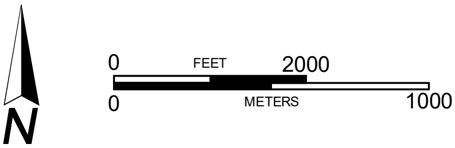
SEAOC; Recommended Lateral Force Requirements and Commentary; 1996.



FIGURES



BASE MAP SOURCE: UNKNOWN

ENGEO Expect Excellence	VICINITY MAP CHEN AND ANDERSON PROPERTY DUBLIN, CALIFORNIA	PROJECT NO.: 4663.110.006 SCALE: AS SHOWN DRAWN BY: LL / CHECKED BY: JSY	FIGURE NO. 1

G:\Drafting\DRAFTING2_Dwg\4663\110\GEX\4663110006-GEX-FIG1-VICMAP-0117.dwg Plot Date:1-24-17 llee

ORIGINAL FIGURE PRINTED IN COLOR

EXPLANATION

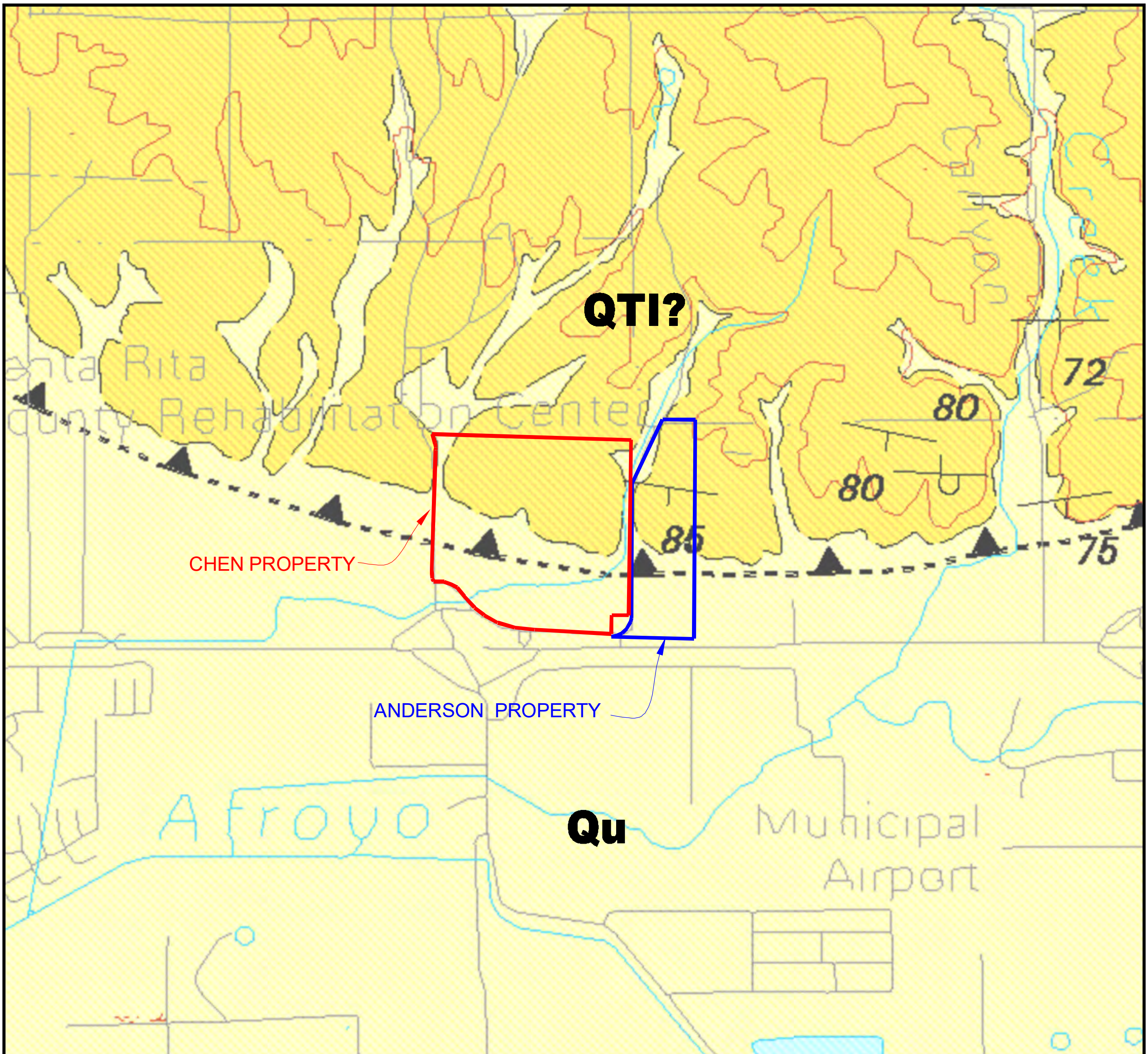
ALL LOCATIONS ARE APPROXIMATE

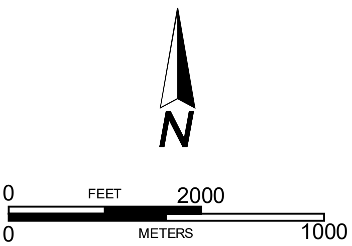
1-CPT7	CHEN PROPERTY CONE PENETRATION TEST (ENGEO, 2016)
1-CPT4	ANDERSON PROPERTY CONE PENTRATION TEST (ENGEO, 2016)
B-12	BORING (ENGEO, 2002)
	GEOLOGIC CONTACT
?	BLIND THRUST FAULT (MAPPED BY CRANE)
Qaf	FILL AS SPOILS OR STOCK PILE
Qaf2	ENGINEERED FILL AS PART OF ADJACENT DEVELOPMENT
Qc	COLLUVIUM
Qha	HOLOCENE ALLUVIUM
Qpa	PLEISTOCENE ALLUVIUM
Tgvt	TASSAJARA GREEN VALLEY GROUP FORMATION
	STRIKE AND DIP OF BEDDING, INCLINED
	STRIKE AND DIP OF JOINT
	LANDSLIDE FLOW DIRECTION
	GENERAL COMMERCIAL
	GENERAL COMMERCIAL/CAMPUS OFFICE
	OPEN SPACE
	PARKS/PUBLIC RECREATION
	MEDIUM-HIGH DENSITY RESIDENTIAL

BASE MAP SOURCE: GOOGLE EARTH PRO MAPPING SERVICE AND CITY OF DUBLIN LAND USE PLAN

ENGEO Expect Excellence	SITE PLAN CHEN AND ANDERSON PROPERTY DUBLIN, CALIFORNIA	PROJECT NO.: 4663.110.006 SCALE: AS SHOWN DRAWN BY: LL CHECKED BY: JSY	FIGURE NO. 2

ORIGINAL FIGURE PRINTED IN COLOR





EXPLANATION

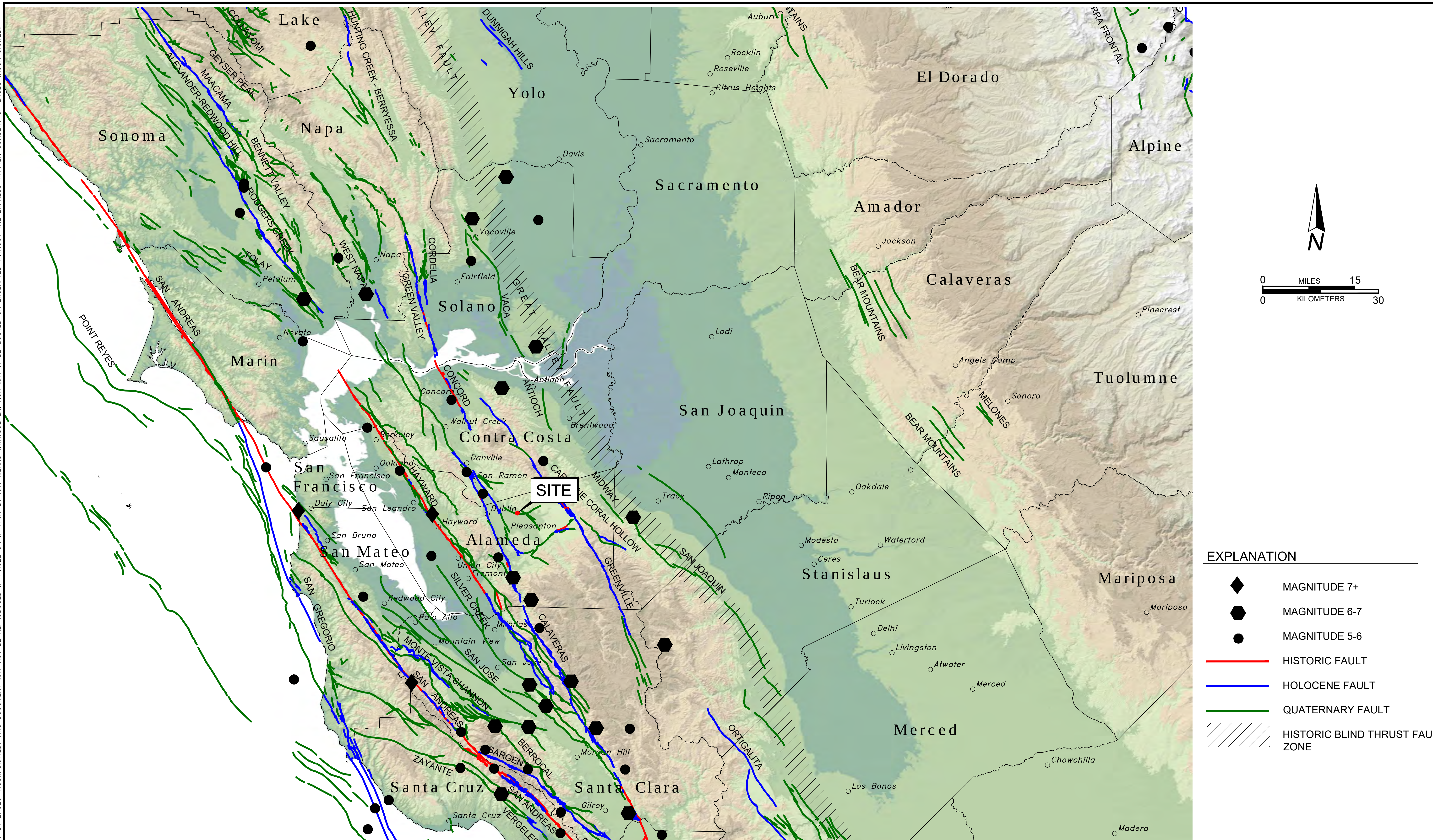
Qu	ALLUVIAL FAN DEPOSITS (HOLOCENE)
QTl	LIVERMORE GRAVELS (PLEISTOCENE AND/OR PLIOCENE)

BASE MAP SOURCE: GRAYMER BEDROCK MAP, 1996

ENGEO Expect Excellence	REGIONAL GEOLOGIC MAP-GRAYMER CHEN AND ANDERSON PROPERTY DUBLIN, CALIFORNIA	PROJECT NO.: 4663.110.006		FIGURE NO. 3
		SCALE: AS SHOWN		
		DRAWN BY: LL	CHECKED BY: JSY	

G:\Drafting\DRAFTING2_Dwg\4663\110\GEX\4663110006-GEX-FIG3-GEOLMAP-0117.dwg Plot Date:1-24-17 llee

ORIGINAL FIGURE PRINTED IN COLOR



BASE MAP SOURCE:
COLOR HILLSHADE IMAGE BASED ON THE NATIONAL ELEVATION DATASET (NED) AT 30 METER RESOLUTION
U.S.G.S. QUATERNARY FAULT DATABASE, NOVEMBER, 2010
U.S.G.S. HISTORIC EARTHQUAKE DATABASE (1800–2000)

BASE MAP SOURCE: UNKNOWN

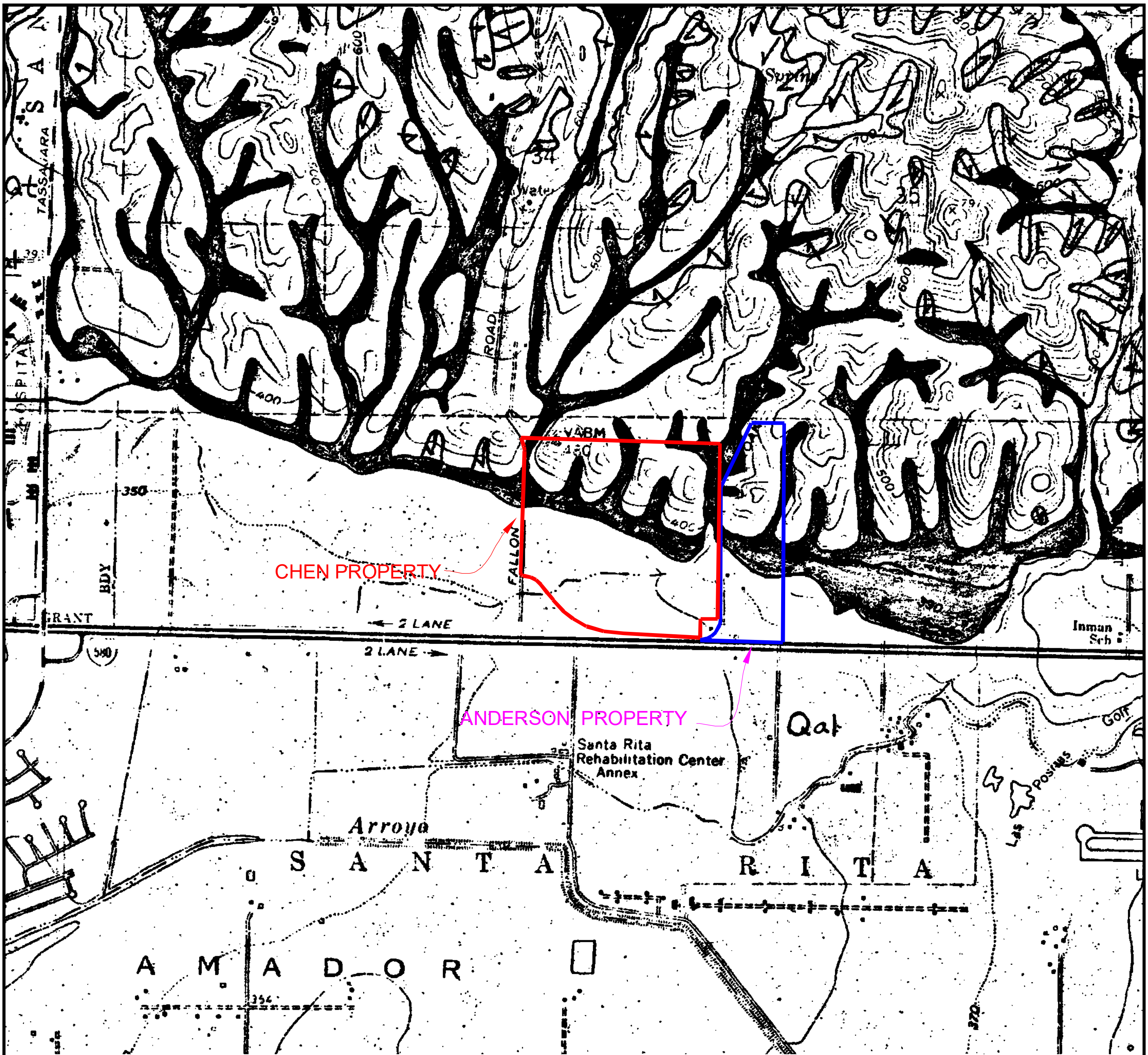
ENGEO — Expect Excellence —

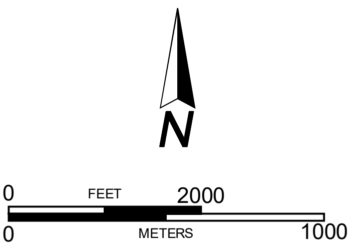
REGIONAL FAULTING AND SEISMICITY
CHEN AND ANDERSON PROPERTY
DUBLIN, CALIFORNIA

PROJECT NO.: 4663.110.006		FIGURE NO. 4
SCALE: AS SHOWN		
DRAWN BY: LL	CHECKED BY: JSY	

G:\Drafting\DRAFTING2_Dwg\4663\110\GEX\4663110006-GEX-FIG4-FAULTMAP-0117.dwg Plot Date:1-18-17 llee

ORIGINAL FIGURE PRINTED IN COLOR





EXPLANATION

(landslide symbol)	LANDSLIDE DEPOSIT. ARROWS INDICATE GENERAL DIRECTION OF DOWNSLOPE MOVEMENT. QUERIED WHERE UNCERTAIN
Qal	ALLUVIAL DEPOSIT
Qt	ALLUVIAL TERRACE DEPOSIT. QUERIED WHERE UNCERTAIN
(solid black)	COLLUVIAL DEPOSIT AND/OR SMALL ALLUVIAL FAN DEPOSIT
Qaf	ARTIFICIAL FILL
(blank box)	BEDROCK. QUERIED WHERE IDENTIFICATION UNCERTAIN
(quarry symbol)	QUARRY OR GRAVEL PIT

BASE MAP SOURCE: NILSEN, 1975

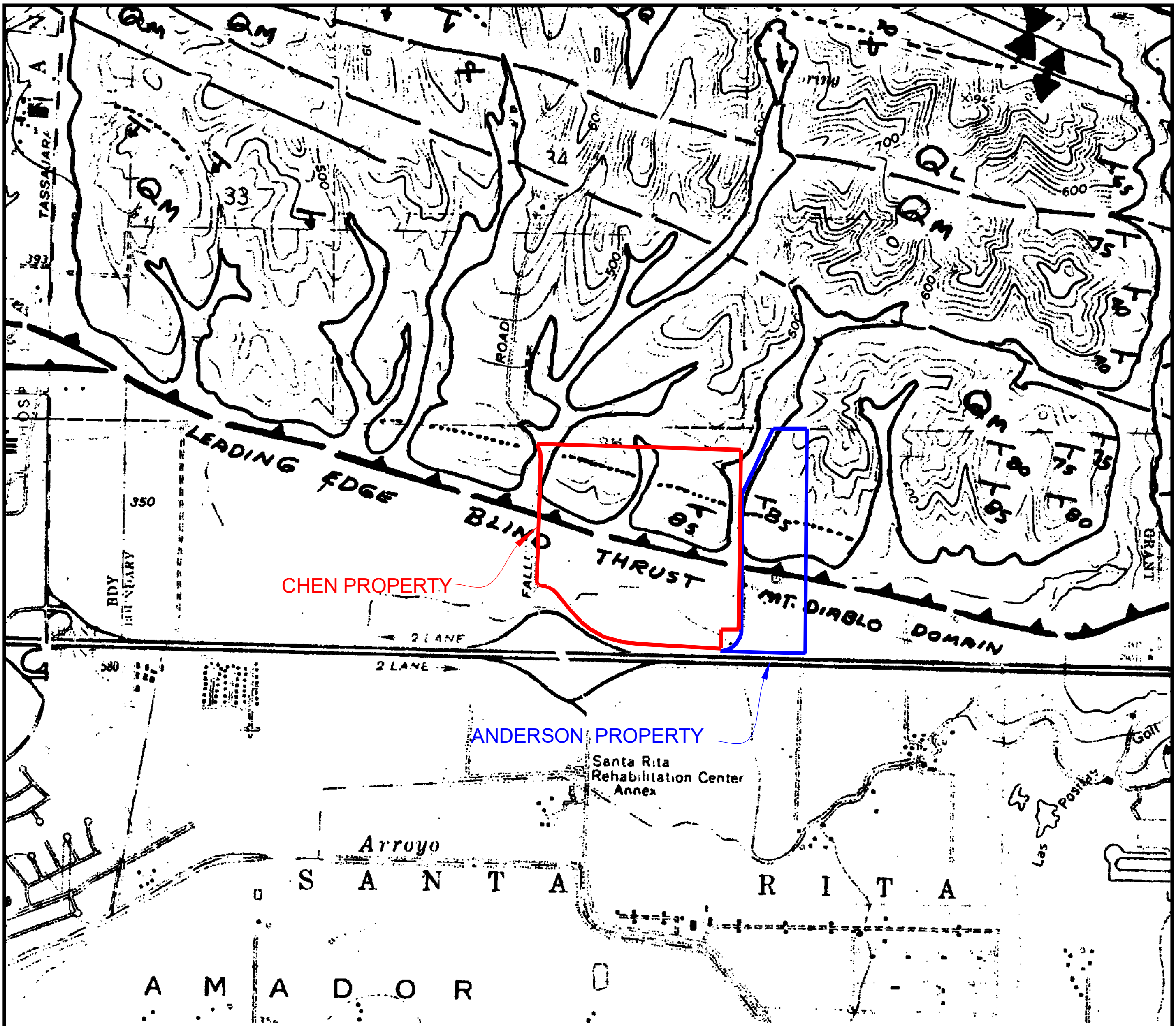
ENGEO
Expect Excellence

REGIONAL GEOLOGIC MAP - NILSEN
CHEN AND ANDERSON PROPERTY
DUBLIN, CALIFORNIA

PROJECT NO.: 4663.110.006
SCALE: AS SHOWN
DRAWN BY: LL
CHECKED BY: JSY
FIGURE NO. 5

G:\Drafting\DRAFTING2_Dwg\4663\110\GEX\4663110006-GEX-FIG5-NILSENMAP-0117.dwg Plot Date: 1-24-17 llee

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

Qm	MIDDLE PLEISTOCENE GRAVELS
Ql	PLEISTOCENE GRAVELS
	GEOLOGIC CONTACT (APPROXIMATE)
	RESISTANT BEDDING
	FAULT
	THRUST FAULT, SAWTEETH ON UPPER PLATE
	ANTICLINE
	SYNCLINE
	OVERTURNED ANTICLINE
	OVERTURNED SYNCLINE
50	STRIKE AND DIP OF BEDDING
	STRIKE AND DIRECTION OF DIP
50	STRIKE AND DIP OF O VERTURNED BEDDING
	HORIZONTAL BEDDING SHOWING TREND OF LINEATION

N

0 FEET 2000
0 METERS 1000

BASE MAP SOURCE: CRANE, 1980

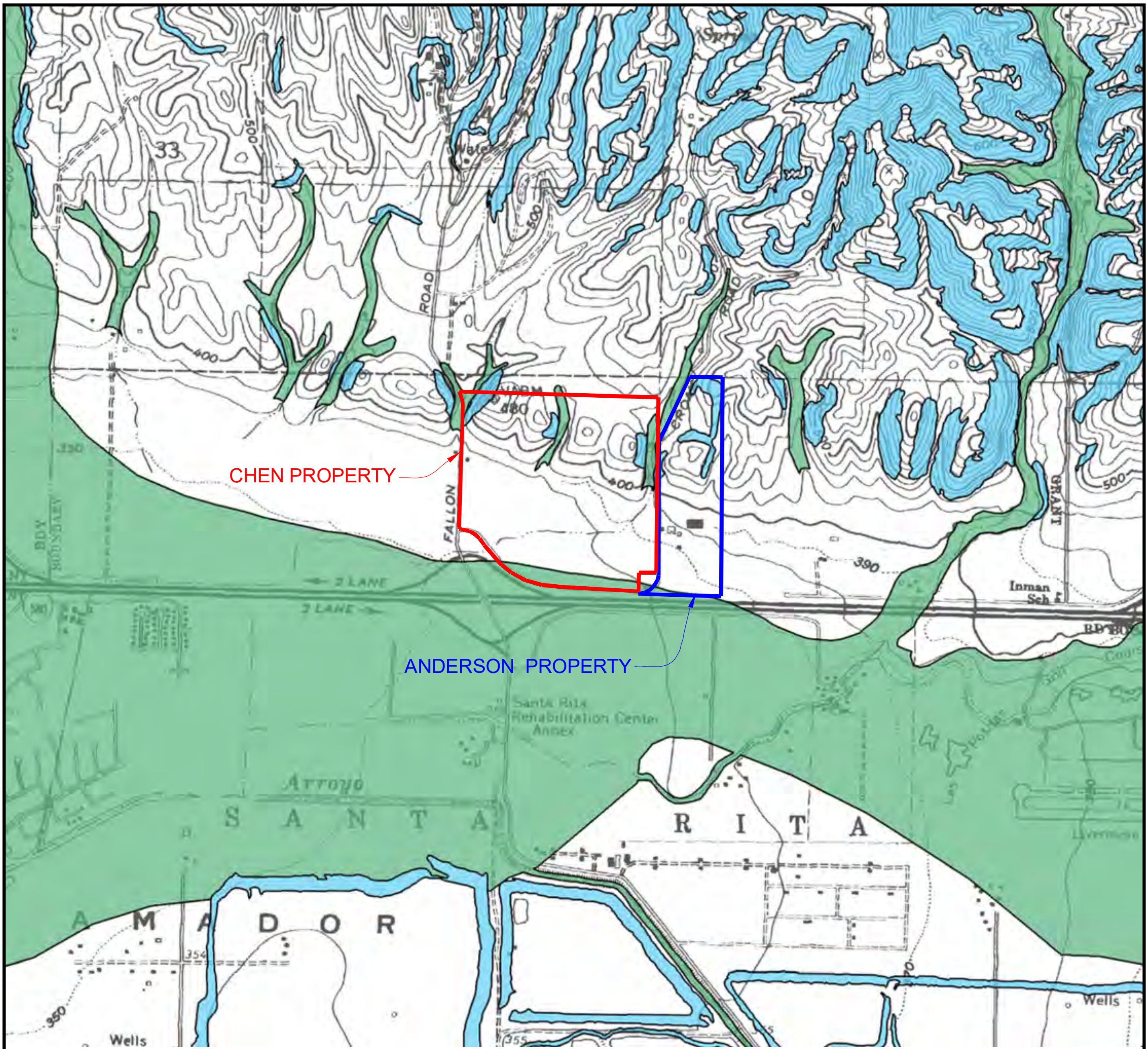
ENGEO
Expect Excellence

REGIONAL GEOLOGIC MAP - CRANE
CHEN AND ANDERSON PROPERTY
DUBLIN, CALIFORNIA

PROJECT NO.: 4663.110.004
SCALE: AS SHOWN
DRAWN BY: LL
CHECKED BY: JSY
FIGURE NO. 6

G:\Drafting\DRAFTING2_Dwg\4663\110\GEX\4663110006-GEX-FIG6-CRANEMAP-0117.dwg Plot Date: 1-24-17 llee

ORIGINAL FIGURE PRINTED IN COLOR



EXPLANATION

LIQUEFACTION

AREAS WHERE HISTORIC OCCURRENCE OF LIQUEFACTION, OR LOCAL GEOLOGICAL, GEOTECHNICAL AND GROUNDWATER CONDITIONS INDICATE A POTENTIAL FOR PERMANENT GROUND DISPLACEMENTS SUCH THAT MITIGATION AS DEFINED IN PUBLIC RESOURCES CODE SECTION 2693(c) WOULD BE REQUIRED

EARTHQUAKE-INDUCED LANDSLIDES

AREAS WHERE PREVIOUS OCCURRENCE OF LANDSLIDE MOVEMENT, OR LOCAL TOPOGRAPHIC, GEOLOGICAL, GEOTECHNICAL AND SUBSURFACE WATER CONDITIONS INDICATE A POTENTIAL FOR PERMANENT GROUND DISPLACEMENTS SUCH THAT MITIGATION AS DEFINED IN PUBLIC RESOURCES CODE SECTION 2693(c) WOULD BE REQUIRED

BASE MAP SOURCE: CALIFORNIA DEPARTMENT OF CONSERVATION, CALIFORNIA GEOLOGICAL SURVEY, 2008

ENGEO Expect Excellence	SEISMIC HAZARD ZONES MAP CHEN AND ANDERSON PROPERTY DUBLIN, CALIFORNIA	PROJECT NO.: 4663.110.006 SCALE: AS SHOWN DRAWN BY: LL CHECKED BY: JSY FIGURE NO. 7

G:\Drafting\DRAFTING2_Dwg\4663\110\GEX\4663110006-GEX-FIG7-HAZMAP-0117.dwg Plot Date:1-24-17 llee

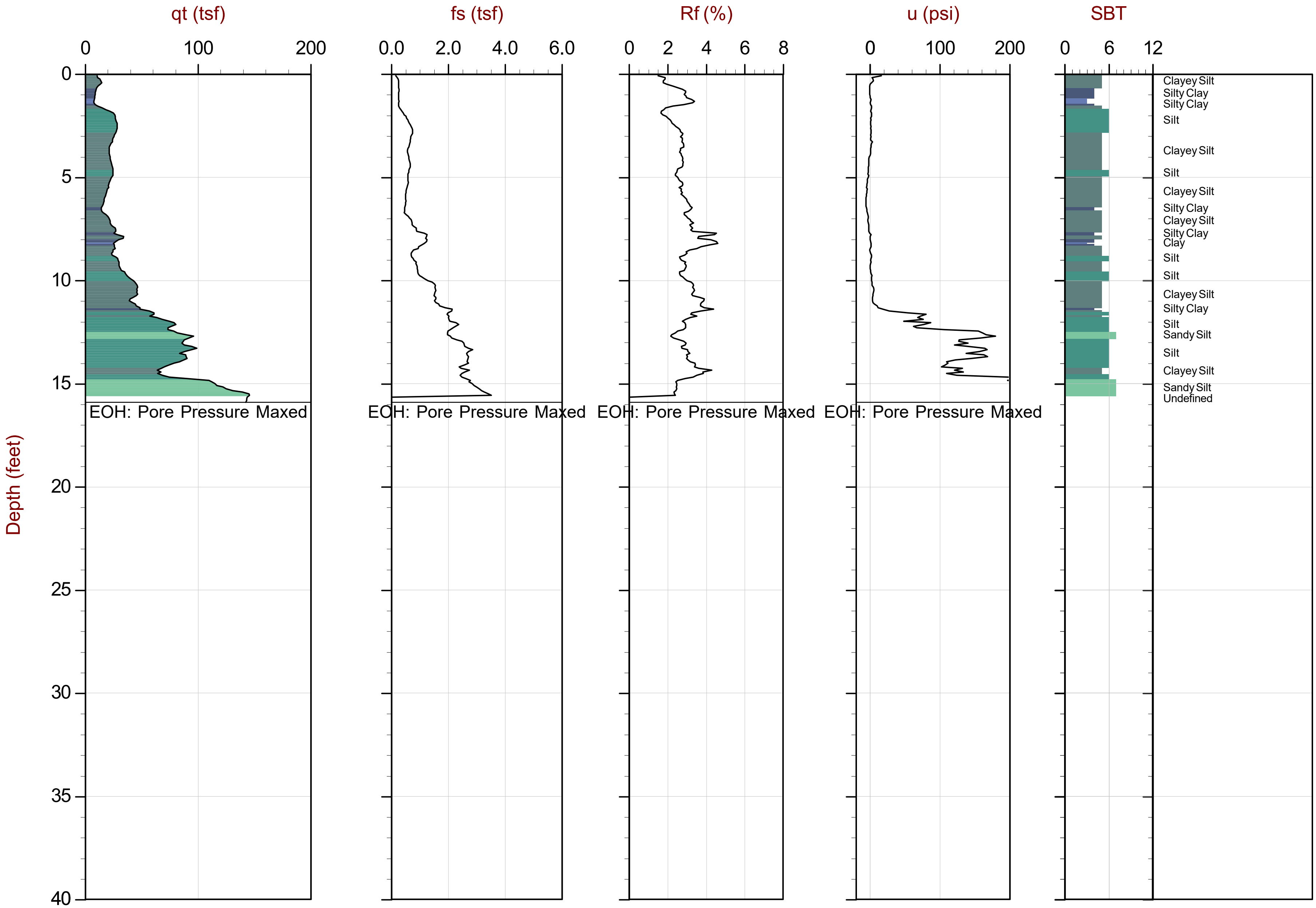
ORIGINAL FIGURE PRINTED IN COLOR

APPENDIX A

CONE PENETRATION TEST LOGS

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/28 13:27
Site: Chen Property
Sounding: 1-CPT1
Cone: 446:T1500F15U500



Max Depth: 4.850 m / 15.91 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

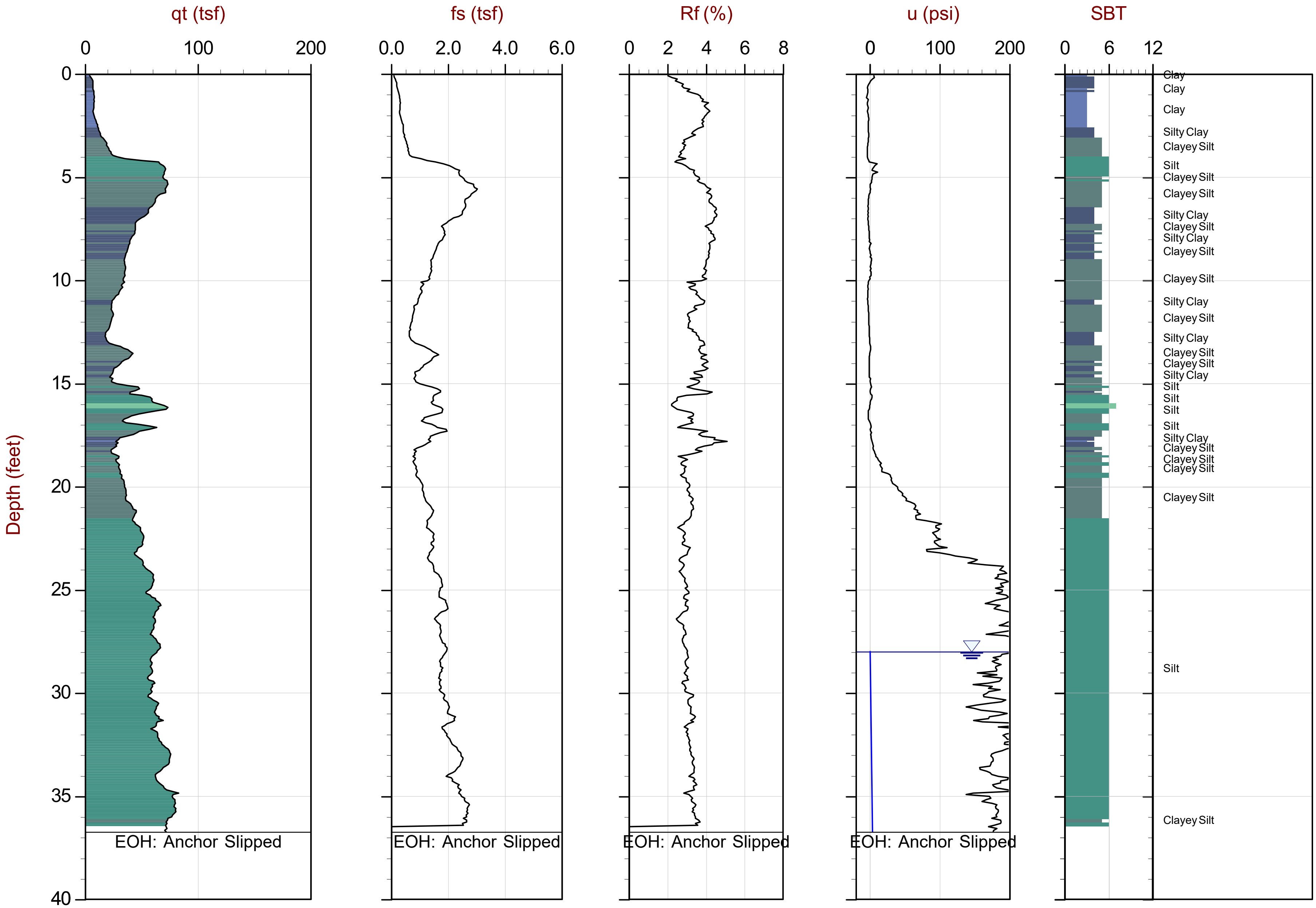
File: 16-56105_CP01.COR
Unit Wt: SBT Zones

SBT: Robertson and Campanella, 1986
Coords: UTM 10N N: 4174011m E: 602088m
Sheet No: 1 of 1

Overplot Item: Ueq, Assumed Ueq, Dissipation, equilibrium achieved, Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.	Job No: 16-56105	Sounding: 1-CPT2
	Date: 2016/12/28 14:07	Cone: 446:T1500F15U500
	Site: Chen Property	



Max Depth: 11.200 m / 36.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56105_CP02.COR
Unit Wt: SBT Zones

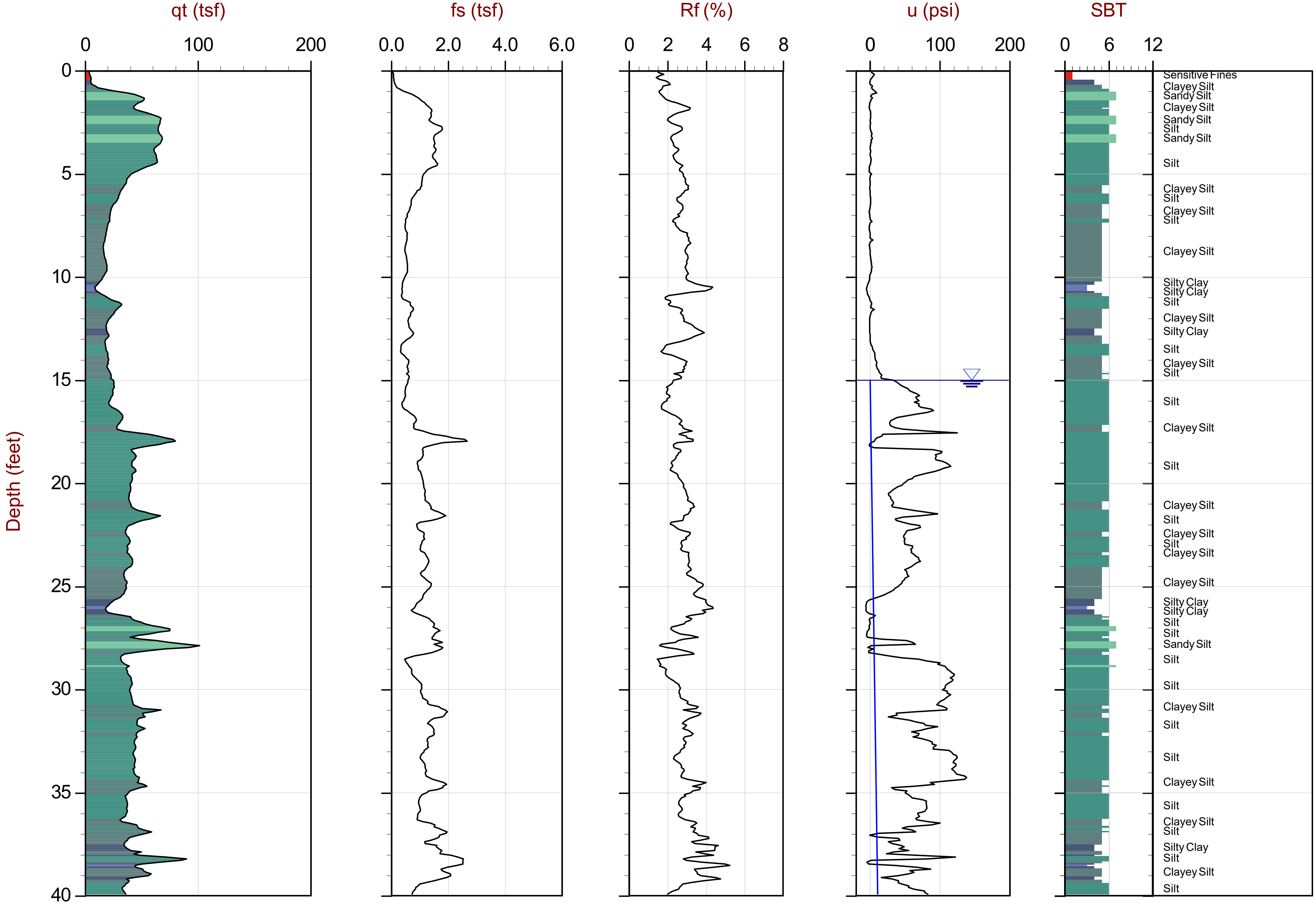
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173959m E:601724m
Sheet No: 1 of 1

Overplot Item: Ueq, Assumed Ueq, Dissipation, equilibrium achieved, Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 08:44
Site: Chen Property
Sounding: 1-CPT3
Cone: 446:T1500F15U500



Max Depth: 22.475 m / 73.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56105_CP03.COR
Unit Wt: SBT Zones

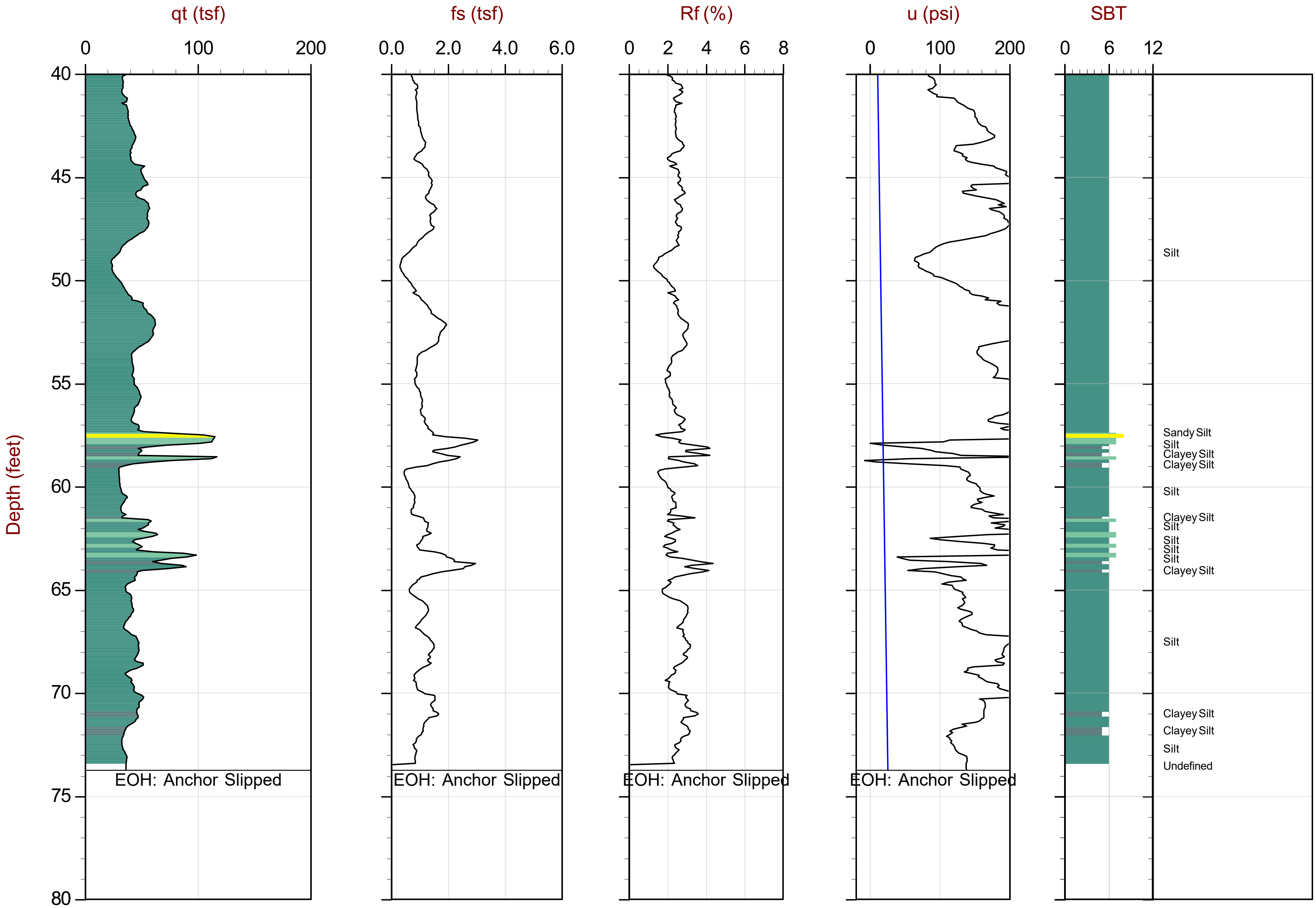
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173618m E:601587m
Sheet No: 1 of 2

Overplot Item: Ueq
Assumed Ueq
Dissipation, equilibrium achieved
Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 08:44
Site: Chen Property
Sounding: 1-CPT3
Cone: 446:T1500F15U500



Max Depth: 22.475 m / 73.74 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point
Overplot Item: Ueq Assumed Ueq Dissipation, equilibrium achieved Hydrostatic Line

File: 16-56105_CP03.COR
Unit Wt: SBT Zones

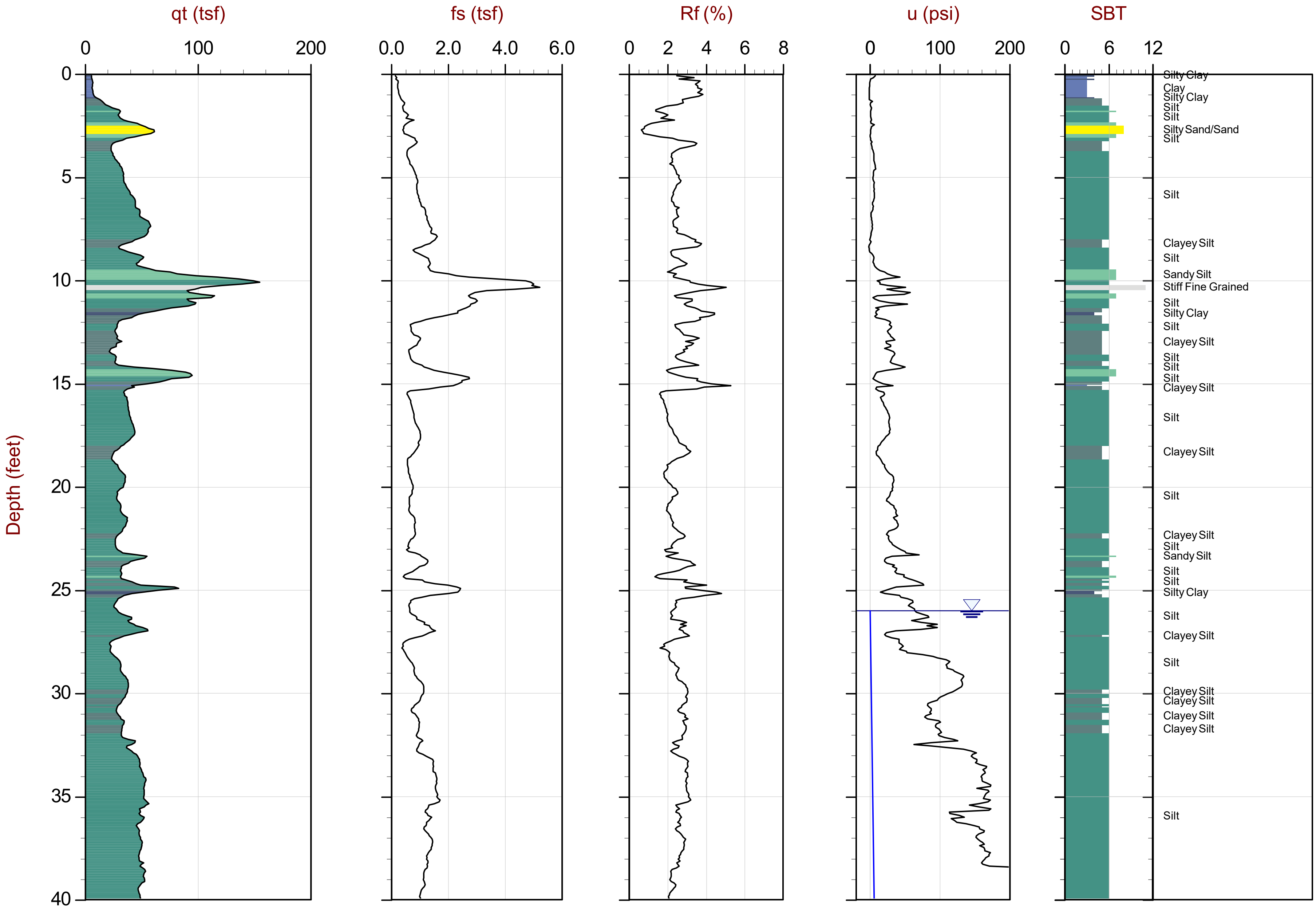
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173618m E:601587m
Sheet No: 2 of 2

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 07:44
Site: Chen Property

Sounding: 1-CPT4
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56105_CP04.COR
Unit Wt: SBT Zones

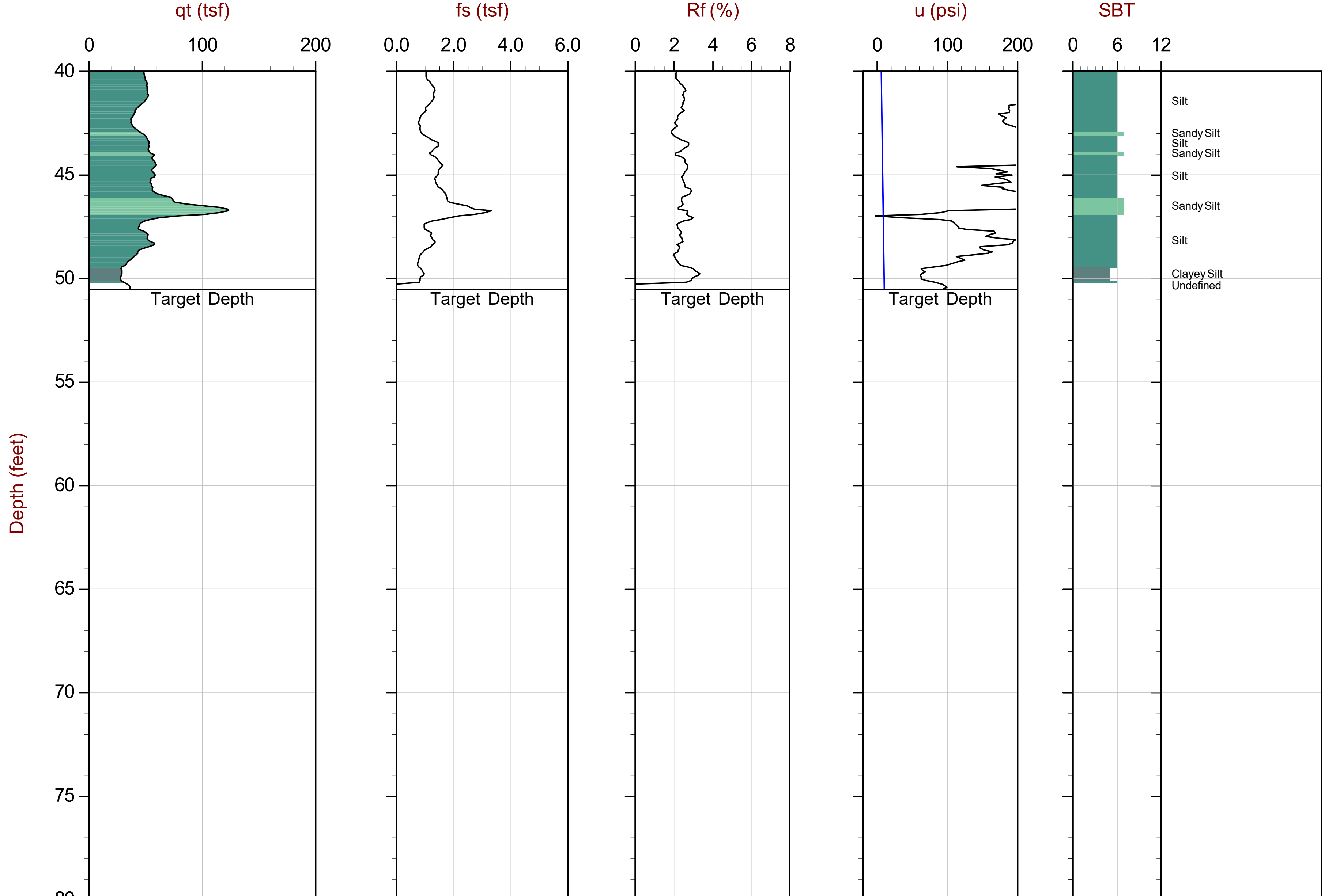
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N: 4173582m E: 601981m
Sheet No: 1 of 2

Overplot Item: Ueq; Assumed Ueq; Dissipation, equilibrium achieved; Hydrostatic Line

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 07:44
Site: Chen Property

Sounding: 1-CPT4
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point
Overplot Item: Ueq, Assumed Ueq, Dissipation, equilibrium achieved, Hydrostatic Line

File: 16-56105_CP04.COR
Unit Wt: SBT Zones

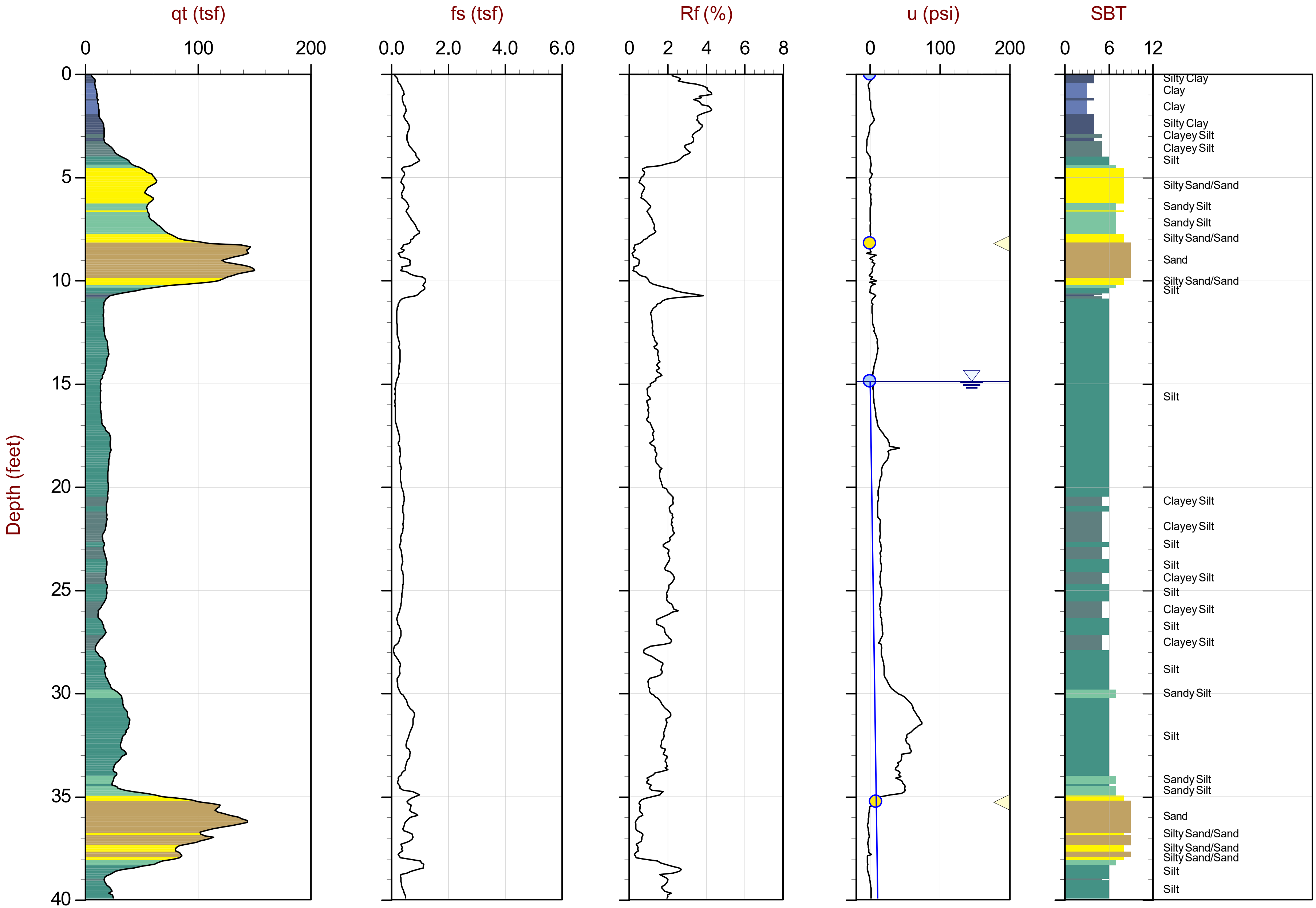
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173582m E:601981m
Sheet No: 2 of 2

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 10:22
Site: Chen Property

Sounding: 1-CPT5
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56105_CP05.COR
Unit Wt: SBT Zones

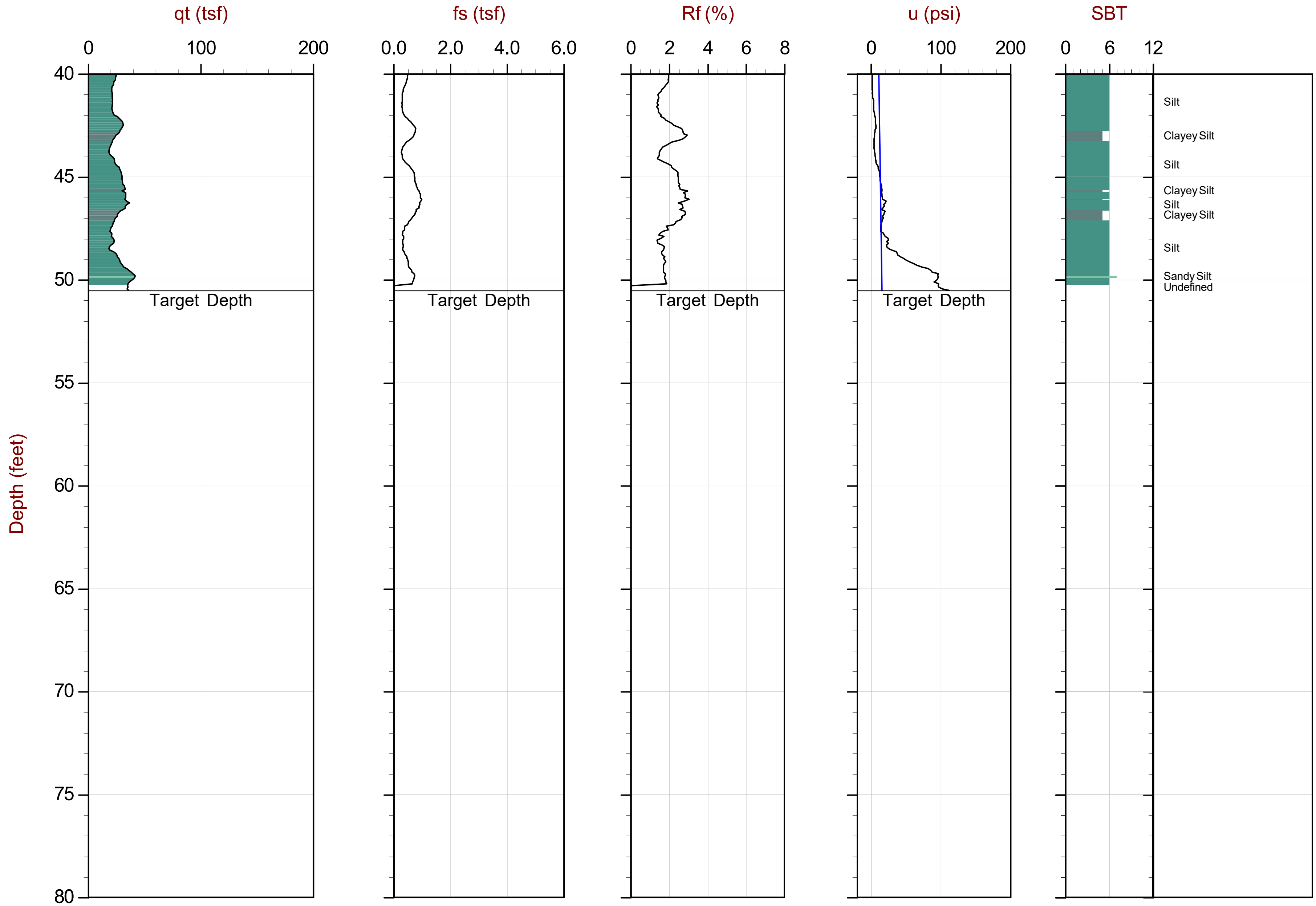
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173381m E:601668m
Sheet No: 1 of 2

Overplot Item: Ueq · Assumed Ueq · Dissipation, equilibrium achieved · Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 10:22
Site: Chen Property
Sounding: 1-CPT5
Cone: 446:T1500F15U500



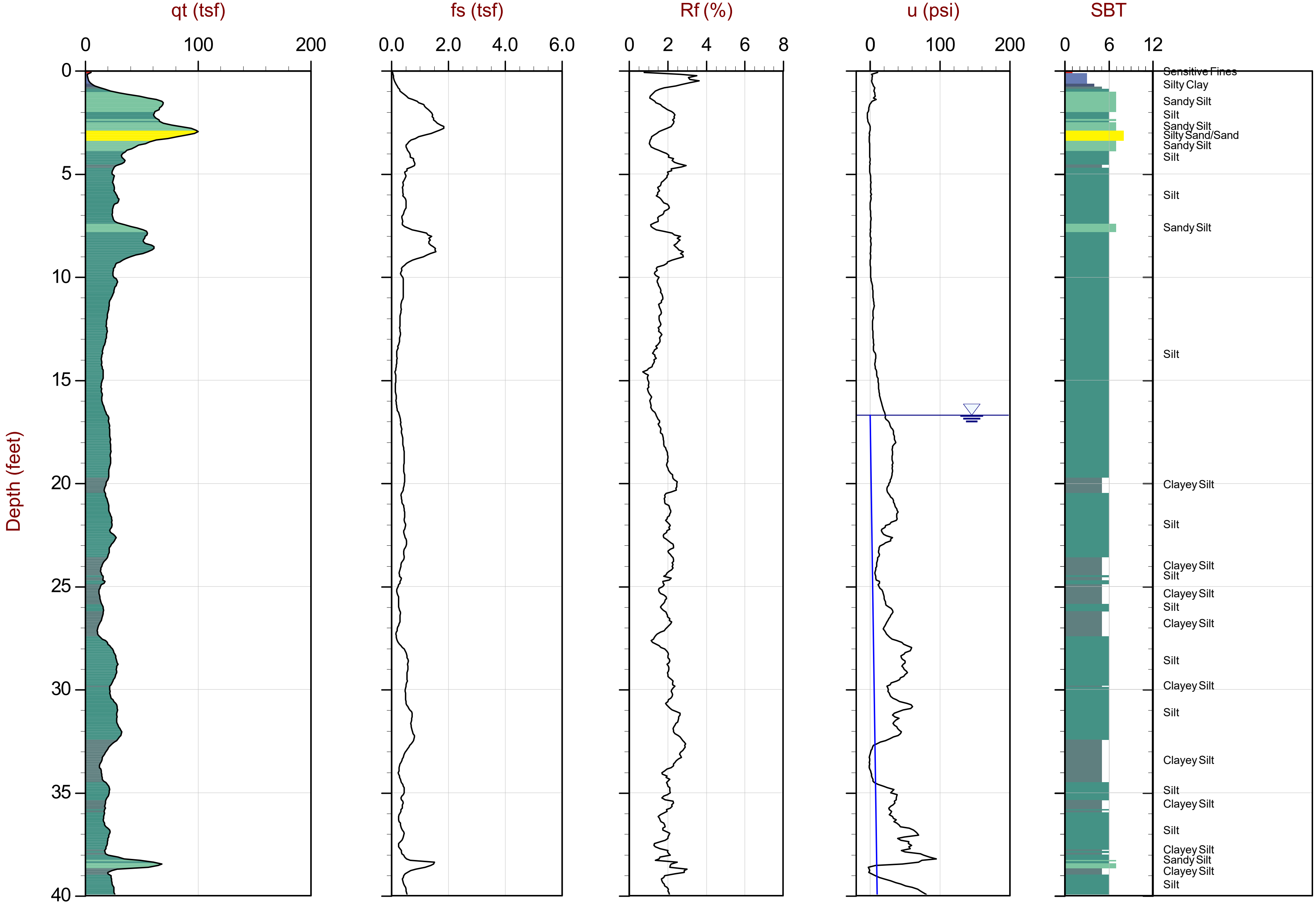
Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point
File: 16-56105_CP05.COR
Unit Wt: SBT Zones
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173381m E:601668m
Sheet No: 2 of 2

Overplot Item: Ueq; Assumed Ueq; Dissipation, equilibrium achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 12:34
Site: Chen Property
Sounding: 1-CPT6
Cone: 446:T1500F15U500



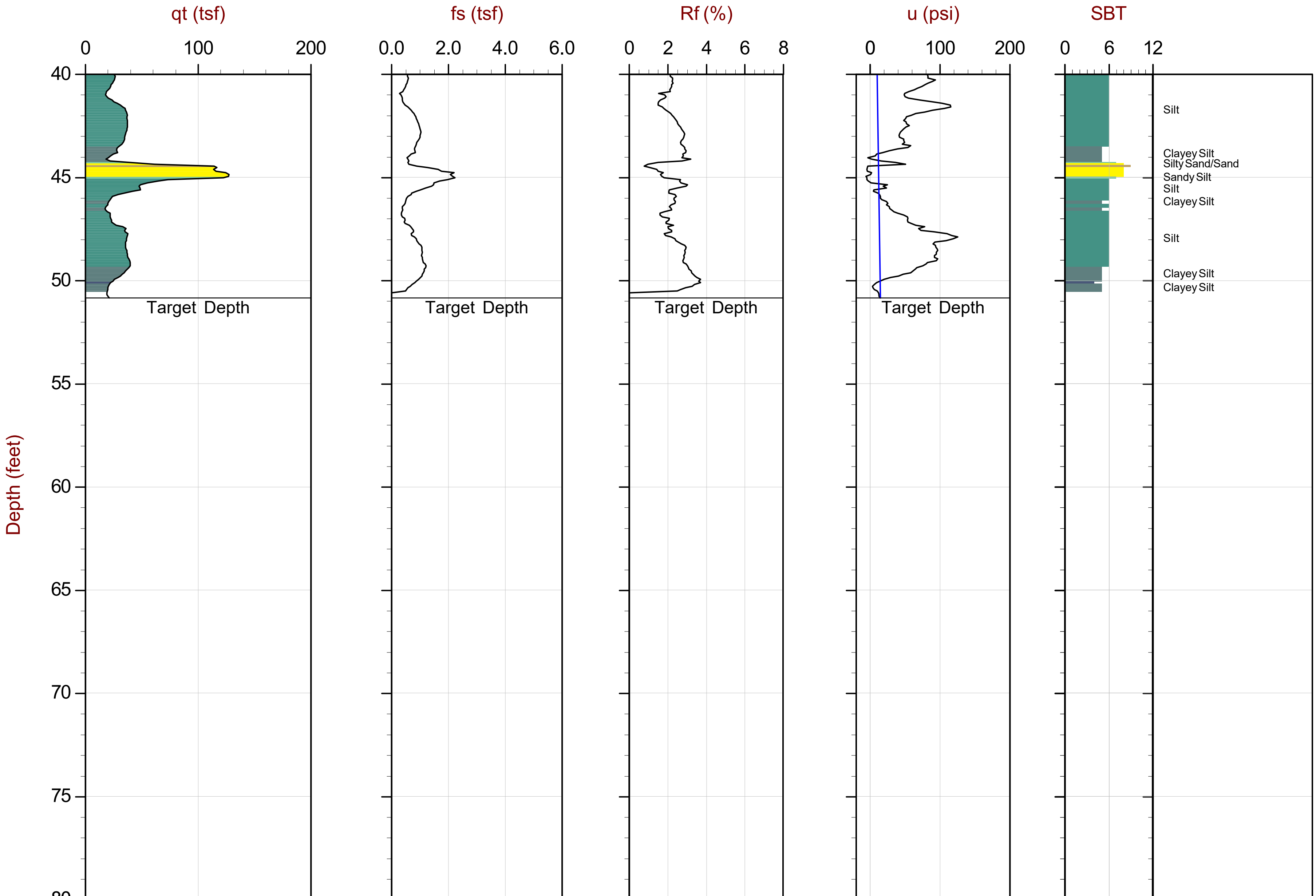
Max Depth: 15.500 m / 50.85 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point
File: 16-56105_CP06.COR
Unit Wt: SBT Zones
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N: 4173369m E: 601976m
Sheet No: 1 of 2

Overplot Item: Ueq; Assumed Ueq; Dissipation, equilibrium achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 12:34
Site: Chen Property
Sounding: 1-CPT6
Cone: 446:T1500F15U500



Max Depth: 15.500 m / 50.85 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56105_CP06.COR
Unit Wt: SBT Zones

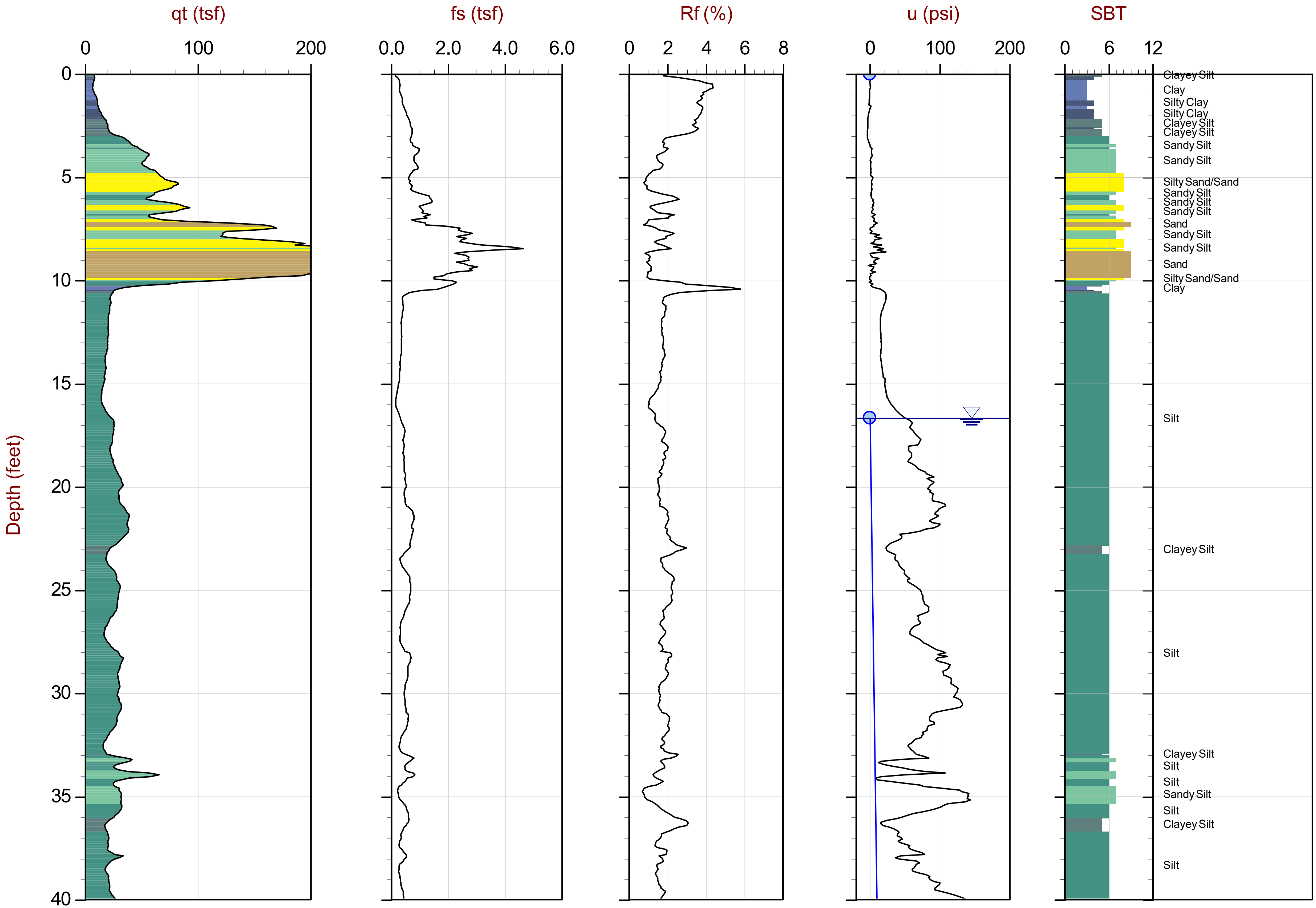
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173369m E:601976m
Sheet No: 2 of 2

Overplot Item: Ueq; Assumed Ueq; Dissipation, equilibrium achieved; Hydrostatic Line

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 11:25
Site: Chen Property

Sounding: 1-CPT7
Cone: 446:T1500F15U500



Max Depth: 15.325 m / 50.28 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56105_CP07.COR
Unit Wt: SBT Zones

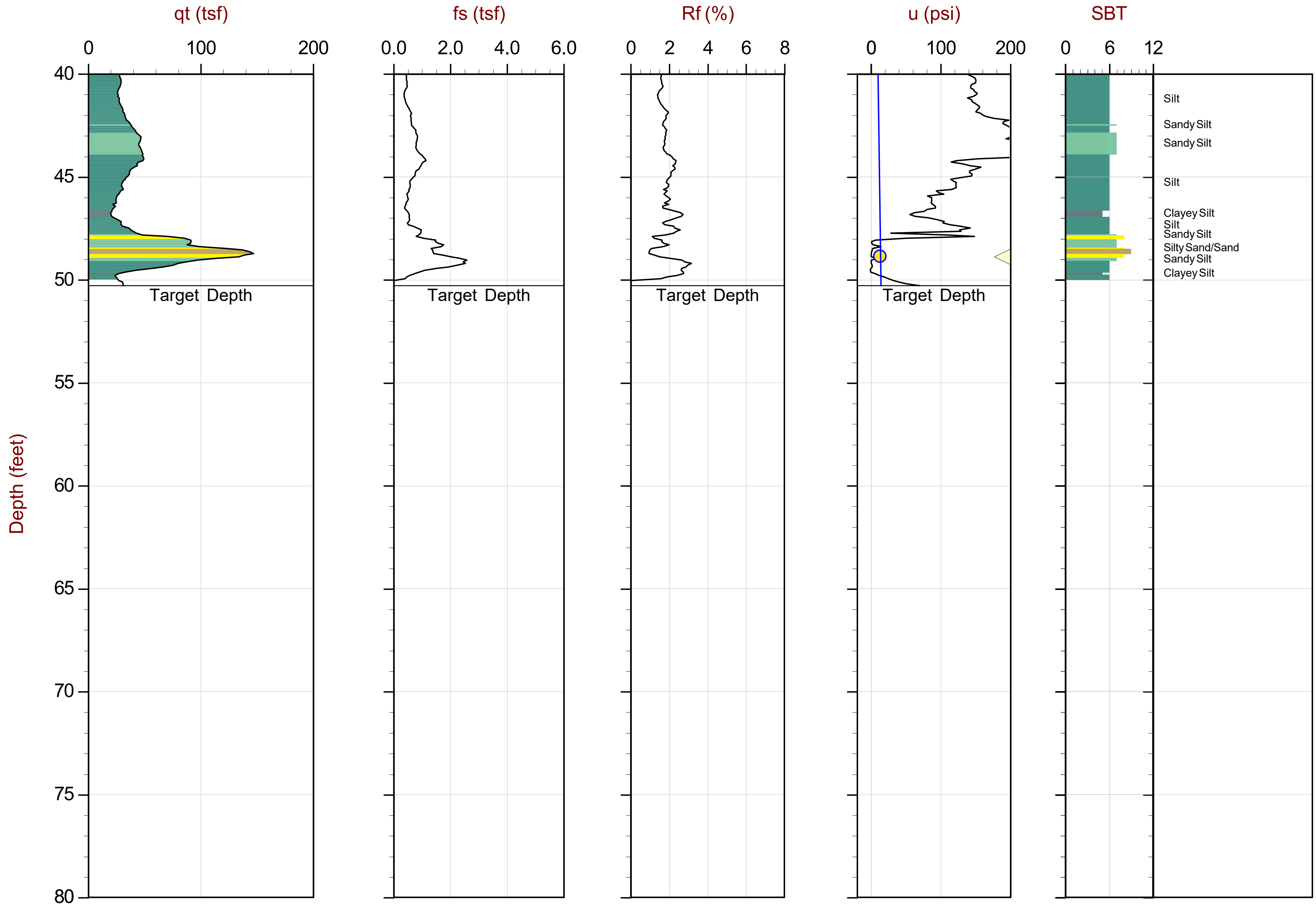
SBT: Robertson and Campanella, 1986
Coords: UTM 10N N: 4173443m E: 601825m
Sheet No: 1 of 2

Overplot Item: Ueq Assumed Ueq Dissipation, equilibrium achieved Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56105
Date: 2016/12/29 11:25
Site: Chen Property
Sounding: 1-CPT7
Cone: 446:T1500F15U500



Max Depth: 15.325 m / 50.28 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

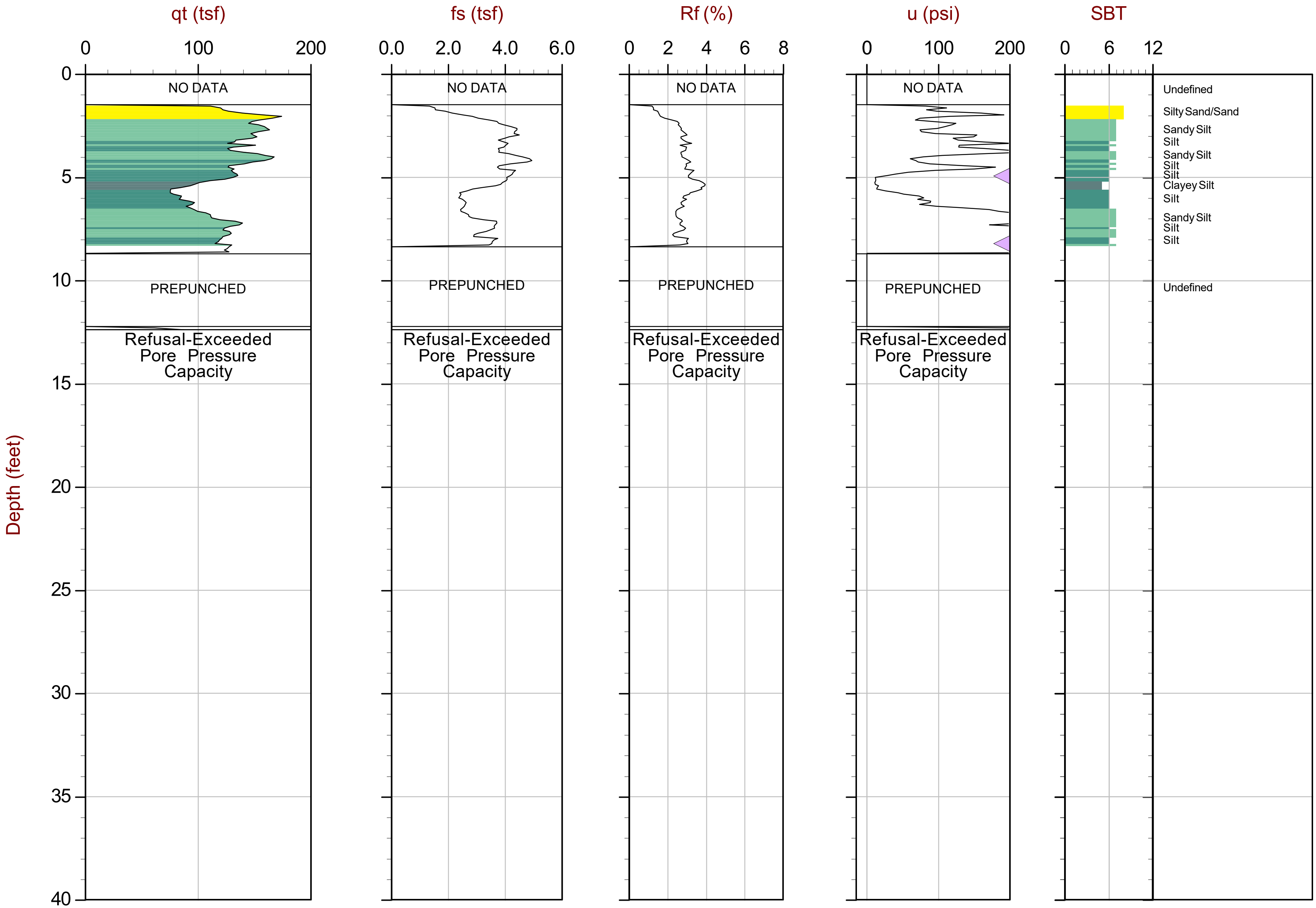
File: 16-56105_CP07.COR
Unit Wt: SBT Zones

SBT: Robertson and Campanella, 1986
Coords: UTM 10N N:4173443m E:601825m
Sheet No: 2 of 2

Overplot Item: Ueq, Assumed Ueq; Dissipation, equilibrium achieved; Hydrostatic Line

ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 08:12
Site: 4663.110.006
Sounding: 1-CPT1
Cone: 446:T1500F15U500



Max Depth: 3.775 m / 12.39 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56104_CP01.COR
Unit Wt: SBT Zones

SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4174081m E: 602320m
Page No: 1 of 1

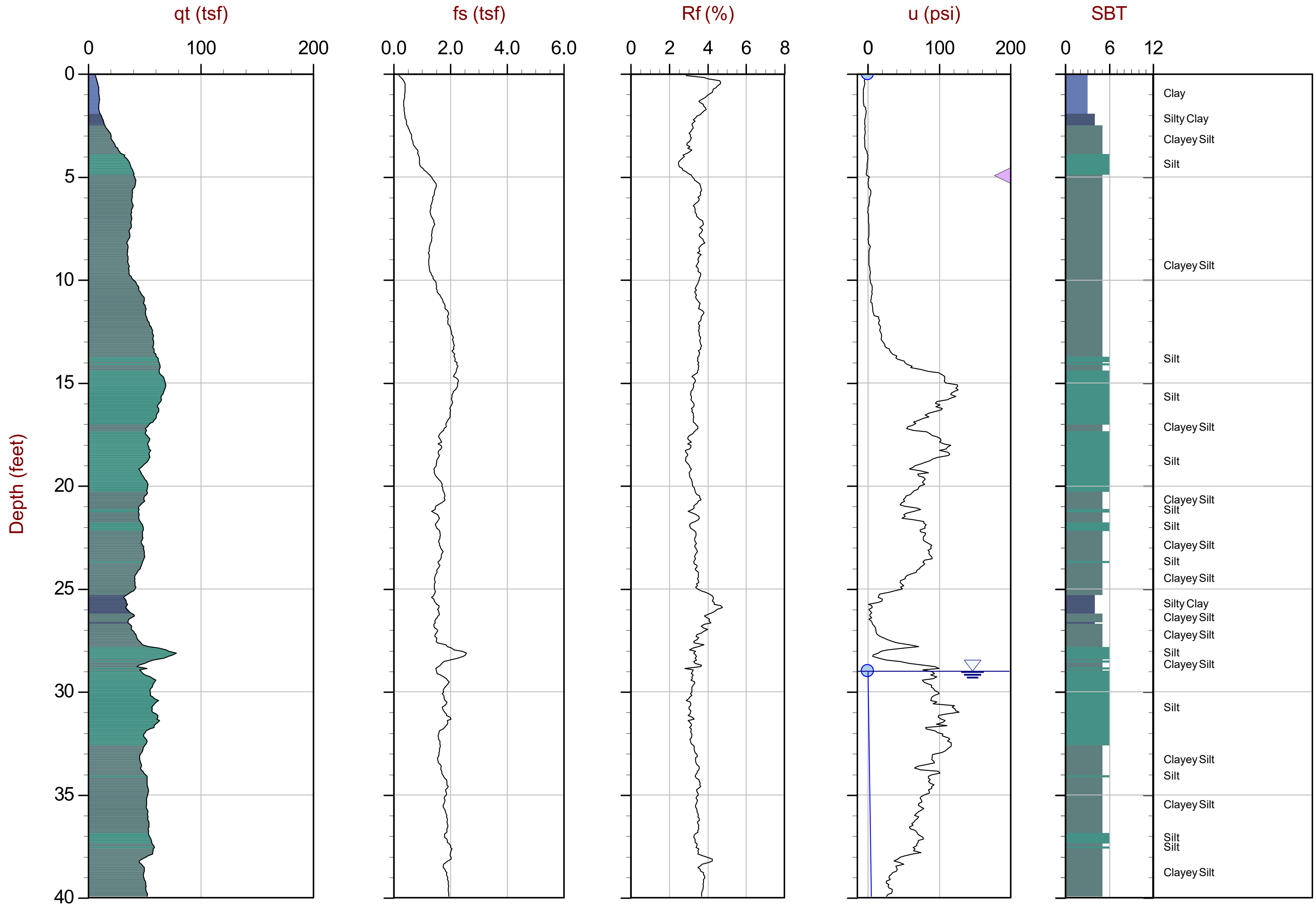
Overplot Item: Assumed Ueq; Ueq; Dissipation, equilibrium achieved; Dissipation, equilibrium not achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 09:28
Site: 4663.110.006

Sounding: 1-CPT2
Cone: 446:T1500F15U500



Max Depth: 15.350 m / 50.36 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56104_CP02.COR
Unit Wt: SBT Zones

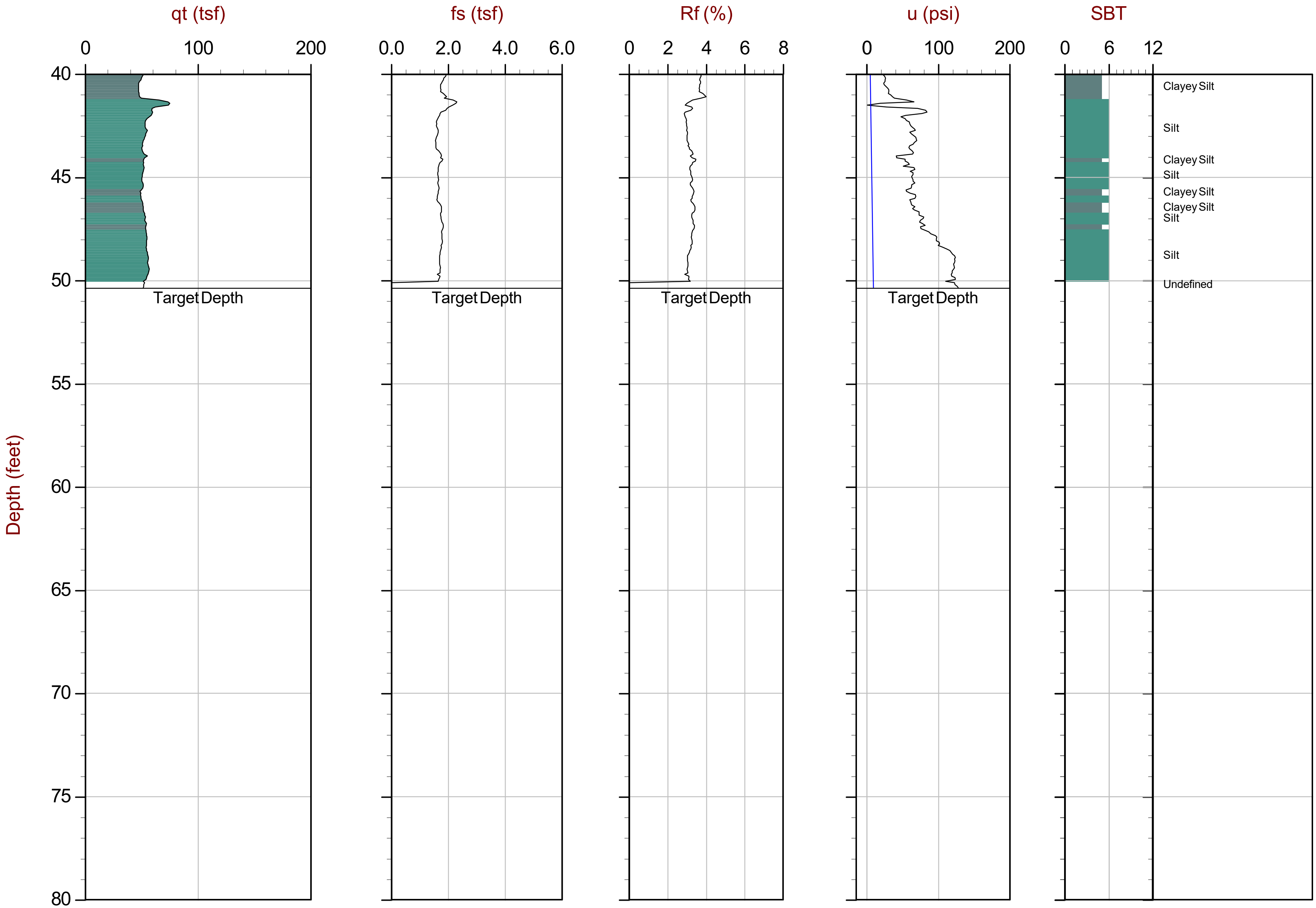
SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4173790m E: 602328m
Page No: 1 of 2

Overplot Item: Assumed Ueq; Ueq; Dissipation, equilibrium achieved; Dissipation, equilibrium not achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 09:28
Site: 4663.110.006
Sounding: 1-CPT2
Cone: 446:T1500F15U500



Max Depth: 15.350 m / 50.36 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point
File: 16-56104_CP02.COR
Unit Wt: SBT Zones
SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4173790m E: 602328m
Page No: 2 of 2

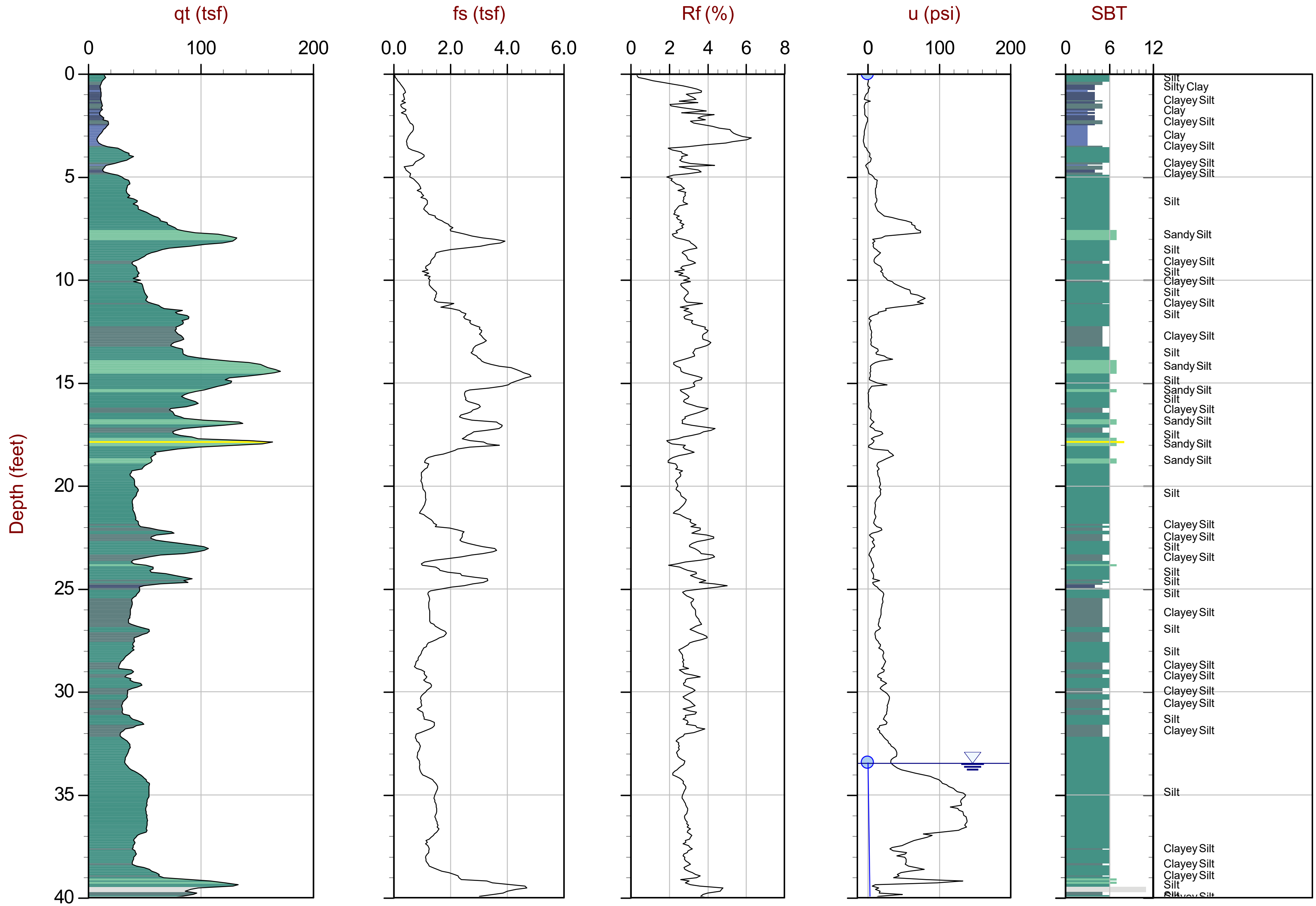
Overplot Item: Assumed Ueq; Ueq; Dissipation, equilibrium achieved; Dissipation, equilibrium not achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 10:20
Site: 4663.110.006

Sounding: 1-CPT3
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56104_CP03.COR
Unit Wt: SBT Zones

SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4173558m E: 602285m
Page No: 1 of 2

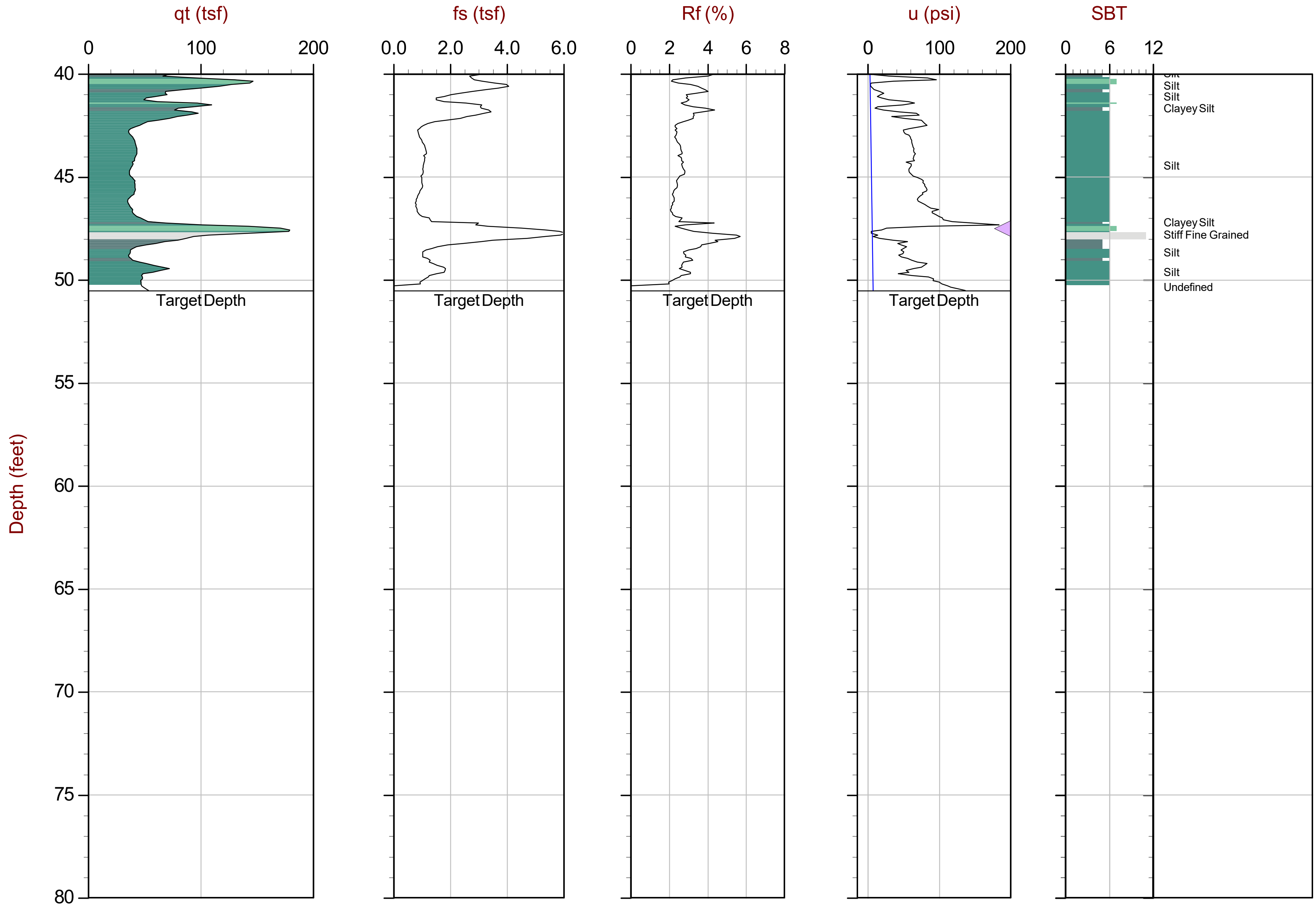
Overplot Item: Assumed Ueq; Ueq; Dissipation, equilibrium achieved; Dissipation, equilibrium not achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 10:20
Site: 4663.110.006

Sounding: 1-CPT3
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56104_CP03.COR
Unit Wt: SBT Zones

SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4173558m E: 602285m
Page No: 2 of 2

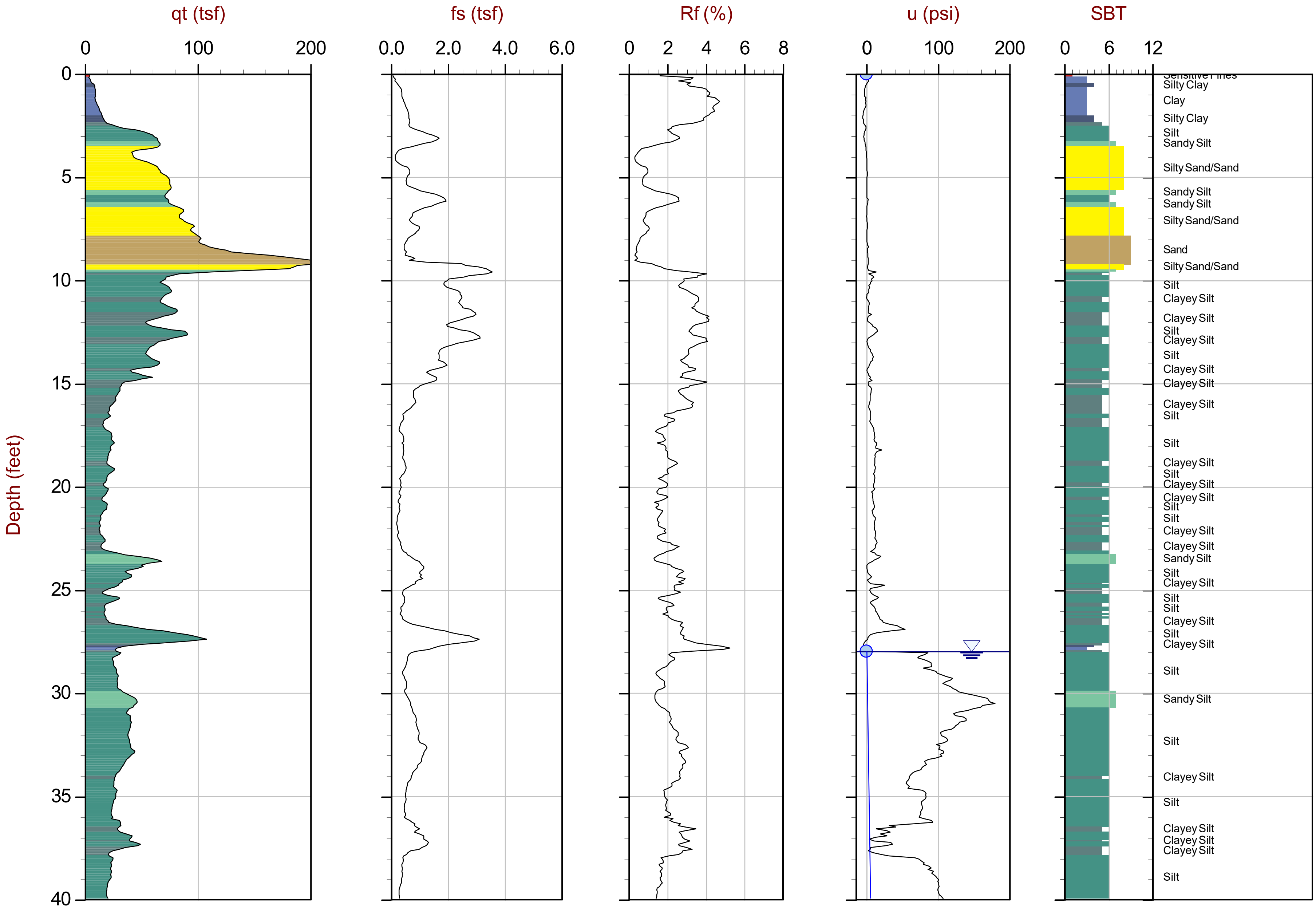
Overplot Item: Assumed Ueq; Ueq; Dissipation, equilibrium achieved; Dissipation, equilibrium not achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 11:33
Site: 4663.110.006

Sounding: 1-CPT4
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point

File: 16-56104_CP04.COR
Unit Wt: SBT Zones

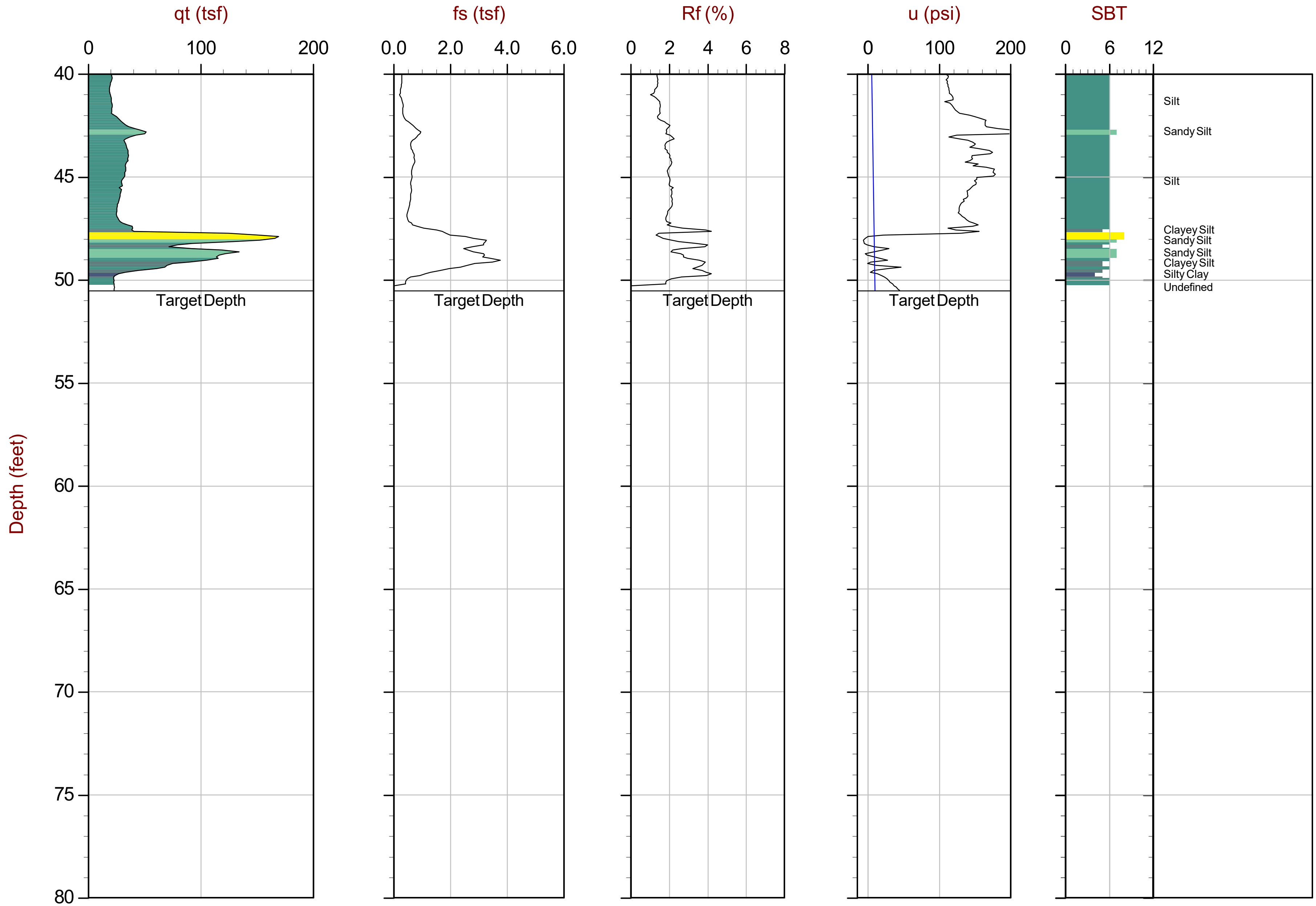
SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4173409m E: 602268m
Page No: 1 of 2

Overplot Item: Assumed Ueq; Ueq; Dissipation, equilibrium achieved; Dissipation, equilibrium not achieved; Hydrostatic Line

CALIFORNIA PUSH TECHNOLOGIES INCORPORATED

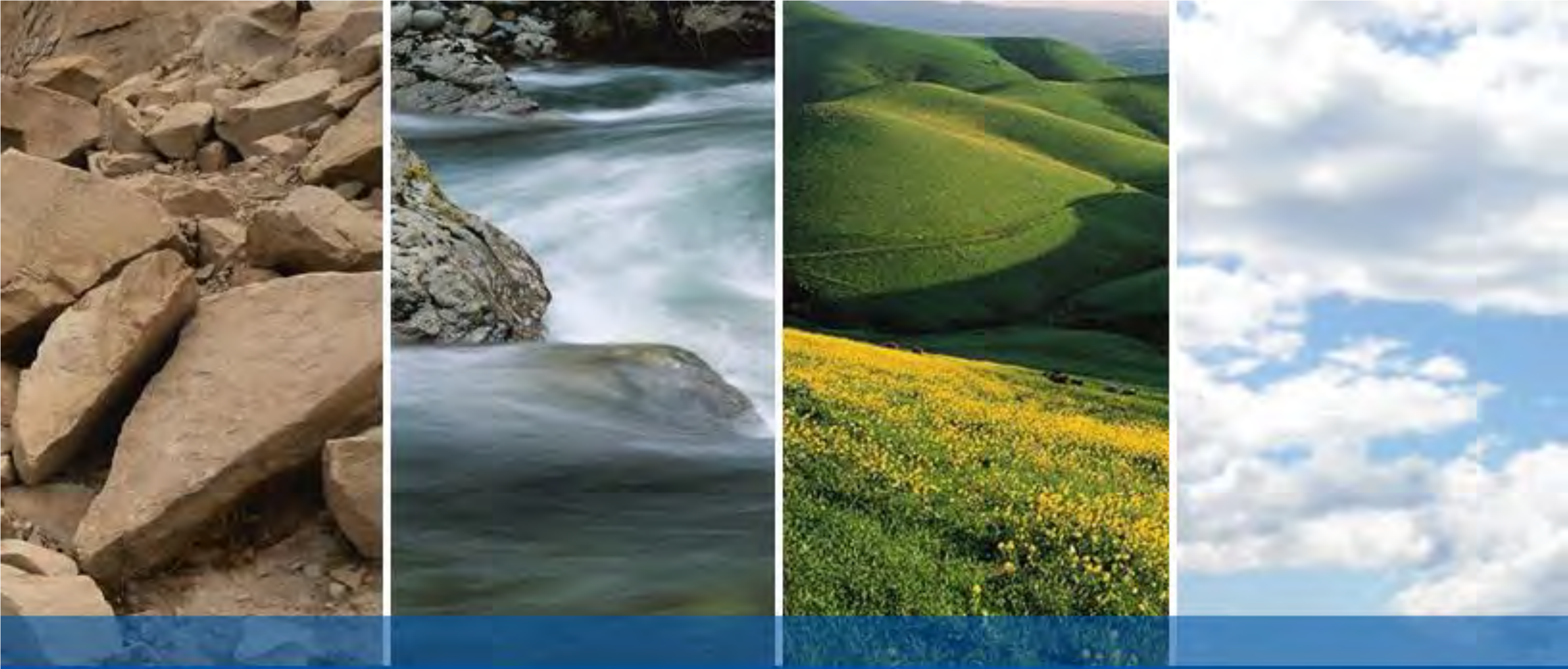
ENGEO Inc.

Job No: 16-56104
Date: 12:28:16 11:33
Site: 4663.110.006
Sounding: 1-CPT4
Cone: 446:T1500F15U500



Max Depth: 15.400 m / 50.52 ft
Depth Inc: 0.025 m / 0.082 ft
Avg Int: Every Point
File: 16-56104_CP04.COR
Unit Wt: SBT Zones
SBT: Robertson and Campanella, 1986
Coords: UTM Zone 10 N: 4173409m E: 602268m
Page No: 2 of 2

Overplot Item: Assumed Ueq, Ueq, Dissipation, equilibrium achieved, Dissipation, equilibrium not achieved, Hydrostatic Line

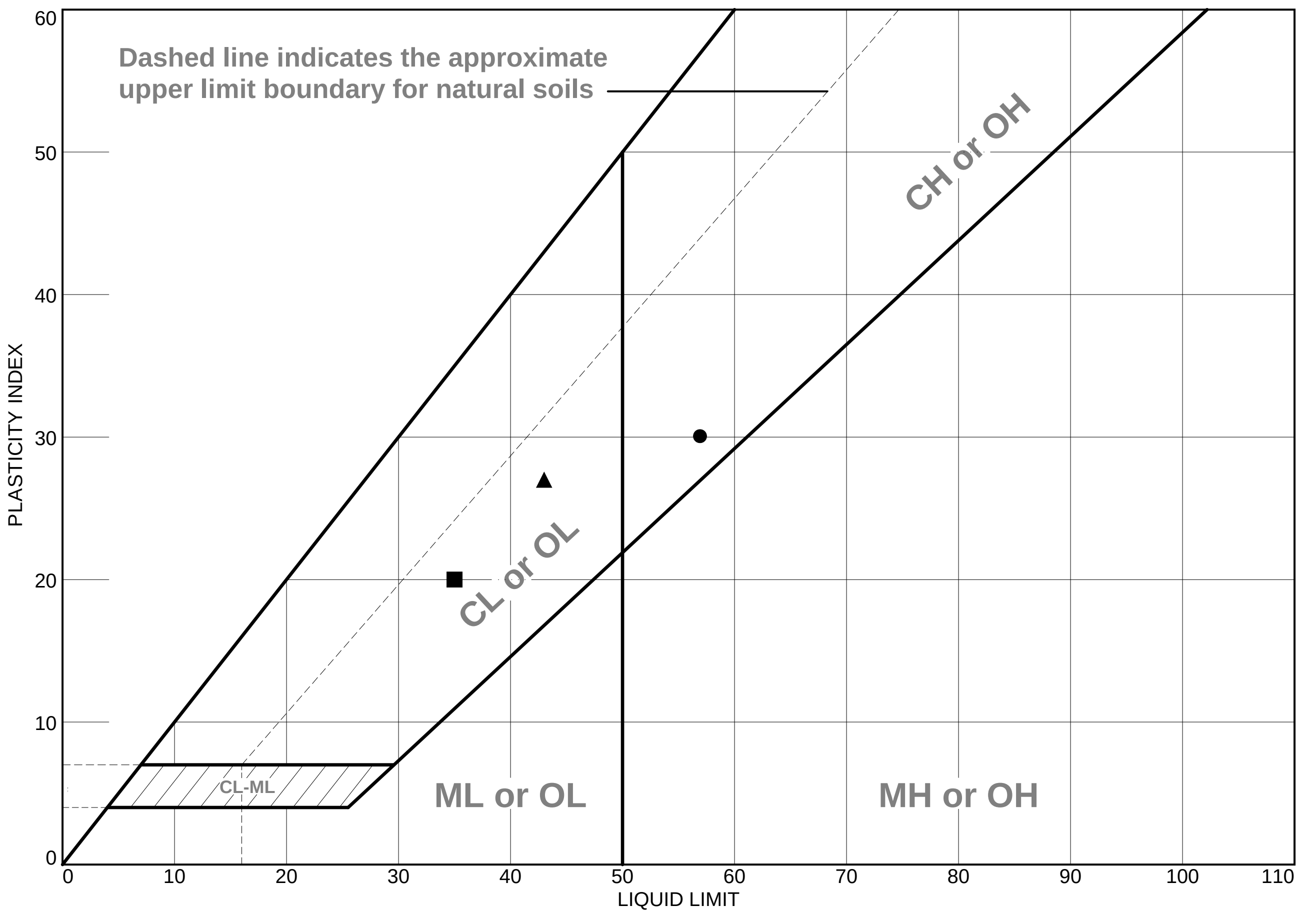


APPENDIX B

LABORATORY TEST DATA

Liquid and Plastic Limits Test Report
Particle Size Distribution Report
Water Soluble Sulfates in Soils Test Report

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	See Exploration Log	57	27	30	96.8	73.7	CH
■	See Exploration Log	35	15	20			
▲	See Exploration Log	43	16	27			

Project No. 4663.110.005 **Client:** GH Pacific Investment Holdings, LLC

Project: Chen Property

●**Source of Sample:** GEX **Depth:** Surface **Sample Number:** 1-CPT-1

■**Source of Sample:** GEX **Depth:** Surface **Sample Number:** 1-CPT-3

▲**Source of Sample:** GEX **Depth:** Surface **Sample Number:** 1-CPT-6

Remarks:

●ASTM D4318, wet method
ASTM D422

■ASTM D4318, wet method

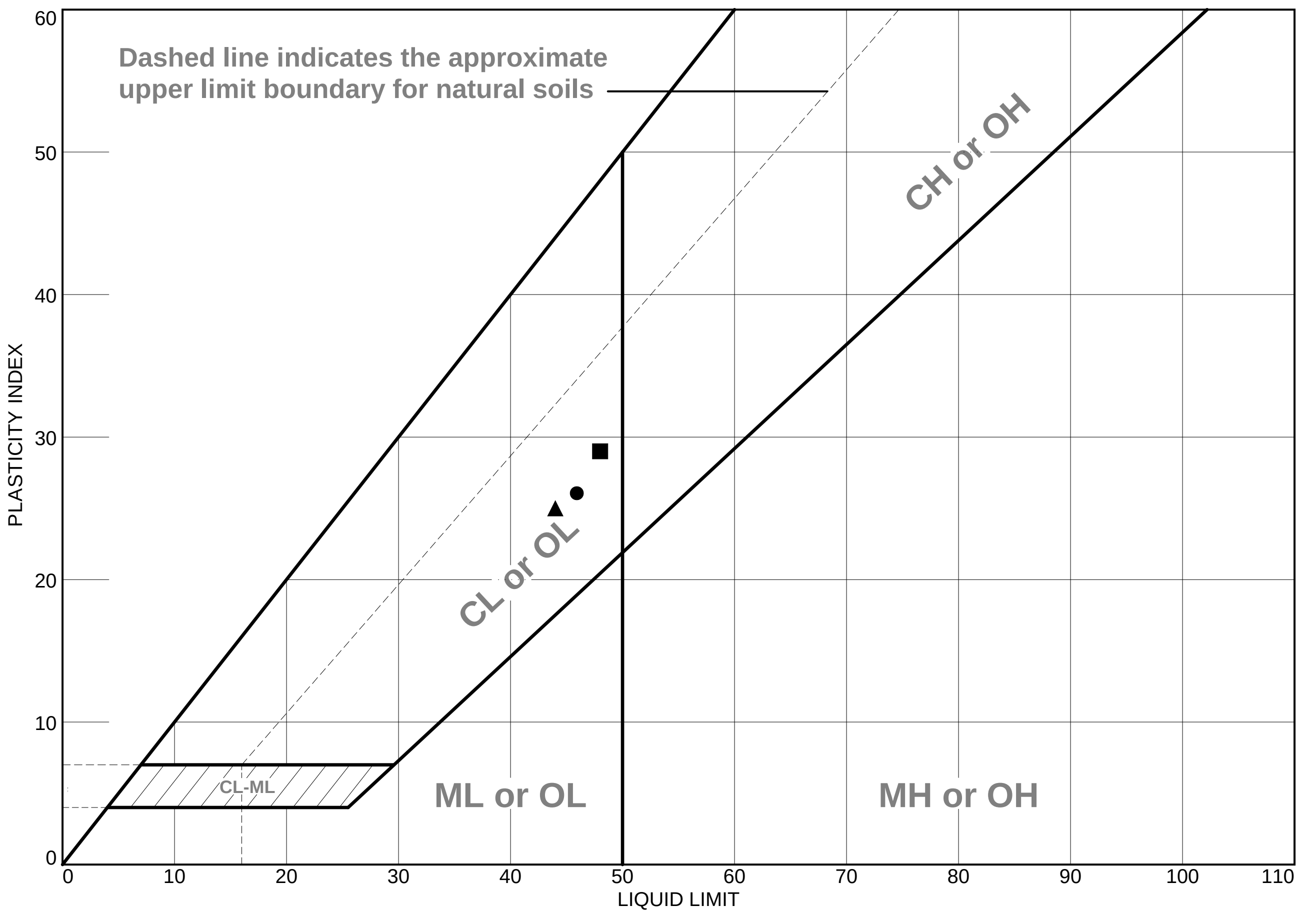
▲ASTM D4318, wet method

ENGEO INCORPORATED

Figure

Tested By: I. McCauley **Checked By:** K. Lecce

LIQUID AND PLASTIC LIMITS TEST REPORT



	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	See Exploration Log	46	20	26	97.7	79.8	CL
■	See Exploration Log	48	19	29			
▲	See Exploration Log	44	19	25			

Project No. 4663.110.006 **Client:** GH Pacific Investment Holdings, LLC

Project: Anderson Property

●**Source of Sample:** GEX **Depth:** Surface **Sample Number:** 1-CPT-1

■**Source of Sample:** GEX **Depth:** Surface **Sample Number:** 1-CPT-2

▲**Source of Sample:** GEX **Depth:** Surface **Sample Number:** 1-CPT-4

ENGEO INCORPORATED

Remarks:

●ASTM D4318, wet method
ASTM D422

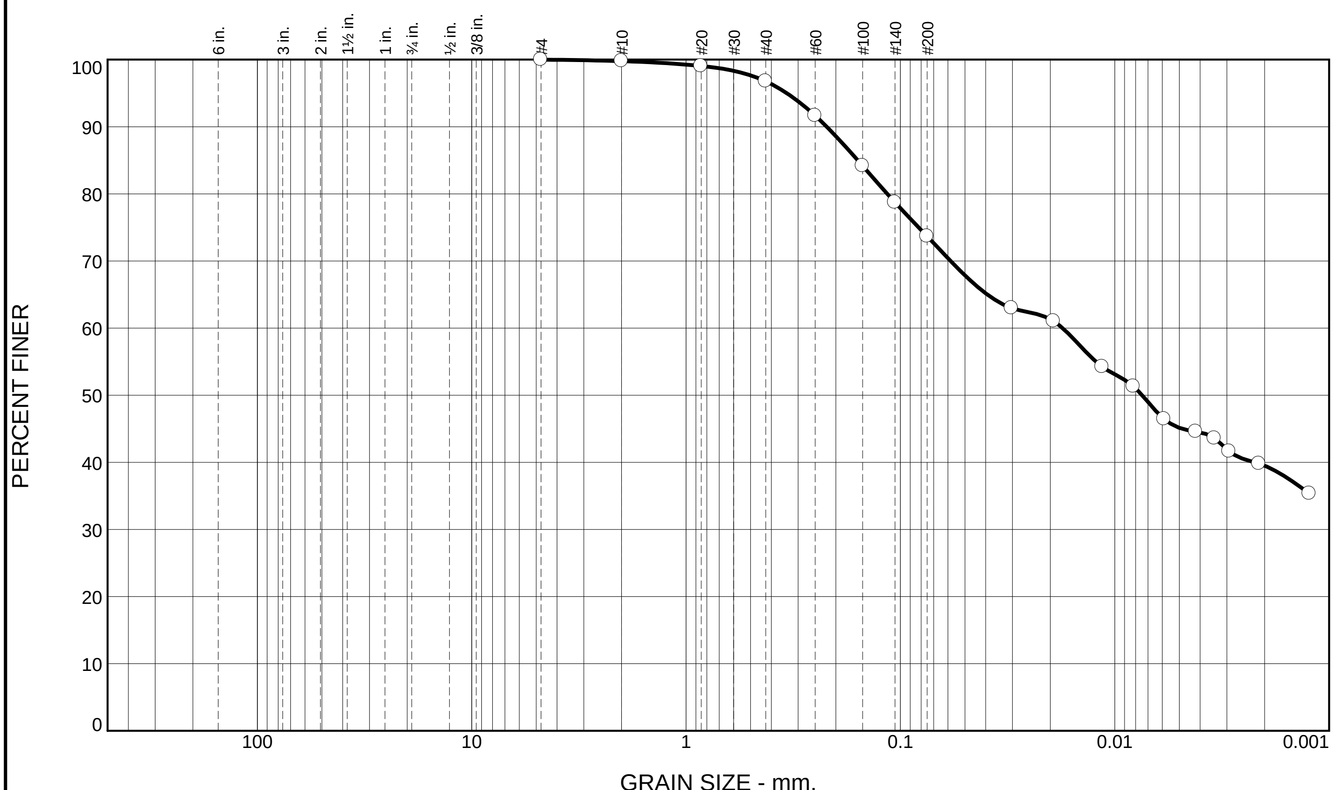
■ASTM D4318, wet method

▲ASTM D4318, wet method

Figure

Tested By: I. McCauley **Checked By:** K. Lecce

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	3.0	23.1	34.2	39.5

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#20	99.0		
#40	96.8		
#60	91.7		
#100	84.2		
#140	78.7		
#200	73.7		
0.0303 mm.	63.0		
0.0193 mm.	61.0		
0.0114 mm.	54.2		
0.0082 mm.	51.3		
0.0059 mm.	46.4		
0.0042 mm.	44.6		
0.0034 mm.	43.6		
0.0029 mm.	41.6		
0.0021 mm.	39.8		
0.0012 mm.	35.3		

* (no specification provided)

Soil Description

See Exploration Log

Atterberg Limits

PL= 27 LL= 57 PI= 30

Coefficients

D_{90}= 0.2207 D_{85}= 0.1581 D_{60}= 0.0175
D_{50}= 0.0074 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CH AASHTO= A-7-6(23)

Remarks

ASTM D422
ASTM D4318, wet method

Source of Sample: GEX **Depth:** Surface
Sample Number: 1-CPT-1 **Date:** 1-10-17

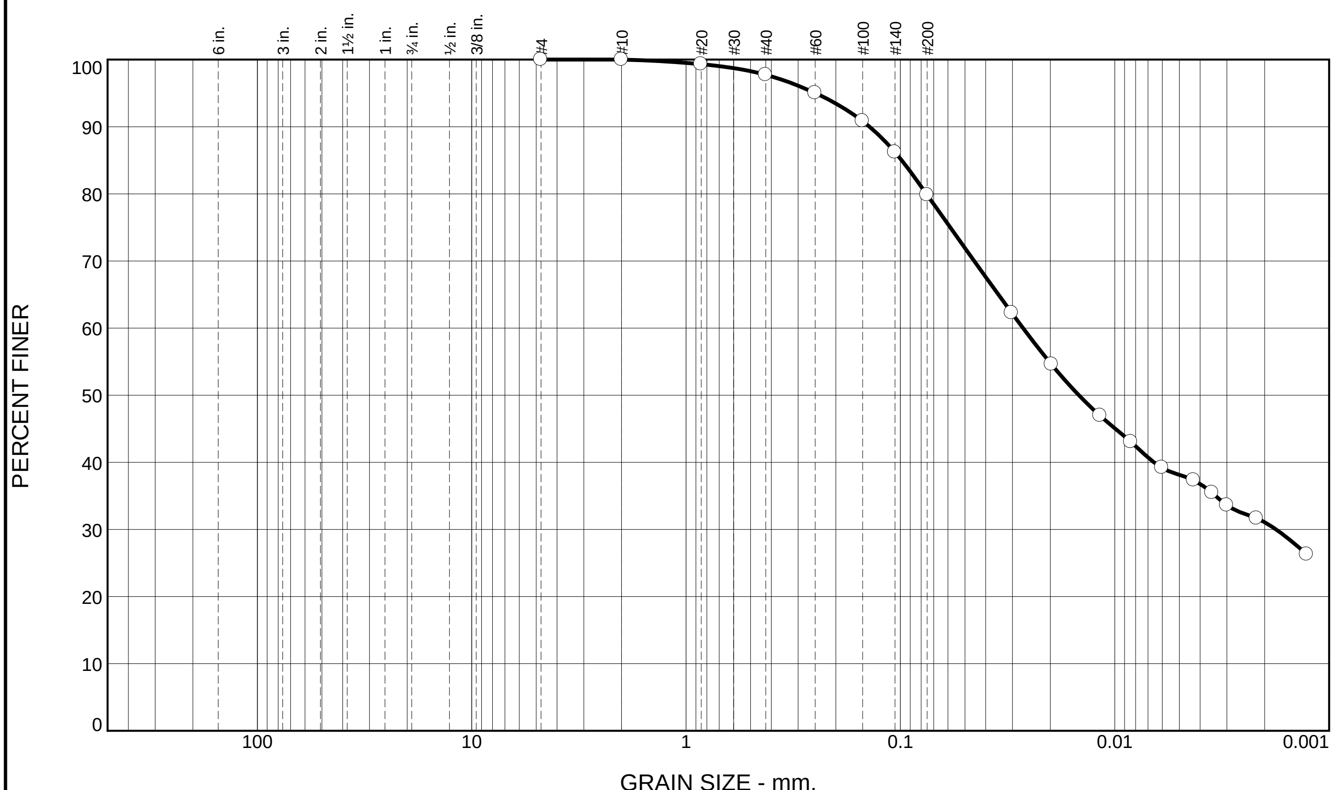
ENGEO INCORPORATED

Client: GH Pacific Investment Holdings, LLC
Project: Chen Property

Project No: 4663.110.005 PH1 **Figure**

Tested By: I. McCauley **Checked By:** K. Lecce

Particle Size Distribution Report



% +75mm	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.3	17.9	48.7	31.1

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	100.0		
#20	99.3		
#40	97.7		
#60	95.0		
#100	90.8		
#140	86.2		
#200	79.8		
0.0303 mm.	62.3		
0.0197 mm.	54.6		
0.0117 mm.	46.9		
0.0084 mm.	43.0		
0.0060 mm.	39.2		
0.0043 mm.	37.3		
0.0035 mm.	35.5		
0.0030 mm.	33.6		
0.0022 mm.	31.7		
0.0013 mm.	26.3		

* (no specification provided)

Soil Description

See Exploration Log

Atterberg Limits

PL= 20 LL= 46 PI= 26

Coefficients

D_{90}= 0.1394 D_{85}= 0.0987 D_{60}= 0.0268
D_{50}= 0.0147 D_{30}= 0.0018 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-7-6(21)

Remarks

ASTM D422
ASTM D4318, wet method

Source of Sample: GEX **Depth:** Surface
Sample Number: 1-CPT-1 **Date:** 1-10-17

ENGEO INCORPORATED

Client: GH Pacific Investment Holdings, LLC
Project: Anderson Property

Project No: 4663.110.006 PH1 **Figure**

Tested By: I. McCauley **Checked By:** K. Lecce

WATER SOLUBLE SULFATES IN SOILS

ASTM C1580

Sample number	Sample Location / ID	Matrix	Water Soluble Sulfate % by mass
1	1-CPT-4 surface	soil	ND
2	1-CPT-5 surface	soil	ND

Remarks: Results are reported to the nearest 0.01% by mass. Anything less than 0.005% will be reported as 'ND' for Not-Detectable.

PROJECT NAME: Chen Property
PROJECT NUMBER: 4663.110.005
CLIENT: GH Pacific Investment Holdings, LLC
PHASE NUMBER: 1

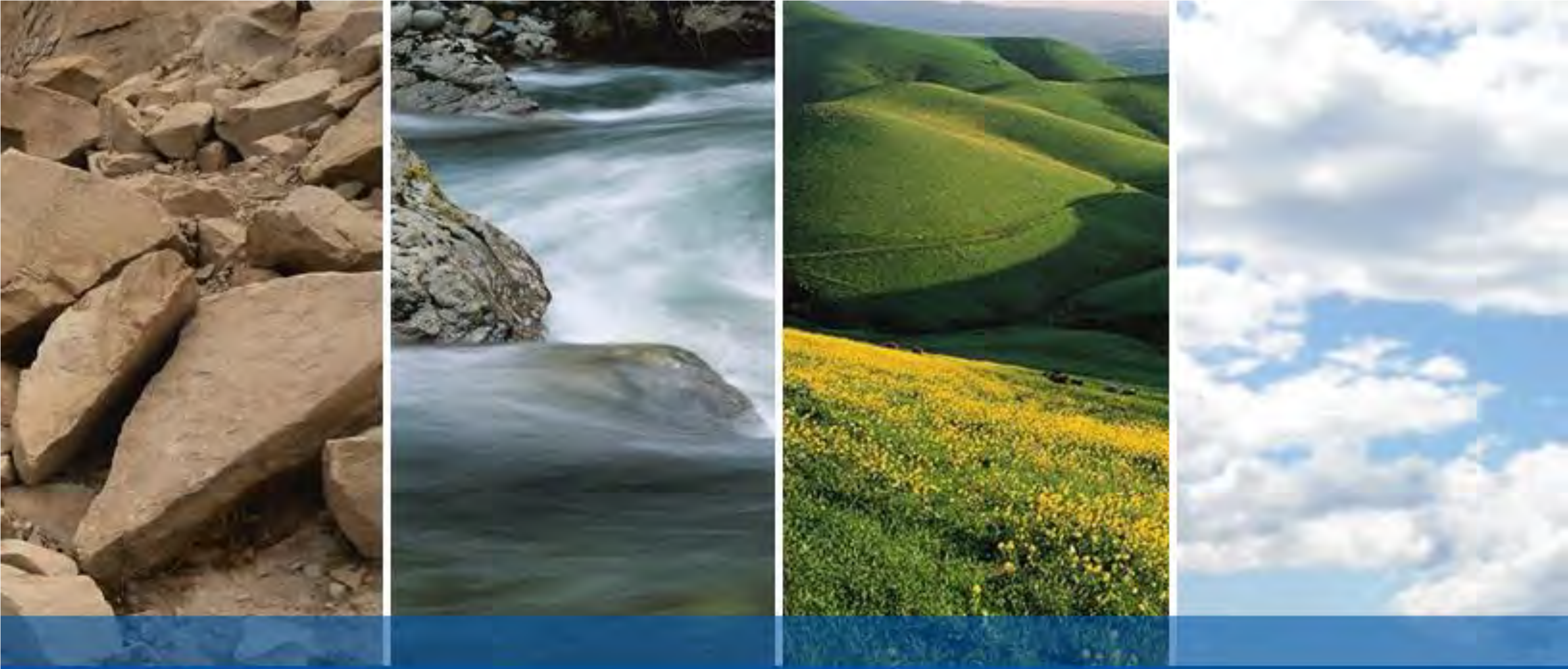
DATE: 01/10/17

ENGEO INCORPORATED

Tested by: I. McCauley

Reviewed by: K. Lecce

Lab Address: 17278 Golden Valley Parkwy, Lathrop, CA 95330.
Phone No. (209) 835-0610



APPENDIX C

LIQUEFACTION ANALYSIS

ENGEO, Inc
2010 Crow Canyon Pl, Suite 250
San Ramon, CA 94583
www.engeo.com

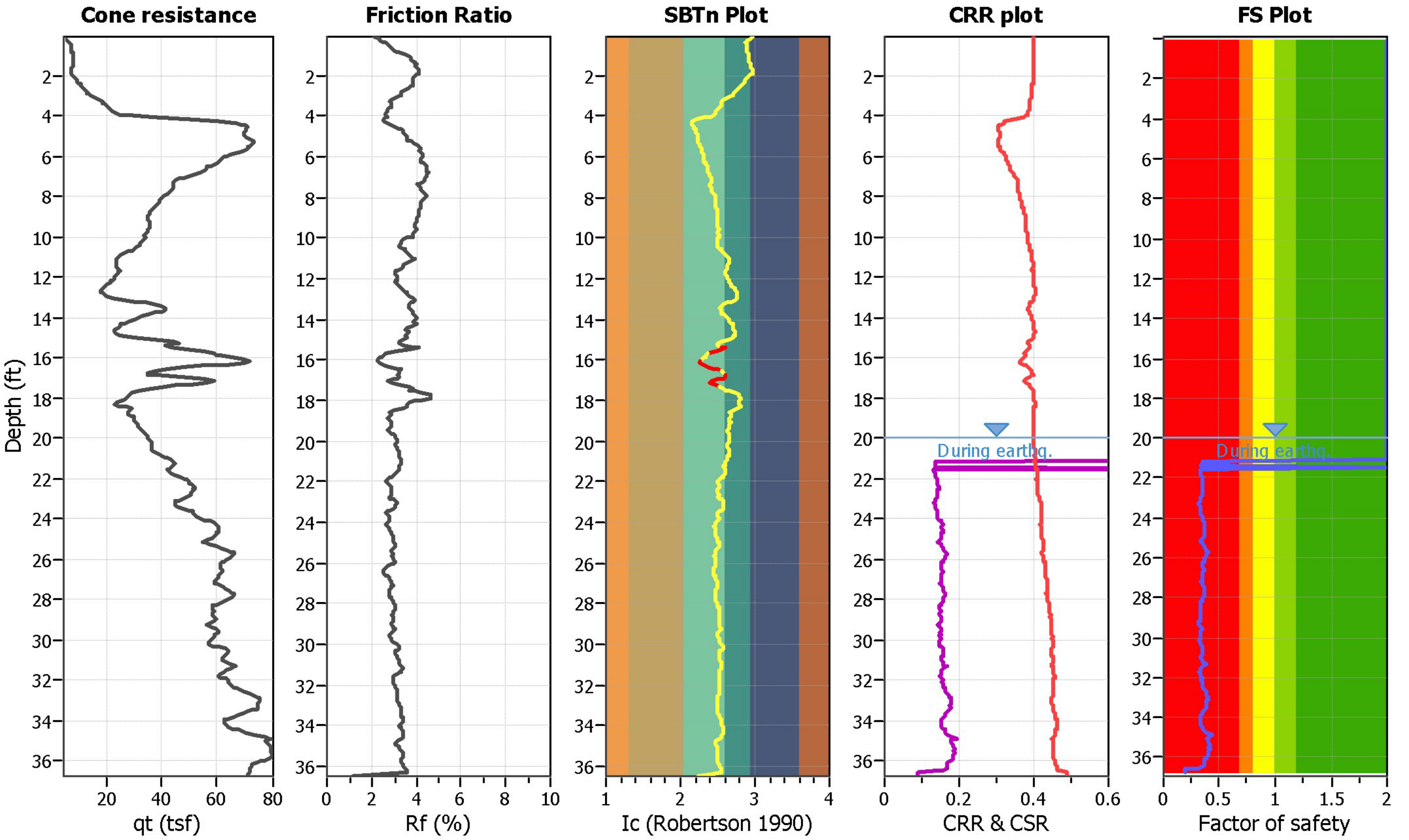
LIQUEFACTION ANALYSIS REPORT

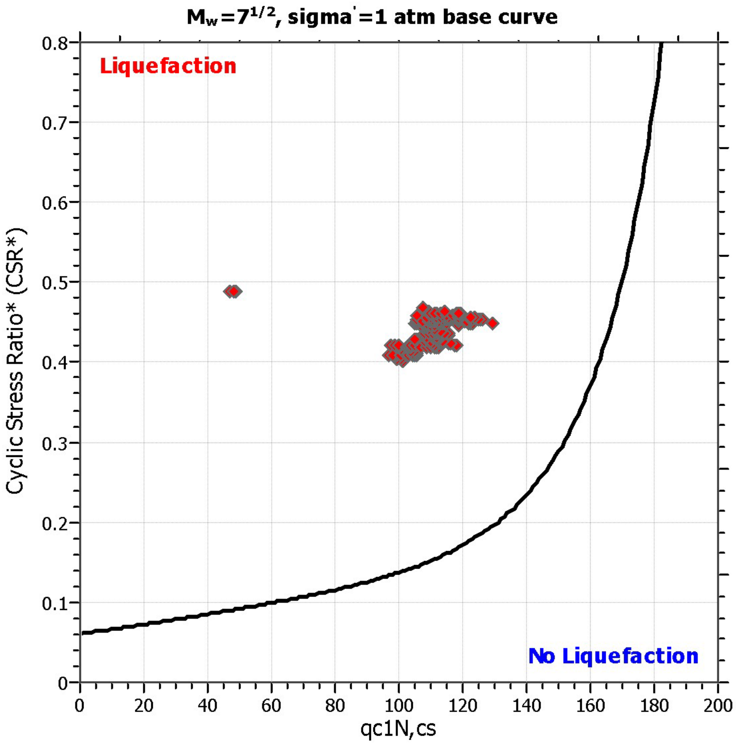
Project title : Chen Property **Location : Dublin, California**

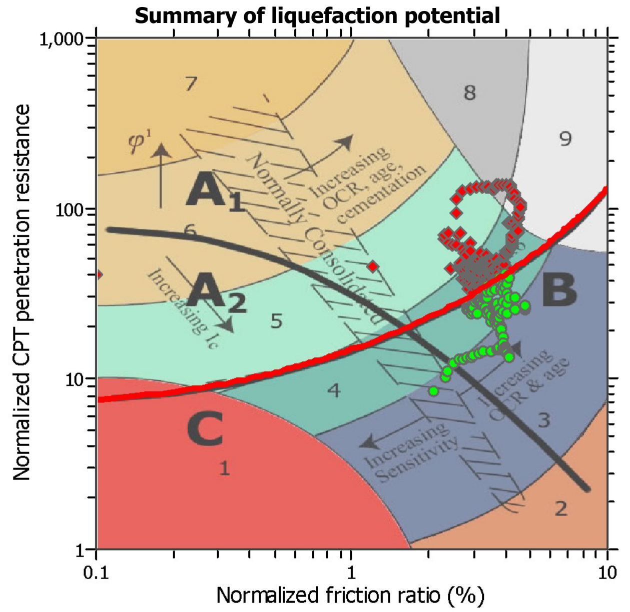
CPT file : 1-CPT2

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.71	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

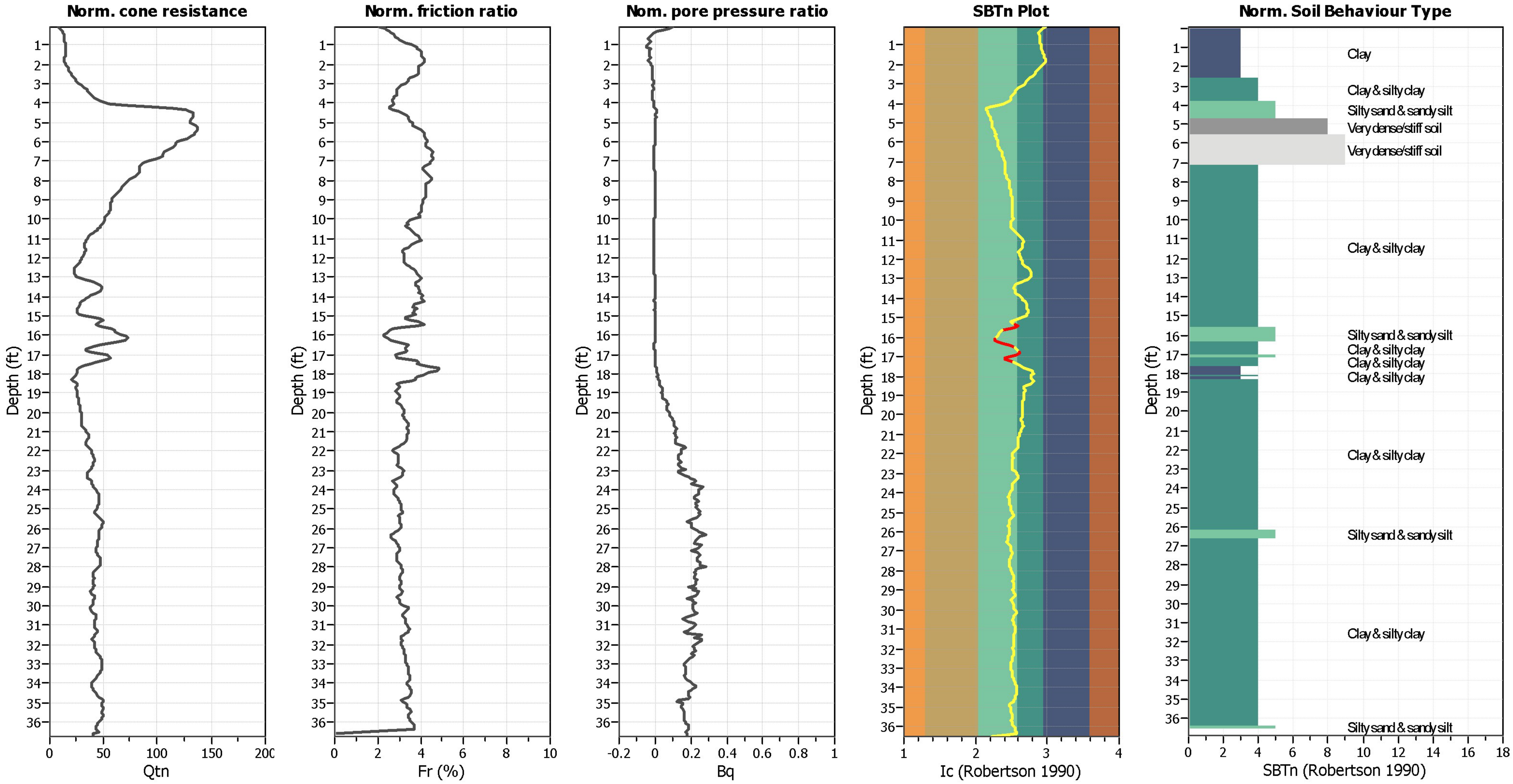






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



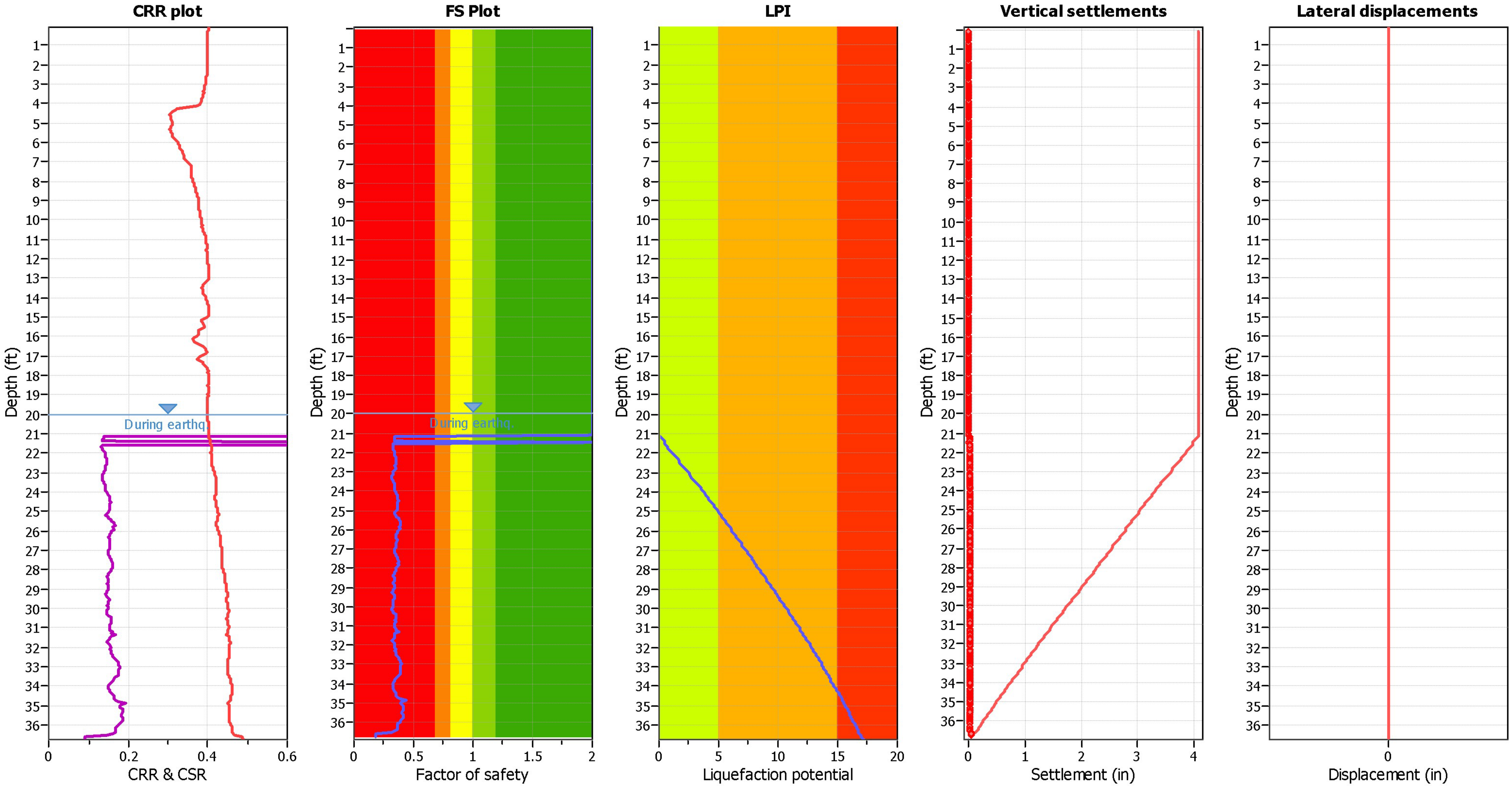
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.71	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

- 1. Sensitive fine grained
- 2. Organic material
- 3. Clay to silty clay
- 4. Clayey silt to silty
- 5. Silty sand to sandy silt
- 6. Clean sand to silty sand
- 7. Gravely sand to sand
- 8. Very stiff sand to
- 9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.71	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

ENGEO, Inc
2010 Crow Canyon Pl, Suite 250
San Ramon, CA 94583
www.engeo.com

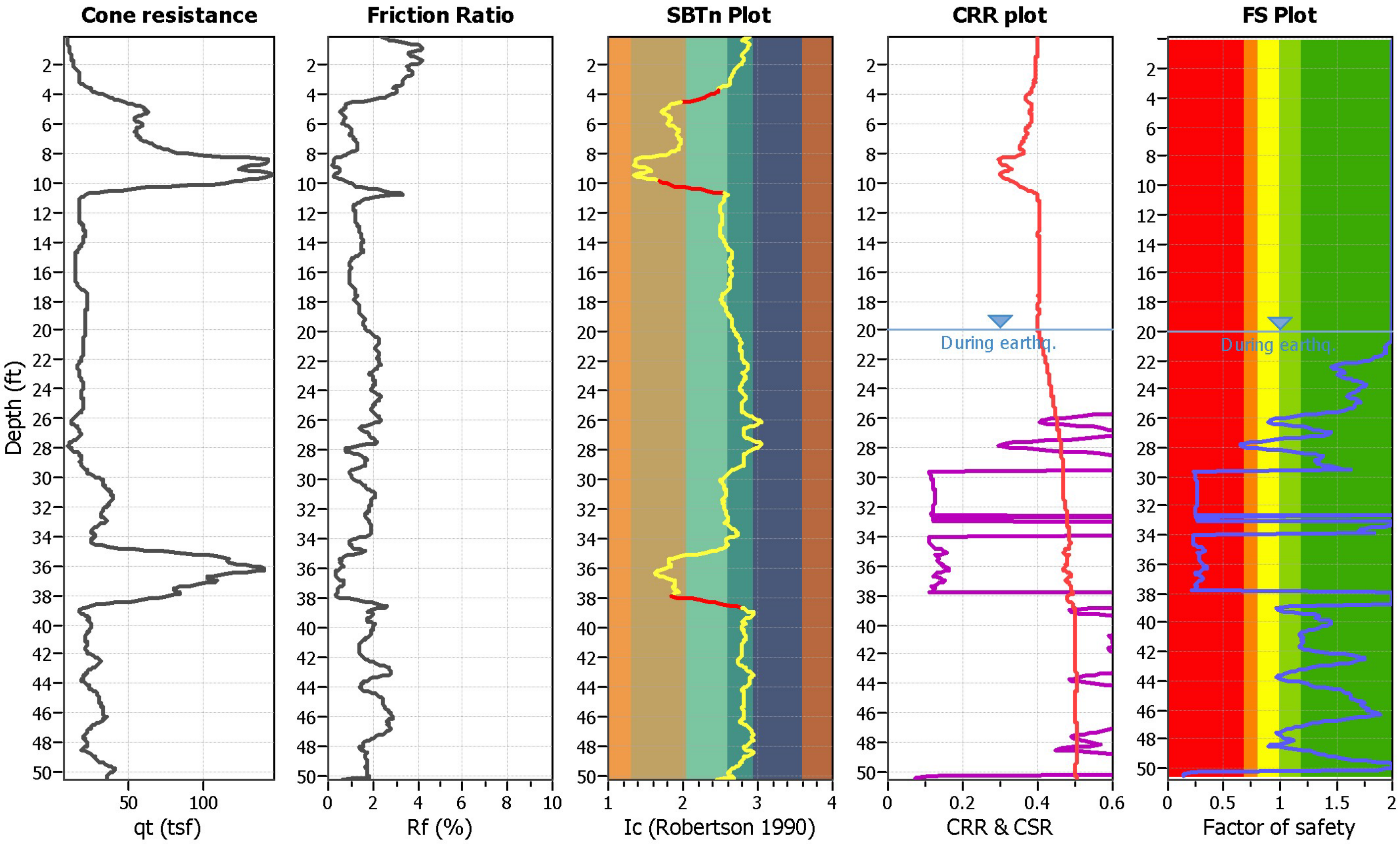
LIQUEFACTION ANALYSIS REPORT

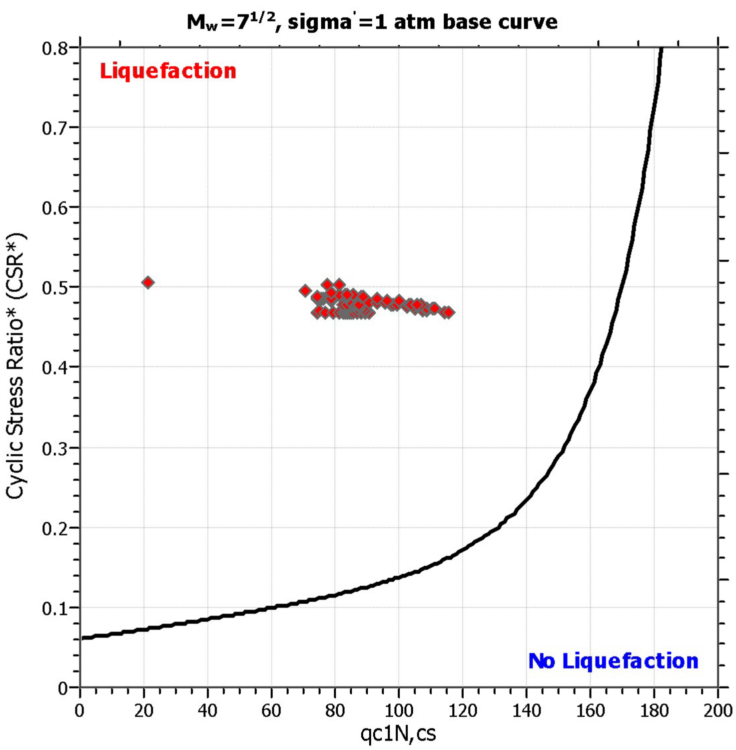
Project title : Chen Property **Location : Dublin, California**

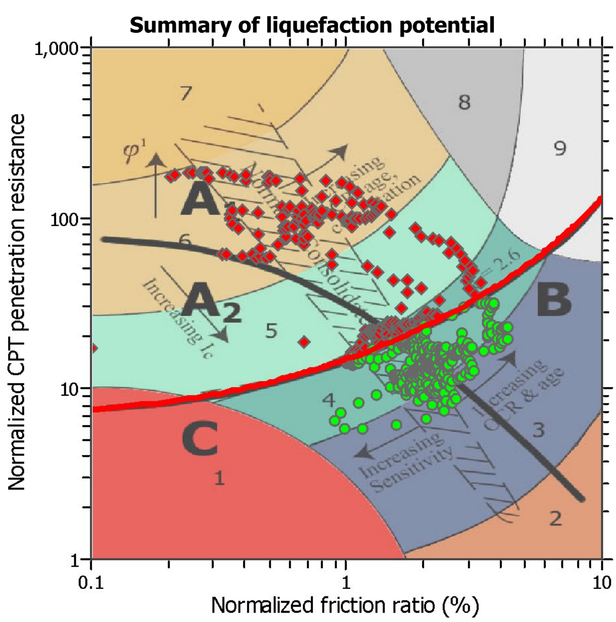
CPT file : 1-CPT5

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.71	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

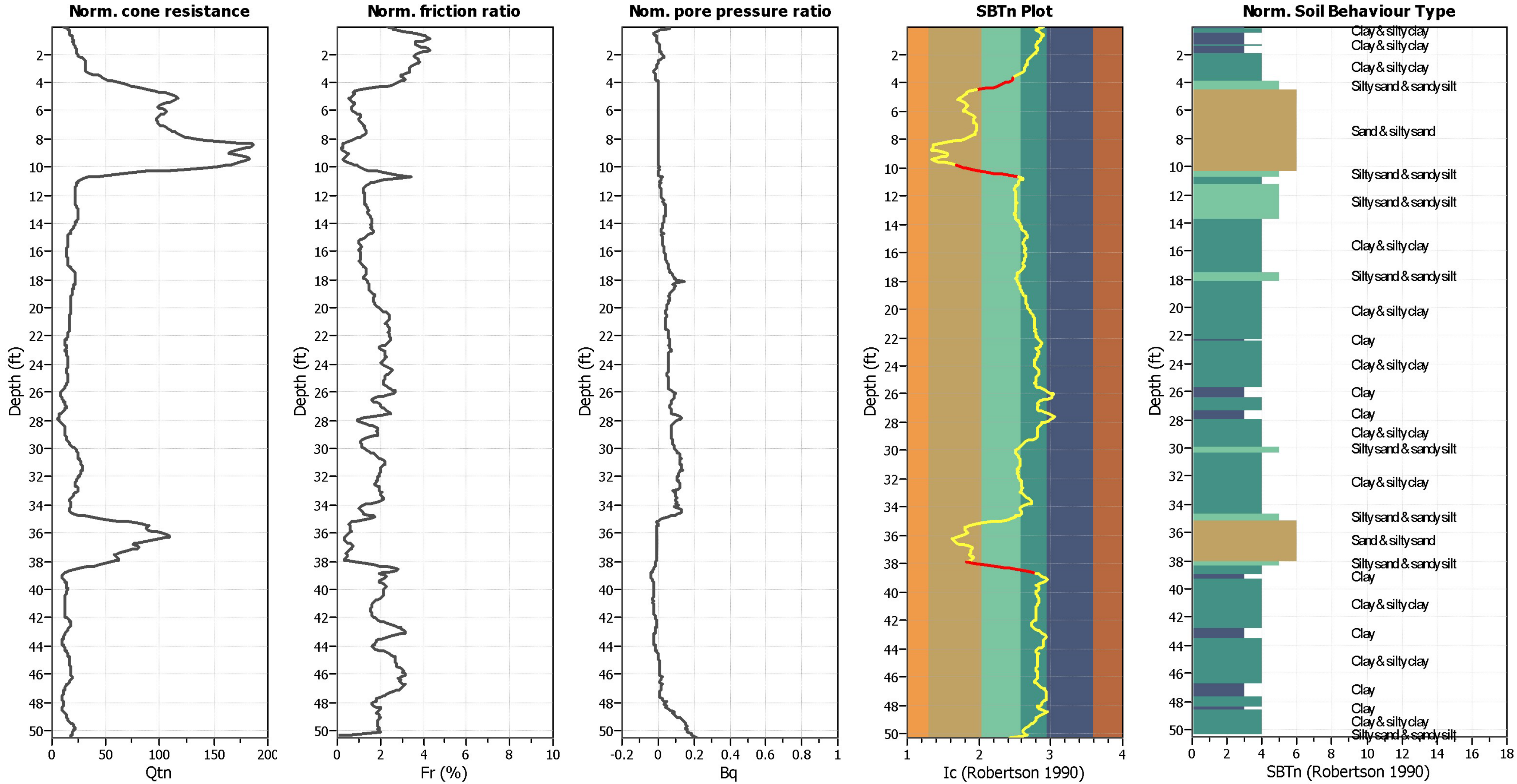






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



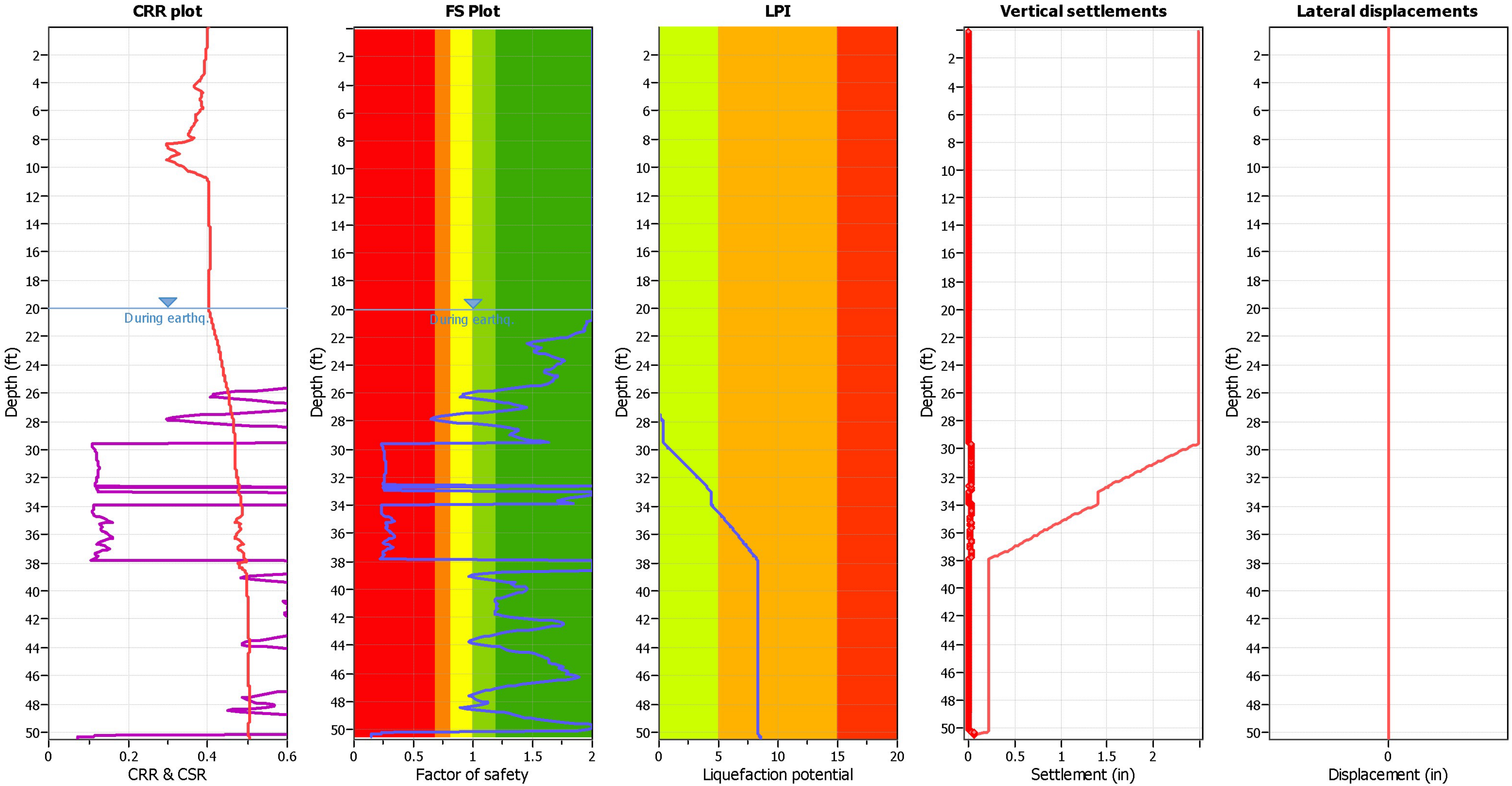
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.71	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.71	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

ENGEO, Inc
2010 Crow Canyon Pl, Suite 250
San Ramon, CA 94583
www.engeo.com

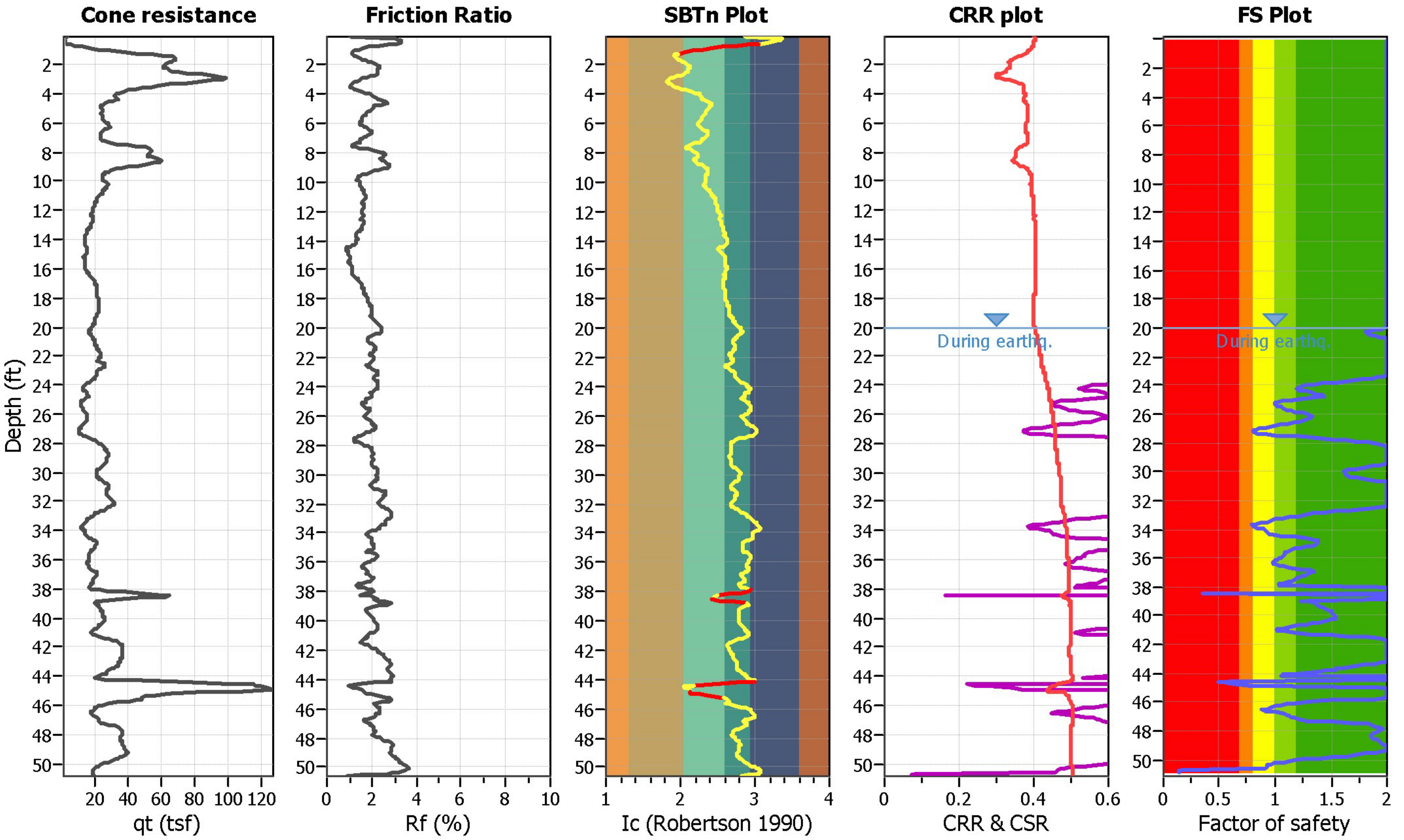
LIQUEFACTION ANALYSIS REPORT

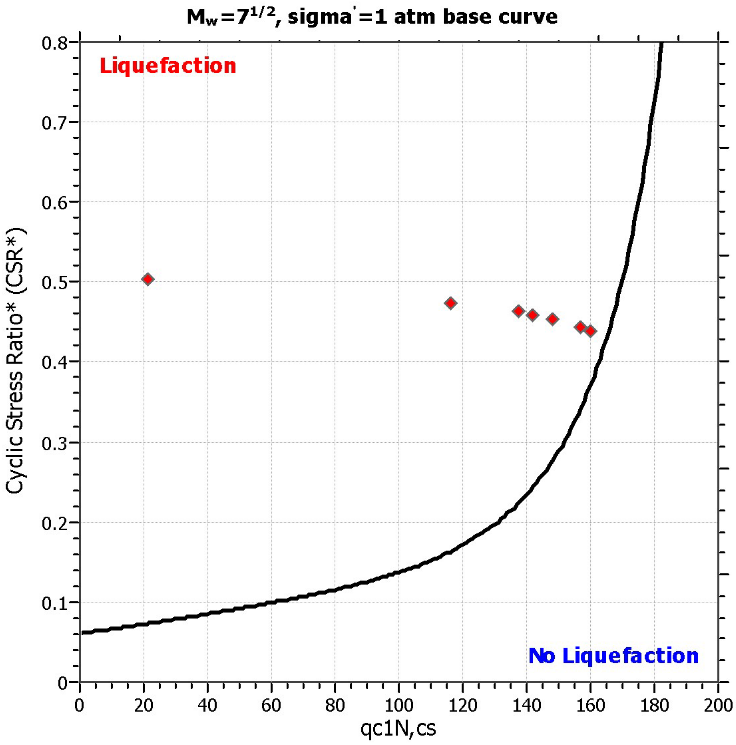
Project title : Chen Property **Location : Dublin, California**

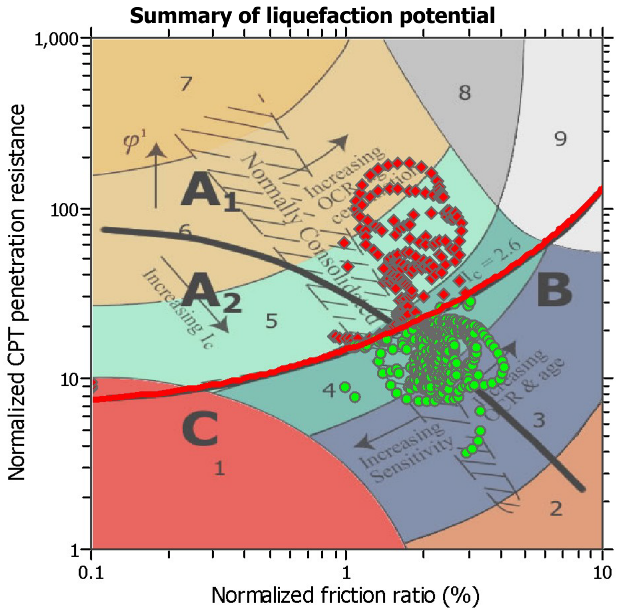
CPT file : 1-CPT6

Input parameters and analysis data

Analysis method:	B&I (2014)	G.W.T. (in-situ):	20.00 ft	Use fill:	No	Clay like behavior applied:	Sand & Clay
Fines correction method:	B&I (2014)	G.W.T. (earthq.):	20.00 ft	Fill height:	N/A	Limit depth applied:	No
Points to test:	Based on Ic value	Average results interval:	3	Fill weight:	N/A	Limit depth:	N/A
Earthquake magnitude M_w:	6.60	Ic cut-off value:	2.60	Trans. detect. applied:	Yes	MSF method:	Method based
Peak ground acceleration:	0.71	Unit weight calculation:	Based on SBT	K_σ applied:	Yes		

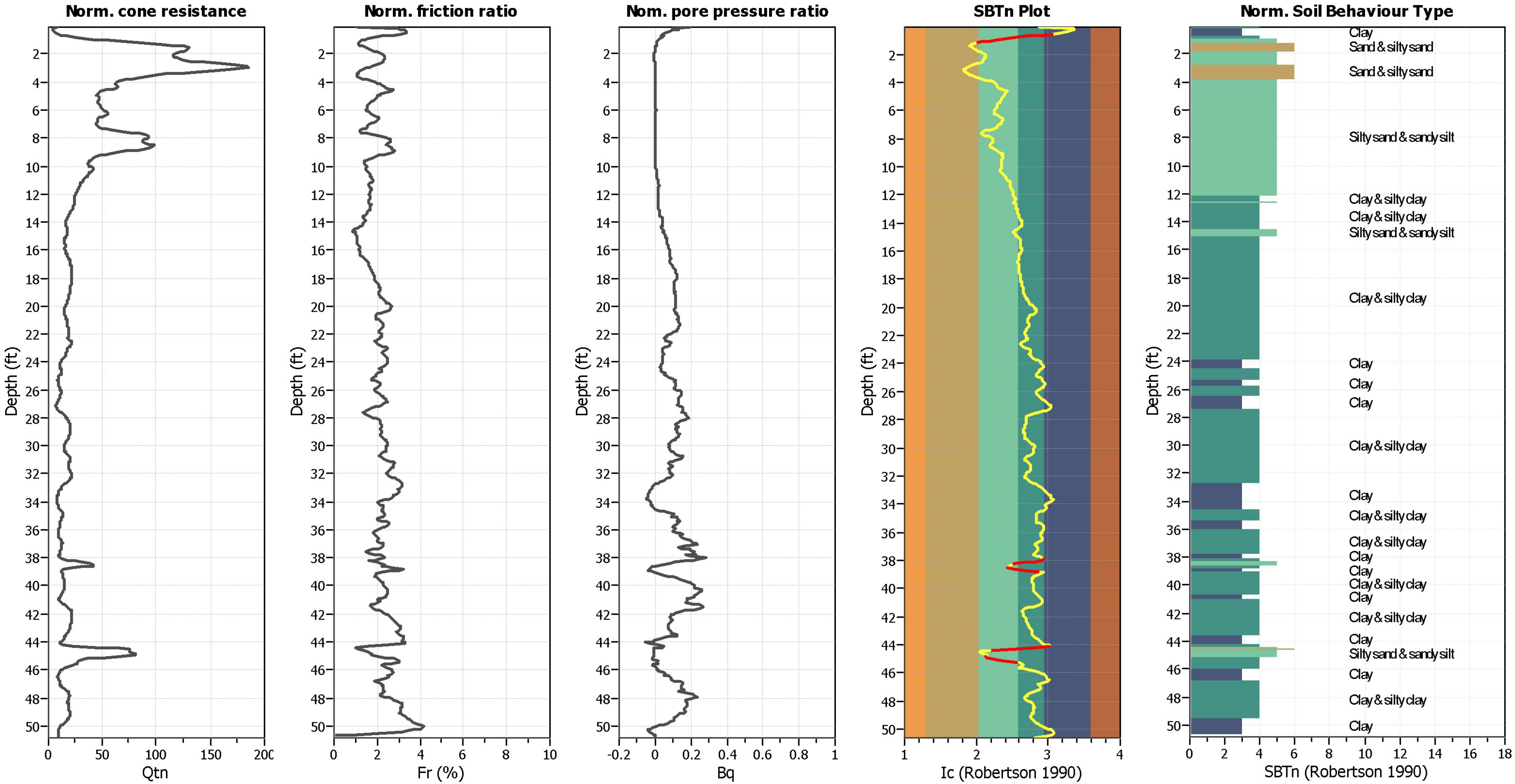






Zone A_1: Cyclic liquefaction likely depending on size and duration of cyclic loading
Zone A_2: Cyclic liquefaction and strength loss likely depending on loading and ground geometry
Zone B: Liquefaction and post-earthquake strength loss unlikely, check cyclic softening
Zone C: Cyclic liquefaction and strength loss possible depending on soil plasticity, brittleness/sensitivity, strain to peak undrained strength and ground geometry

CPT basic interpretation plots (normalized)



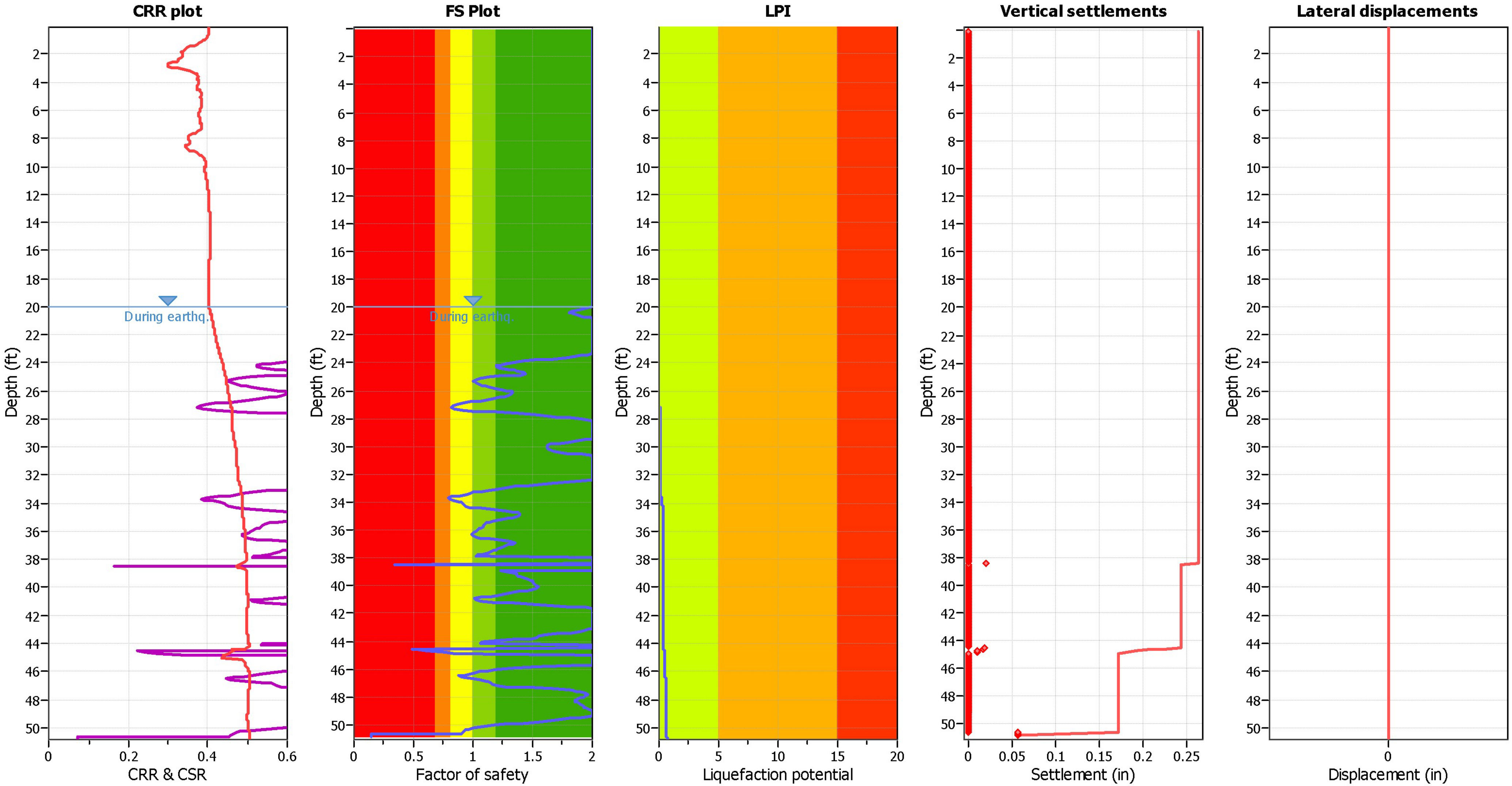
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.71	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	N/A

SBTn legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

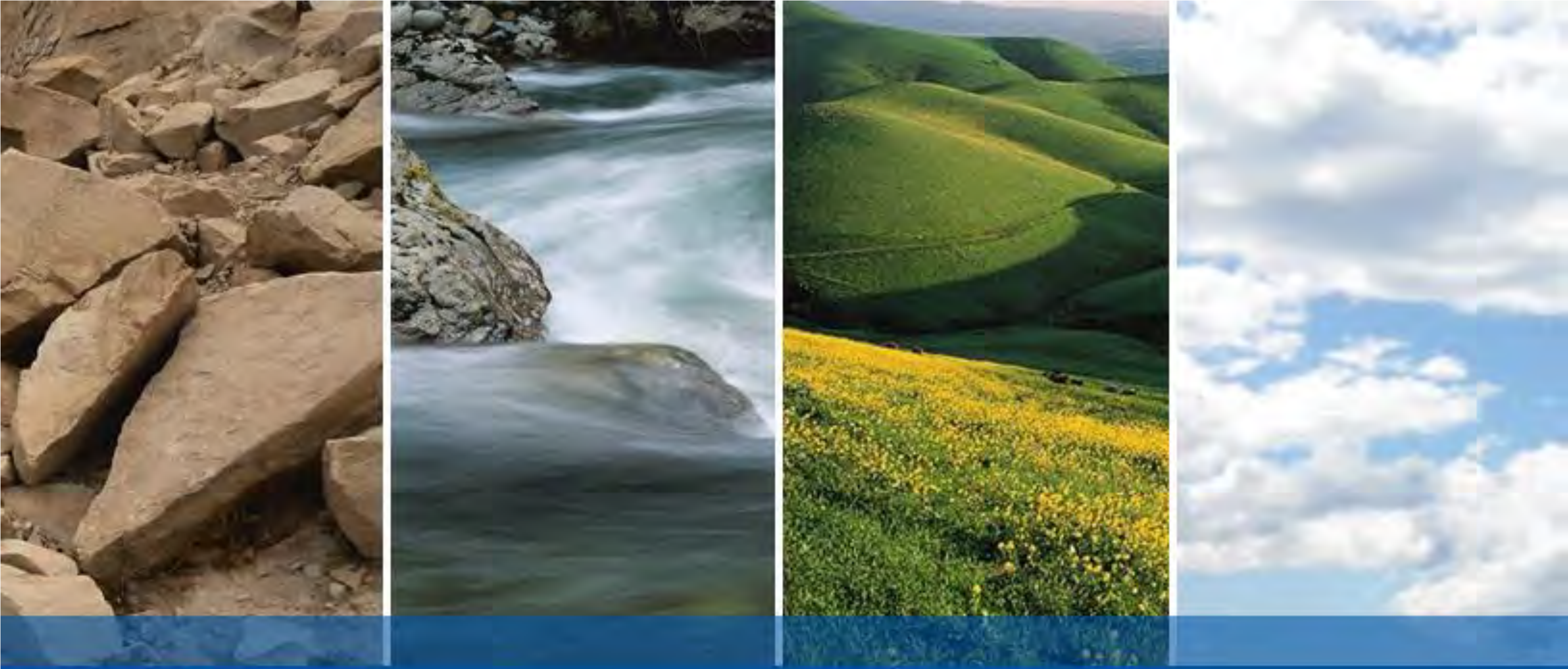
Analysis method:	B&I (2014)	Depth to GWT (erthq.):	20.00 ft	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	6.60	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.71	Use fill:	No	Limit depth applied:	No
Depth to water table (insitu):	20.00 ft	Fill height:	N/A	Limit depth:	N/A

F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk



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Appendix I
Noise Monitoring Sheets

Noise Measurement Survey – 24 HR

Project Number: DUB2101.04
Project Name: 580 Fallon

Test Personnel: Moe Abushanab
Equipment: Spark 706RC (SN:17815)

Site Number: LT-1 Date: 11/9/23

Time: From 3:00 p.m. To 3:00 p.m.

Site Location: Located South of Pandora Way, on a parking sign pole.

Primary Noise Sources: Local Traffic noise
Occasional aircraft
Background construction noise

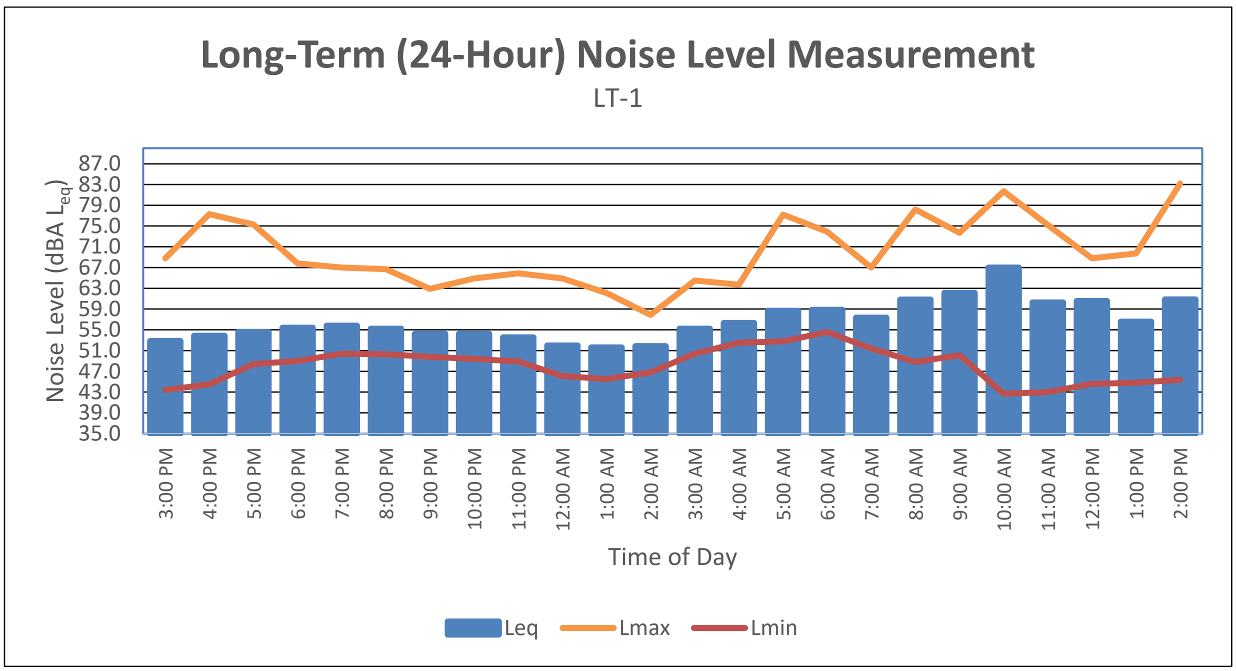
Comments:

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
3:00 PM	11/9/23	52.9	68.8	43.4
4:00 PM	11/9/23	53.9	77.3	44.5
5:00 PM	11/9/23	54.6	75.3	48.4
6:00 PM	11/9/23	55.4	67.8	49.0
7:00 PM	11/9/23	55.8	67.0	50.4
8:00 PM	11/9/23	55.2	66.7	50.3
9:00 PM	11/9/23	54.2	62.9	49.8
10:00 PM	11/9/23	54.2	64.9	49.4
11:00 PM	11/9/23	53.6	65.9	48.9
12:00 AM	11/10/23	52.0	64.9	46.1
1:00 AM	11/10/23	51.6	62.1	45.5
2:00 AM	11/10/23	51.9	57.9	46.8
3:00 AM	11/10/23	55.2	64.5	50.4
4:00 AM	11/10/23	56.3	63.7	52.5
5:00 AM	11/10/23	58.7	77.2	52.8
6:00 AM	11/10/23	58.9	73.9	54.6
7:00 AM	11/10/23	57.3	67.0	51.4
8:00 AM	11/10/23	60.8	78.2	48.8
9:00 AM	11/10/23	62.1	73.7	50.1
10:00 AM	11/10/23	67.0	81.7	42.7
11:00 AM	11/10/23	60.3	75.2	43.0
12:00 PM	11/10/23	60.5	68.8	44.6
1:00 PM	11/10/23	56.6	69.7	44.8
2:00 PM	11/10/23	60.9	83.2	45.4

Source: Compiled by LSA Associates, Inc. (2023).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Noise Measurement Survey – 24 HR

Project Number: DUB2101.04
Project Name: 580 Fallon

Test Personnel: Moe Abushanab
Equipment: Spark 706RC (SN:18571)

Site Number: LT-2 Date: 11/9/23

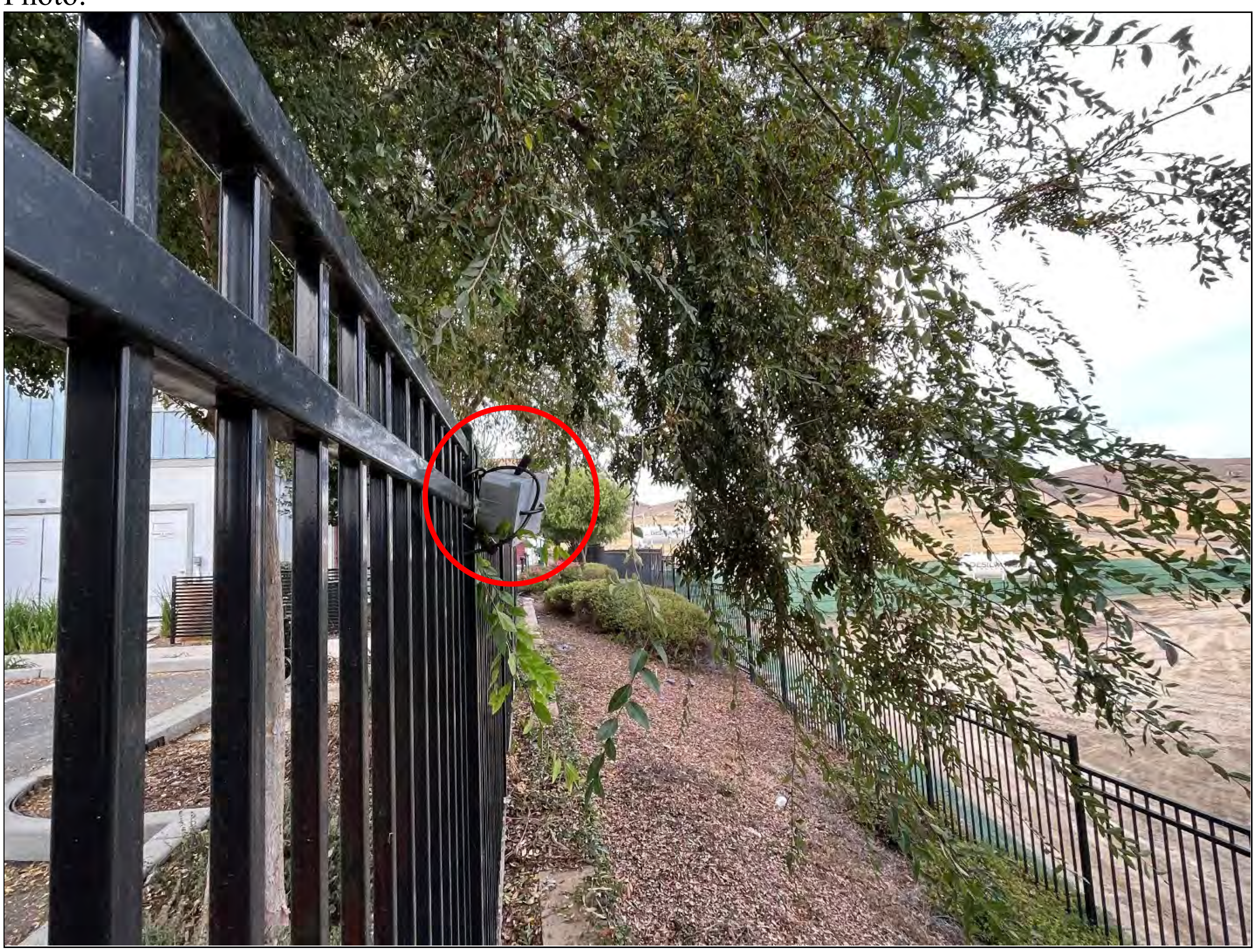
Time: From 3:00 p.m. To 3:00 p.m.

Site Location: Located east of Camino Lp, on a fence

Primary Noise Sources: Traffic noise entering the residential community.
Background construction noise

Comments:

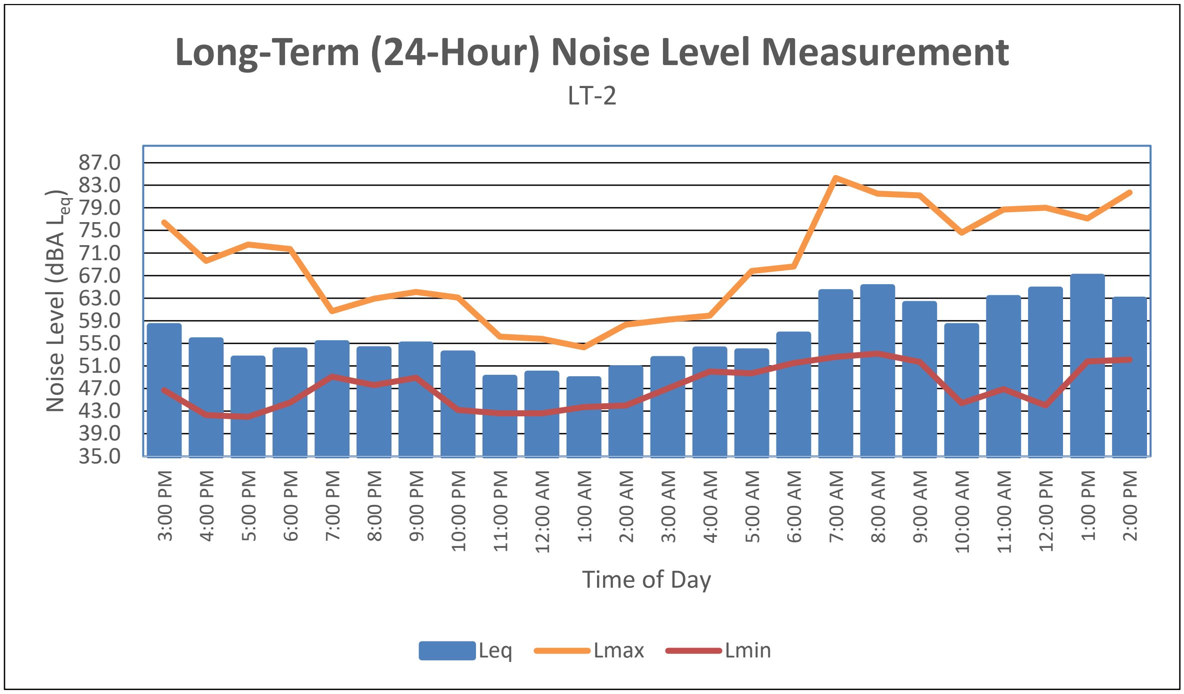
Photo:



Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
3:00 PM	11/9/23	58.1	76.4	46.7
4:00 PM	11/9/23	55.5	69.6	42.3
5:00 PM	11/9/23	52.3	72.5	42.0
6:00 PM	11/9/23	53.8	71.7	44.5
7:00 PM	11/9/23	55.0	60.7	49.1
8:00 PM	11/9/23	54.0	62.9	47.6
9:00 PM	11/9/23	54.8	64.1	48.9
10:00 PM	11/9/23	53.2	63.1	43.2
11:00 PM	11/9/23	48.9	56.2	42.6
12:00 AM	11/10/23	49.6	55.8	42.6
1:00 AM	11/10/23	48.7	54.3	43.7
2:00 AM	11/10/23	50.6	58.3	44.0
3:00 AM	11/10/23	52.2	59.2	47.0
4:00 AM	11/10/23	53.9	59.9	50.0
5:00 AM	11/10/23	53.6	67.8	49.7
6:00 AM	11/10/23	56.6	68.6	51.5
7:00 AM	11/10/23	64.1	84.3	52.6
8:00 AM	11/10/23	64.9	81.5	53.2
9:00 AM	11/10/23	62.0	81.2	51.7
10:00 AM	11/10/23	58.1	74.6	44.4
11:00 AM	11/10/23	63.0	78.7	46.9
12:00 PM	11/10/23	64.5	79.0	44.0
1:00 PM	11/10/23	66.8	77.1	51.8
2:00 PM	11/10/23	62.7	81.7	52.1

Source: Compiled by LSA Associates, Inc. (2023).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level



Appendix J

Dublin Fallon 580 Trip Generation Comparison Memorandum

KITTELSON & ASSOCIATES
155 Grand Avenue, Suite 505
Oakland, CA 94612
P 510.839.1742

Technical Memorandum

December 19, 2023

Project# 26585

To: Shanna Guiler, Associate/Environmental Planner
LSA
157 Park Place
Point Richmond, CA 94801

From: Aaron Elias

RE: Dublin Fallon 580 Trip Generation Comparison

This technical memorandum presents the vehicle trip generation for the proposed development of the Dublin Fallon 580 project located north of I-580 in Dublin, California. Development of this property and its impact on the transportation system have been studied in previous Environmental Impact Reports (EIRs) in 1992, 2002, and 2005 – this technical memorandum is intended to provide a comparison between the trip generation assumed in the 2005 SEIR[1] document with the 2023 proposed development plan.

Dublin Fallon 580 Property

The property is located on an approximately 192-acre site designated as Medium High Density Residential (13.5 acres), General Commercial/Campus Office ([GC/CO], 126.3 acres), Community Park (35.8 acres), Open Space (44.9 acres) and Public/Semi-Public (2.5 acres). The project site is located in the eastern portion of Dublin (Assessor's Parcel Numbers [APN]: 905-0001-006-03; 985-0027-002; 985-0027-005; 985-0027-004). The project is located east of Fallon Road and north of Interstate 580 (I-580). Croak Road divides the project site from north to south and the future Dublin Boulevard Extension Project bisects the project site from west to east.

2005 SEIR Assumptions

Based on the existing approved stage 1 PD and Eastern Dublin Specific Plan, the project would develop 13.5 acres as 200 residential units and about 126 acres would become 1,446,000 square feet of general commercial/campus office. Since general commercial and campus office have different trip generating rates, the 1,446,000 square feet was divided into the component land uses.

Determination of the component land uses was based on the traffic study[2] completed for the 2005 SEIR. This traffic study assumed two types of land uses for the non-residential components of the project including retail and office. To split the 1,446,000 square feet into retail and service components, Kittelson used the same ratio as the overall Fallon Village Supplemental EIR trip generation table (Table 4.2.6 2005 SEIR) which shows 980,000 square feet of service and 1,522,000 square feet of retail. Therefore, the resulting square footage once the 1,446,000 square feet was proportioned was 879,621 square feet of retail and 566,379 square feet of service space.

[1] Fallon Village Project Supplemental Environmental Impact Report, 2005
[2] Fallon Village Traffic Study, August 2005 prepared by TJKM Transportation Consultants

2023 Proposed Project

The 2023 proposed project is proposing to change the land use to the following:

- 238 multi-family dwelling units
- 2,888,400 square feet of advance manufacturing
- Hotel of approximately 314 rooms
- 100,000 square feet of retail
- 100,000 square feet of office

This is larger than the 1,446,000 square feet from the 2005 SEIR but advanced manufacturing uses are a less intensive trip generator than office and retail land uses. The residential component of the project would increase slightly by eight (8) units compared to the SEIR to a total of 238 units.

Trip Generation

Trip generation is a key factor in transportation analyses whether a level of service analysis or a vehicle miles traveled (VMT) analysis is being performed. This section compares the estimated daily trip generation for the Dublin Fallon 580 project parcels in the 2005 SEIR with what the trip generation is estimated to be with the 2023 proposed project. A 2023 proposed project trip generation that is less than the 2005 SEIR trip generation would mean the 2023 proposed project fits within the trip generation envelope of what was studied in the 2005 SEIR and no additional impacts that were not previously disclosed would be anticipated. A trip generation in 2023 higher than what was studied in the 2005 SEIR could potentially result in new impacts and would need to be studied in more detail.

2005 SEIR Trip Generation

The traffic study for the 2005 SEIR used the Institute of Transportation Engineers' (ITE) Trip Generation Manual 7th Edition to estimate trip generation for Fallon Village. The four land use categories used and the associated daily trip generation rate from the ITE Trip Generation Manual 7th Edition include:

- Single Family Residential (ITE Code 210 with a daily rate of 9.57 trips per dwelling unit)
- Multifamily Residential (ITE Code 220 with a daily rate of 6.72 trips per dwelling unit)
- Retail (ITE Code 820 with a daily rate of 42.94 trips per thousand square feet)
- Office/Service (ITE Code 710 with a daily rate of 11.01 trips per thousand square feet)

Based on these land uses and the square footage and dwelling units assumed for the proposed project site in the 2005 SEIR, the estimated daily trip generation for the Dublin Fallon 580 project parcels is shown in Table 1. As shown, the Dublin Fallon 580 project is estimated[3] to have produced 45,550 daily vehicle trips in the 2005 SEIR.

[3] The exact trip generation used is unknown since these documents analyzed overall trip generation of Fallon Village

Table 1: Estimated Trip Generation for the Dublin Fallon 580 Project Parcels Based on 2005 SEIR

Description	Size	Units	ITE	Daily
Single Family	70	du	210	670
Multi-Family	130	du	220	874
Retail	879.621	ksf	820	37,771
Service	566.379	ksf	710	6,236
Total				45,550

Source: Kittelson & Associates, Inc. 2023
Daily Rate from ITE Trip Generation Manual 7th Edition
DU = Dwelling Unit
KSF = Thousand Square Feet

2023 Proposed Project

The current 2023 proposal is more specific than the 2005 SEIR with residential units, advanced manufacturing, hotel, retail, and office land uses. To estimate the trip generation of these land uses, Kittelson used the latest version of the ITE Trip Generation Manual which is the 11th Edition. The five land use categories used and the associated daily trip generation rate from the ITE Trip Generation Manual 11th Edition include:

- Multifamily Residential (ITE Code 220 with a daily rate of 6.74 trips per dwelling unit)
- Advanced Manufacturing (ITE Code 140 with a daily rate of 4.75 per thousand square feet)
- Hotel (ITE Code 310 with a daily rate of 7.99 trips per room)
- Retail (ITE Code 820 with a daily rate of 37.01 per thousand square feet)
- Office (ITE Code 710 with a daily rate of 10.84 per thousand square feet)

Table 2 shows the resulting daily trip generation which is projected to be 22,618 trips per day.

Table 2: Estimated Trip Generation for the Dublin Fallon 580 Project Parcels Based on 2023 Proposed Project

Description	Size	Units	ITE	Daily
Multi-Family	238	du	220	1,604
Advanced Manufacturing	2,888.4	ksf	140	13,720
Hotel	314	Rooms	310	2,509
Retail	100	ksf	820	3,701
Office	100	ksf	710	1,084
Total				22,618

Source: Kittelson & Associates, Inc. 2023
[1]Daily Rate from ITE Trip Generation Manual 11th Edition
DU = Dwelling Unit
KSF = Thousand Square Feet

Conclusion

This technical memorandum documented the trip generation for the Dublin Fallon 580 property studied as part of the 2005 SEIR for Fallon Village and the estimated trip generation for the same property based on the 2023 development plan. As shown in Table 1 and Table 2, the 2023 development plan generates 22,932 fewer daily vehicle trips compared to the assumptions from the 2005 SEIR. This results in the 2023 development plan fitting within the envelope of what was previously studied and no new transportation impacts not previously disclosed would be anticipated based on daily trip generation of the Dublin Fallon 580 property.